

BAY OF BENGAL NEWS

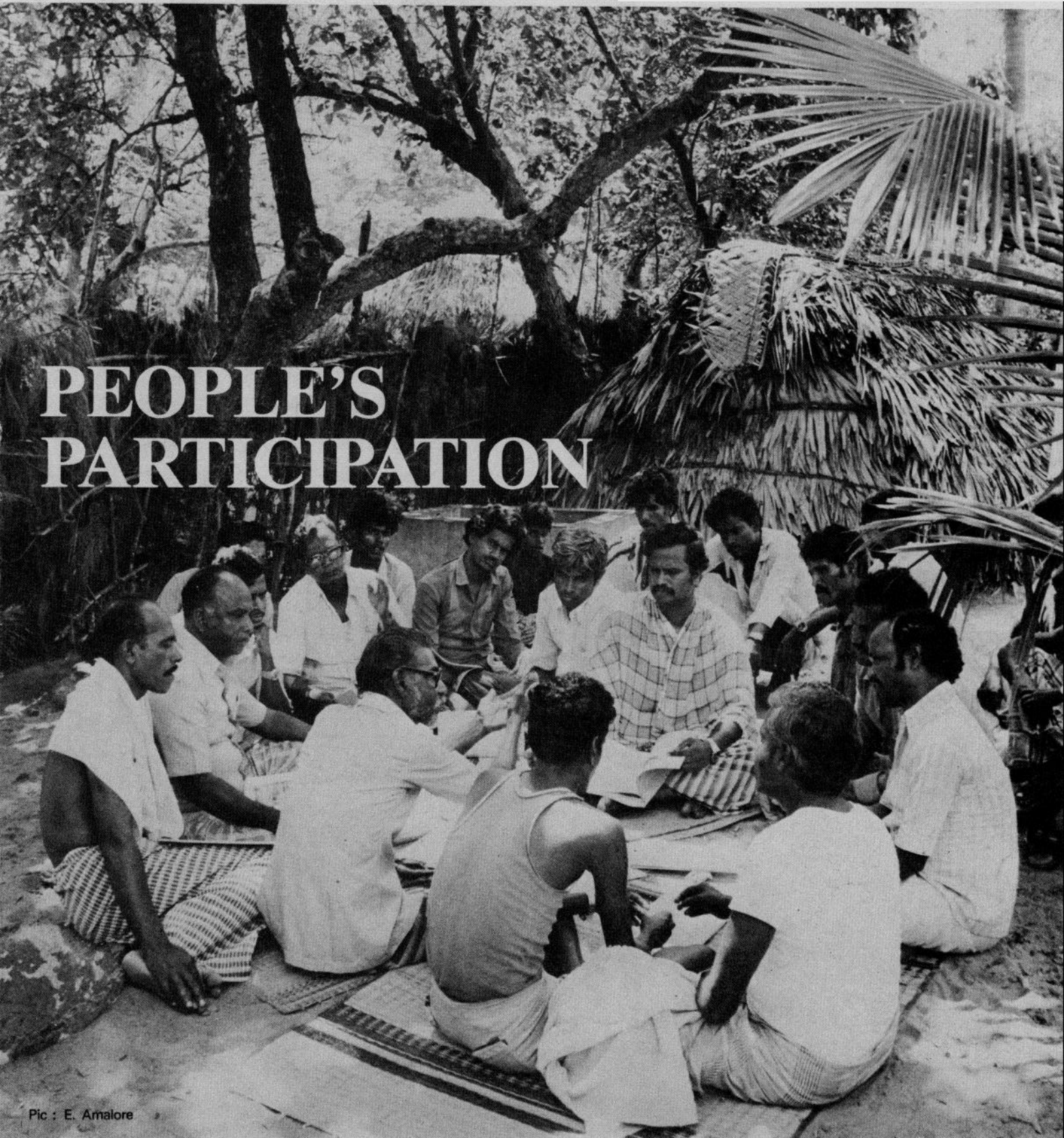


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FOR SMALL-SCALE FISHERIES DEVELOPMENT

PEOPLE'S PARTICIPATION



That fisherfolk should participate in activity which sets out to enable their development is so evident that it has been generally ignored. Even today, unfortunately, fisherfolk are rarely involved in efforts that are meant to help them. On the other hand, the participation of interested beneficiaries in development programmes/prospects is much talked about and almost always advocated in project proposals. This contradiction between intent and action aside, there is a growing body of development literature that suggests that development to be real has to be participatory. Participation seems to mean many things to many people: at one end of the spectrum merely answering questionnaires is considered participation, at the other end empowering communities to take control of their destiny! The result of such a diversity of meanings is that the term "People's participation" has become a myth and no one really questions a myth, or, for that matter, comes to grips with it.

In the old days fisherfolk in their small, often remote habitats lived a fairly secluded life. The trader, and occasionally the tax collector, were the only outsiders who came by. Development, if any, though it was not known as such in those days, welfare, and the solution of problems was a local effort done by the fisherfolk themselves. No one else was really interested in enabling or undertaking development for fisherfolk. But times have changed — today development activity, like social welfare, comes from outside and is done to a community. One of the first problems that arise from this separation of the developer and the object of development is the question: whose needs and whose priorities get met in development efforts? Fisherfolk live their lives, rarely separating and articulating their needs and problems into neat functional areas. They prioritize their needs and problems on the basis of their own logic frames, worldviews and local contexts. Development agencies on the other hand are usually specialized groups working in one or at best a few functional areas, for example motorization of country craft or education. They do so because such specialization is not only efficient and easy to manage but because it reflects the logic frames of scientific development. The result of such dichotomy is that in development praxis the problems that are addressed are usually those perceived as important by development experts. Felt needs of the people usually get second place if at all. People whose felt

needs are not addressed can hardly be expected to be eager and enthusiastic about the programme. And this affects the quality of the programme and its long-term sustainability. Involving people in the definition and prioritizing of their problems is one sure way to get them involved in development activity, and this approach ensures not only success and efficiency but the commonsense approach of doing what people want done first and later moving on to what needs to be done.

Fisherfolk have many problems and needs. And there are many of them. But the resources to help all of them at any one time are lacking. So the question of who should be included as a beneficiary and who not is not merely a question of management but literally a question of poverty or a break from its clutches. And the central question here of course is not who is selected but who does the selection; and once done, does the decision have legitimacy in the eyes of the community? Increasingly one comes across projects which are technically and economically viable which fail due to social, cultural and political factors. Obviously, here again is an aspect that could be done better by the fisherfolk community themselves **than** an outside agency.

A rather alarming trend has been noticed with regard to fisherfolk, and that is, while the total catch of fish is rising in countries like India, the catch per fisherman seems to be dropping. Several reasons are attributed to this phenomenon, from natural increases in fisherfolk population, to overfishing by mechanized fisheries, to poor management. But whatever be the reason, in the remote, scattered situation of most fisherfolk habitats, one thing is certain; the solution to such problems will have to be locally enacted and enforced by the community themselves. No agency or government could possibly regulate or police fisherfolk communities into better resource management if they themselves did not want to.

PEOPLE'S

WHOSE DE IS IT, A

by Rathin

"The logic of fisherfolk participating in their own development of the possible, there is a deeper, more seminal reality."



The logic of fisher-folk participating in their own development is not only based on efficiency, success and the art of the possible, there is a deeper more seminal reason. And central to this reasoning is the meaning of development itself. The very purpose of development, seen in its broad sociopolitical context, is to enable people to critically understand their situations and problems, to identify needs and to prioritize them, to evolve methods of resolving these needs and problems, to mobilize local resources to such end, to implement the activity in an organized manner and to learn from the effort. All this naturally is done by people themselves and not by others for and on behalf of people. All in all one could then say that the case for fisher-folk being central to and involved in any development activity is a strong one.

But, of course, not all good ideas that need to get done are done. And participatory activity has some inherent problems that make its practice difficult. For example it is not easy or practical for all the people in a community to participate in all activities. Some are good at something and others at other things. Some activities require lots of people, others just a few. Decisions need to be taken and enforced. Responsibility needs to be accepted. All this suggests that a community needs good organization and a legitimate and effective leadership in order to be able to manage the activity.

Further, participating in activity leading to development, be it resource management or community control of fish marketing, requires the community to have a critical understanding of the subject and its issues. It requires access to information. It requires the community to have skills in analysis, decision making and negotiation.

Now the question is if a fisher-folk community is organized, has a strong and legitimate leadership, and has skills required to put participation into practice, how on earth could it

Consultation on People's Participation — May 1987

A consultation on People's Participation to be hosted by the BOBP is to be held in May 1987 at a location to be decided shortly. Fish workers, government officials, administrators, social scientists and representatives of development agencies will be invited to join the consultation, share their experiences and discuss the findings of BOBP's one-year study in this area beginning May/June 1986.

During the year the BOBP is studying its own development experience and learning from the experiences of NGOs (non-government organisations), international agencies and governments in countries surrounding the BOBP, and also learning by doing : that is, action-research with participatory methods developed and used in a few BOBP projects. As part of the BOBP study, a 2-day meeting with some NGOs active in fisheries in India was held at the BOBP office in Madras, December 5-6, 1986. The next issue of Bay of Bengal News will report on this meeting.

We hope that out of the May 1987 consultation will evolve a set of recommendations on strategies, methods, techniques, and preconditions that would enable a participatory relationship between fish workers and development agencies everywhere.

Should you have any comments on People's Participation or any experience to share, please write to us at : PEP, BOBP/FAO, P O Box 1054, Madras 600018.

be "underdeveloped"? In other words while participatory development may be something worth striving for there is much a community would have to do to reach the state of affairs when participation becomes a self-reliant activity.

So the situation reduces to one of understanding how a community can reach the level that will enable 'it' to determine its own destiny through its own activity. And the solution is through the intervention of people or groups who support their cause, seek solidarity, and provide the convivial advocacy and leadership to enable such transformation.

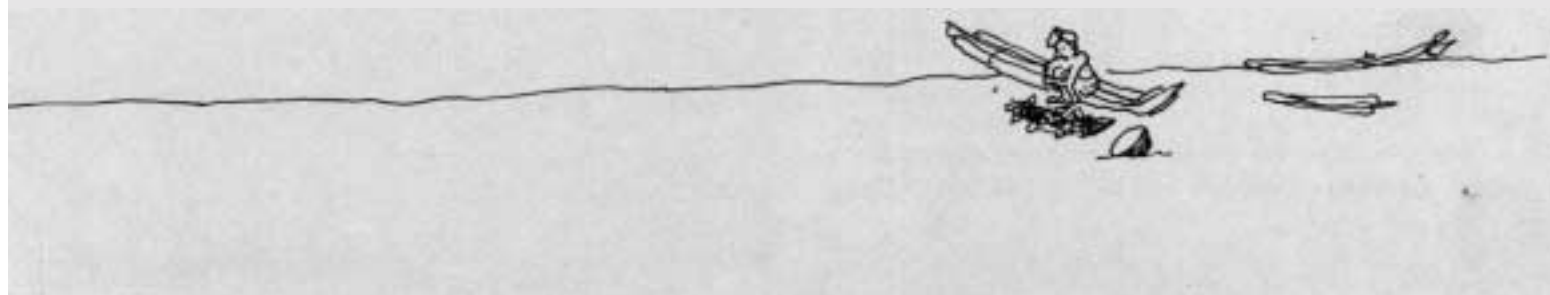
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VELOPMENT N Y W A Y ?

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on — based on the meaning of development itself".



People's Participation: What Can Third World Governments Do About It?

by John Kurien

A prominent social activist urges Third World governments to implement a @-point "action p/an" to make "people's participation" in fisheries a reality. *His* suggestions include an EEZ for small-scale fishermen; conferring on genuine fishermen the exclusive right to first sale of fish; incentives to small-scale technologies; taxes on fish export and special use of these tax funds; and fish production policies that aim primarily at feeding the general population and employing the small-scale fishermen.

People's participation in development and management is now a much discussed topic. Many governments are talking about its importance. International agencies have taken up the issue as part of their project activities. There are programmes with specific objectives to ensure that appropriate methods and strategies are evolved for people's participation. People's participation is seen as the yeast in the dough of development and management projects.

Does participation only imply more involvement of people — in our case fisherfolk — in development and management projects? Are we only talking of participation as a physical and mental process and about the ways and means of best ensuring this? If so, we are not heading for much success.

True participation

Development and management are essentially long-term social processes with distinct historical specifications. People's participation is not mere mental or physical involvement in project activities but pertains to the socio-political goal of having a meaningful say and exercising effective control over these processes.

Paradoxical as it may sound, the evidence from many Third World countries indicates that it is really the nature and bias of "planned fisheries development" of the last three decades which has deprived real fishworkers — particularly the small-scale fisherfolk who form the majority — of the possibility of exercising this meaningful say and of effective control over their lives. The International Conference of Fisherworkers and their supporters (ICFWS) held in Rome in July 1984 pointed out :

"Workers in fisheries who are the main actors in this sector are not engaged in discussions and decision-making either at the broad policy level or at the concrete project level. The lack of participation in the shaping of their future creates many problems from which they are the first to suffer."



True participatory praxis is therefore hardly possible in most fish economies of Third World countries today. Only a change of the socio-political and techno-economic structures within the fish economy will make genuine participation a reality.

The ideal solution for ensuring genuine participation can be achieved only by a radical change of the socio-political systems in the majority of Third World countries towards more egalitarian structures. However, we cannot wait for this complex long-term solution to make a beginning. Short of such a radical change, within their own present socio-economic and political framework, Third World governments, national organizations and fishworkers themselves can act decisively on a few matters of priority.

These will be good starting points to initiate a larger process of structural change in their fish economies.

A Five-Point Action Plan

We shall spell out here a five-point action plan which, if implemented by governments, will go a long way to ensuring that fishworkers are brought back from the periphery to the centre of fisheries development and management. These steps will in turn make true participation a reality

Aquarian reform

Agrarian reforms are no more confined to the precincts of socialist countries. Likewise, aquarian reforms solely on the

Promoting small-scale harvesting technology — like *shore seining* in Sri Lanka.



basis of economic and social rationality are desirable steps to be undertaken by any popular government.

Aquarian reform has two facets. Firstly, granting the right to own fishing assets exclusively to those who are willing to fish; no more absentee owners. Secondly, placing the primary right and responsibility for management of the marine resources at the micro and mezzo levels to such a community of genuine 'fish producers'. How can this be done? An EEZ for small-scale fishermen, and district-level committees of small-scale fishermen to monitor resource exploitation, are two possibilities.

These reforms are mutually reinforcing. Along with the appropriate technological choice (see below) these reforms will greatly restrict the tendency of go-getting entrepreneurs to make indiscriminate short-term gains, generating long-term economic and ecological crises. Distributive justice, a much greater sustainability of the resource and greater participation in effective management become realizable goals.

Producer control over first sale

Genuine fish producers alone should be given the right to make the first sale of fish — at the beach, wharf or harbour. Producer controlled sales organizations which are given official sanction by law may be allowed to formulate ways and means of disposing fish. To strive for producer control beyond first sale may be uneconomical except perhaps in the case of exportable species (see below).

Small-scale technology, dispersed spatial organization

Aquarian reform without reference to a technology appropriate to the ecosystem can prove counter-productive. The very nature of the distribution of marine resources in the tropical waters off most Third World countries speaks of Mother Nature's inherent bias for a small scale of harvesting technology and a great diversity of fishing gear. This distribution is characterized by large numbers of species; high dispersal in the in-shore waters; varied sizes; availability in small quantities and with considerable interaction between species. This is particularly true in the most resource-abundant coastal waters. Promoting this option — of small-scale harvesting technology and diversity of fishing gear — will in turn necessitate a more dispersed spatial organization of on-shore activities. Such a technological option can utilize some of the latest scientific knowledge. It can also draw on the vast storehouse of accumulated wisdom of fisher-folk (a fast diminishing fund if not rejuvenated by use and interaction) on matters regarding technology appropriate to their milieu.

Aquarian reform, small-scale technology and decentralised activity will make for more manageable control of the organization and the means of production by fishworkers. It will help foster a more equitable distribution — socially and spatially — of income and employment. When harvesting and processing activities are small-scale and dispersed, trade loops resulting therefrom will tend to be shorter. This keeps marketing costs low and fish less costly — hence more accessible to the poor among the local population.

Social orientation to export

The fishery export sector of most Third World countries is linked primarily to developed country markets. This is an important consequence of post-1950 "planned fisheries

development". This sector is marked by strong mercantile control. Short-run profits are the rule even if such operations could endanger the fishery resource.

While foreign exchange earnings are crucial for these countries, it is obvious that indiscriminate investment in the export sector could trigger disaster — both for the resource and the fishworkers who earn a livelihood from it. Adopting a middle line between nationalizing the sector and permitting its anarchic growth might ensure sustained development. Additional measures — such as taxing export incomes and exclusive control of these tax funds by a tripartite body of fishworkers, entrepreneurs and government to implement plans for fishery resource and industry development — must become an integral facet of any sound fishery management plan,

Fish for livelihood and food

In most Third World countries, fish has always been a source of livelihood for fishworkers and a source of food for local consumers. However, we notice that in the post-1950 "planned fisheries development phase", development programmes either overlooked these priorities or got caught up in a dynamics which actually resulted in less fish for the needy local population and hardly any real improvement in the standard of livelihood of the majority of the fishworkers. Implementing the above four action plans is a prerequisite to ensure that this long-lost policy objective is brought back from the periphery to the centre of fisheries development plans. In addition, positive encouragement in the form of investment subsidies to small-scale fishermen to harvest

locally consumed fish and similar incentives to fish distributors who cater to the local market will pay rich dividends. A more coordinated effort by food research and technology institutes to enhance the range of food from the sea and cultivate tastes for the same in the local population is imperative. Such approaches have the additional benefit of making people — fishworkers and fish consumers — the focus of development. This will provide the surest incentive for genuine participation.

Post-Script

The lip-service which has been paid in the recent past to the need for fishworker participation in fisheries management and development will remain lip-service unless it is recognized that people participation implies a change in the socio-economic and political structure of the fish economy.

Equally true is the fact that fishworkers have never been granted the right to participate — either by enlightened policy makers or by committed politicians. Wherever it has become reality, only a hard struggle by the fishworkers themselves made it possible. This struggle can never be restricted to the narrow realm of the politics of classes and social groups. It must necessarily spill over to the concrete struggle of proving that alternative paths to development are possible. Herein lies the challenge — to make people's participation the sine qua non of true development.

About the Author : John Kurien is a researcher and social activist with the Centre for Development Studies, Trivandrum, India. He was Secretary-General of the International Fishworkers Conference held in Rome in 1984.

The focus of development should switch from fish production to fisherfolk





FISHERFOLK POWER IN SOUTH INDIA'

by S.R. Madhu

In Kerala and neighbouring Tamil Nadu, fisherfolk power is traumatizing the fisheries scene as *never before*. While the exploitation of fisherfolk (by petty merchants and moneylenders) is far from over, organized resistance to it is mounting. The captors at sea are no longer captives on land.

This article provides glimpses *into* fisherfolk movements in Trivandrum, Kanyakumari and Quilon. The first two were an outcome of long years of confrontation, marked occasionally by violence. The one in Quilon was perhaps more peaceable. But all three movements share a common philosophy; and symbolize the urge of fisherfolk to shape their own destiny. "A depressed community is slowly coming alive with new opportunities for leadership and action" says a spokesman of the movements.

An Expanding Network from Trivandrum: The Impact of SIFFS

SIFFS integrates an array of services for fisherfolk — socio-economics, technology, research, education, culture. Linked to it are three fishermen's federations, from Trivandrum, Kanyakumari and **Quilon**. In a worldwide collective of fish workers now being planned, SIFFS may play a key role.

"Siffs" sounds like an analgesic. It isn't — though some may point out that "Siffs" has cured fisherfolk of some headaches and passed them on to their foes!

SIFFS stands for South Indian Federation of Fishermen Societies. Started in 1980 headquartered in Trivandrum. It

is an umbrella organization that covers three district federations of fishermen's societies (Trivandrum, Quilon, Kanyakumari) — some 45 societies and 6,000 fishermen. The total annual fish sales turnover of the societies exceeds \$ 3 million. The value of their other services to fisher-folk cannot be gauged.

The setting up of SIFFS marks the third phase in the recent turbulent history of activist Kerala fishermen. The first phase began in 1970, with the now-famous revolt by fishermen of Marianad near Trivandrum; they demanded and won after a violent struggle the right to dispose of their own catch at the first point of sale, the beach.

The second phase was the setting up in 1977 of the PCO (Programme for Community Organization), Trivandrum, under whose banner, articulate young men and social workers" helped fishermen set up several Marianad-type fishermen societies and initiated a range of socio-economic, cultural and research activities for the betterment of fisherfolk. These included seminars, women's groups, schools, training activities etc.

With the PCO spurring new societies, and with men of kindred spirit launching similar movements against exploitation in Kanyakumari and Quilon districts, the need was felt for an apex body to strengthen and coordinate the movement. SIFFS, launched in 1980 was the answer, and it marked the third phase of the fishermen's movement.



What are the functions of SIFFS and what has its impact been? It is multi-disciplinary in approach and has a neat three-tier set-up (see figure). At the village-level, primary societies auction fish that's consumed locally (the less prized varieties) and ensure a decent return for the fishermen; they also promote savings for fisher-folk for use on a rainy day; facilitate bank loans for fishing equipment; and sell fishing requisites at fair prices to fisherfolk.

At the district level, each federation affiliated to SIFFS (Trivandrum, Quilon and Kanyakumari) procures and markets prawn and cuttlefish bound for fish export; helps market species like dried anchovy, salted ribbonfish and shark (which move to distant markets), thus eliminating a series of middlemen; buys fishing equipment in bulk and sells it 'to fishermen at reasonable prices; and provides accounts and training services to be village-level societies.

SIFFS, the apex organization located in Trivandrum, advises the three district federations, helps develop boatbuilding technology and also focuses on training, research and consultancies.

A SIFFS boatyard in Anjengo near Trivandrum has made some 200 "plyvallams" — canoes of marine plywood using a "stitch and glue" technique. SIFFS also helps the Quilon federation run its own boatyard, while a third boatyard will soon come up in Trivandrum.

The SIFFS network is particularly strong in educational, social and training activities. The PCO in Trivandrum is an example. The FCDP (Fishermen's Community Development Programme, Quilon) is another, Fishermen of the SIFFS network are unionized too — many of them are members of the Kerala Independent Fishermen's Union.

"Thus ours is an integrated set-up, and our services are multidisciplinary" says the young and articulate V. Vivekanandan, chief executive of SIFFS and a product of the Institute of Rural Management, Anand, Gujarat.


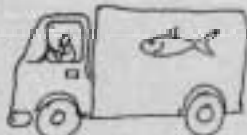
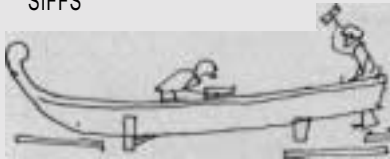
Talking of the comparative strengths and weaknesses of the three federations, Satish Babu, chief executive of the Trivandrum federation and also a product of the Anand Institute, says : "Kanyakumari is the highest in terms of fish sales, Quilon in terms of percentage of fishermen covered (75%



Above : SIFFS col/d storage plants — the small fisherman's bridge to distant markets.
Below : Activities for fisherwomen include loans, creches, societies, seminars, etc.



SIFFS : ACTIVITY CHART

	<p>Auctioning of locally consumed fish Promotion of savings Bank loans for equipment Retail sales of fishing requisites</p>
<p>DISTRICT FEDERATION</p> 	<p>Marketing fish in distant markets Supply of ice Bulk purchase of fishing requisites Monitoring village societies Educational and welfare activities</p>
<p>SIFFS</p> 	<p>Development and promotion of appropriate technology Boatbuilding Outboard motor servicing & training Research; Studies; Consultancy</p>

of fishermen south of Neendakara), The Trivandrum federation covers only 15 per cent of the district's active fishermen. This is partly because the general level of exploitation in Trivandrum has come down Our societies have to offer something new and radical to attract new members We prefer their coming to us of their own accord".

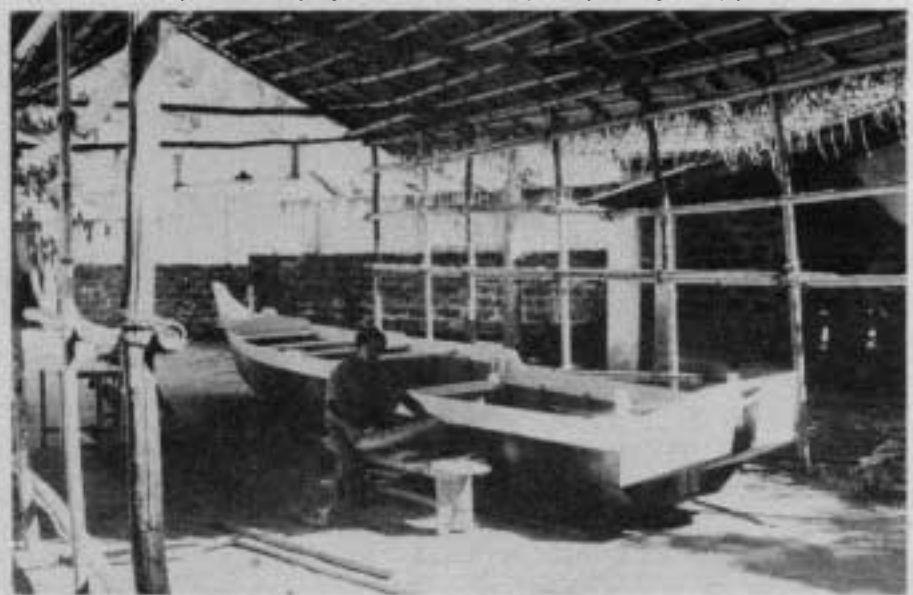
The SIFFS network has given fisher-folk a new voice. And because of its strong grassroots base, its influence on planning and action for fisherfolk communities — by government or other agencies — is formidable. Position papers prepared by the PCO, Trivandrum, are found useful by state government planners; plans are on for an international collective of fish workers, in which SIFFS plays a key role, The SIFFS network is expanding. What accounts for the effectiveness of SIFFS as a people's organization?. And for the strength of the voluntary movement in fisheries in this part of India? Leaders of vision? Activist fishermen? The fertility of the Kerala-Tamil Nadu environment? The inevitable backlash against fishermen exploitation? The role of the Church? (Fishermen in the deep south belt are predominantly Catholic). John Kurien, one of the seminal figures of the movement, says that "manageability" is an important plus point with voluntary agencies. Unlike the government, which is responsible for an entire province or country, a voluntary agency covers a small area and is better able to establish a close rapport with the people. Other factors — such as commitment, ability etc. —

being equal, the "manageability" of any voluntary agency gives it an edge over a government programme.

Kurien says that while the SIFFS movement was indeed initiated by individuals with vision, major credit should go to Rev. Peter Bernard Perera, Bishop of Trivandrum, who initiated people's participation in fisheries as far back as 25 years ago. He emphasized that one should never assume that the people are wrong. Bishop Perera had formulated three guidelines for a development project.

- If you wish to meet the people's needs, you need their complete participation;
- Don't do anything free — don't create a dependency relationship — make the people feel they are involved in the initiative;

The SIFFS boatyard at Anjengo which builds specially designed plywood vallams.



Once you repose faith in the people, don't interfere. Allow them to grow.

Bishop Perera also stressed the need for professionalism in voluntary work. He recruited economists and sociologists for the work of the Trivandrum Social Service Society. He brought a Latin American expert in low-cost housing to Trivandrum to plan houses for fishermen. The foundation for a sound voluntary movement in Kerala fisheries was perhaps laid by Bishop Perera, says Kurien. The PCO was to some extent an outgrowth of this. Over time, other groups developed in surrounding areas, and the SIFFS network emerged.

SIFFS has over the years created a resounding awareness of the fact that small-scale fishermen give much to society and get little in return. Perhaps the best testimony to this awareness is the most recent phenomenon in Kerala — the emergence of a massive government-sponsored network of fishermen cooperative societies known as MATSYAFED (Kerala State Cooperative Federation for Fisheries Development Ltd.) Under a project funded by the NCDC (National Cooperative Development Council), MATSYAFED seeks to increase production from traditional fisheries and ensure better returns to fishermen through its own beach-level auctioneers. Loans, savings, net-making, fish distribution and fish product manufacture schemes have been launched. Small-scale fishermen are thus apparently at the forefront of action, not merely in SIFFS but also in the government cooperative sector. People's participation has come a long way since Marianad.



In *BOBP* pilot activities with fisherwomen, the latter take the initiative in suggesting small and useful schemes for their villages — such as bank loans, schools or ration shops.

Whose Development Is It, Anyway?

(Continued from page 3)

Which brings us pretty much to where we began, and raises the following questions, addressed to both fisherfolk and development agencies, regarding the implications of participatory development praxis :

- Who participates in whose activity? Is participation a means of “selling” to the community development packaged by agencies and governments? Or, should not the call for participation come from the community to the agency?
- Participatory development implies that development programmes and projects become less of doing and imposing and more of motivating and enabling; a shift from management to extension, as it were.
- It implies that local traditions, knowledge and experience are not only necessary for the success of programmes and projects but in many ways may actually be ‘superior’ to external expertise.
- It implies that the technology and practice of development will have to be demystified and simplified to enable people to not only learn but to critically understand and use the knowledge and to work with it. It also implies that as partners the fisherfolk would have access to all information that development experts have.
- it implies that the relationship between the people and development practitioners becomes a client-consultant one rather than a receiver-giver one. For this to actually work it would require that the two partners be at least on par — which in turn implies empowering the community through organization and mobilization and the consequent sociopolitical structural change.
- It implies that communication patterns between partners will move away from consultation and towards negotiation.
- It implies that decision making in a real sense will be shared (if not totally expropriated) by the community of fisherfolk.
- It implies that successful development with and through participation may eliminate the role of and need for the development practitioners who set the process in motion.
- Most importantly, it implies that enabling development is a task undertaken with a sense of solidarity by benevolent leaders in a convivial manner,

Many ifs and buts and a lot of questions about an approach that seems to have much in its favour! So why does it not get done more often? Some of the reasons can be traced to the socio-political implications above and some to the lack of strategies, methods and techniques that a group could use in working with a community.

While appreciating that the first of these constraints requires attitudinal and belief changes among agencies, the Bay of Bengal Programme has set out to learn about the latter in the hope that sharing such knowledge may encourage more agencies to become participatory in their approach; this may inspire some of the changes in attitude and belief that in turn will justify more participation’.

Kanyakumari in India's extreme south bears witness to a beautiful "sangam" (union) : the waters of the Bay of Bengal commingle with those of the Arabian sea. But for fishermen here, "sangam" connotes not harmony but defiance — against exploitation. The first "sangam" or union of fishermen was formed in Manakkudy in 1974. Today 23 of the 38 fishing villages in Kanyakumari district have sangams. "The sangams have put the fear of God into merchants and money-lenders", says a fisherman from Nagercoil; and the federation of sangams established in 1983 wields social clout and economic power. It aims at a "radical transformation in the life of Kanyakumari fishermen."

Bay of Bengal News met J Lucas 43, coordinator of the Kanyakumari District Fishermen's Sangam Federation, at its Nagercoil headquarters. Even as fishermen flitted in and out, and customers examined wares at the federation's fishing accessories shop, Lucas responded lucidly and eloquently to our questions. "The sangams have become a force", he said, "and are here to stay unless the fishermen fight among themselves".

Q: Could you briefly sketch the history of the sangams of Kanyakumari? What's your present strength?

A: I should begin with the Indo-Belgian Fisheries Project of 1968. Under this project, some 100 outboard motors were imported to motorize kattumarams in and around Muttom, Kanyakumari district. After four years, the project was considered a failure, because its priorities were wrong. The distribution of fish was controlled by moneylenders; it's they who benefited from the higher catches, not the fishermen. The Kottar Social Service Society through which the project was implemented, then said: Let's go to the people. A workers-are-owners concept was introduced. The first sangam was started in 1974, and more sangams started. They responded to the people's priorities, which were freedom from

economic bondage, better price for their catch, credit inputs, and moral support in case of conflict with other interests: This really is the strength of the sangams. Initially, we had to persuade villages to start sangams. Now they take the initiative and come to us.

"We Have Refused The Sangams of"

The 'sangams' of Kanyakumari have tried hard to free fishermen from economic bondage, better price for their catch, timely support, so long ... we can only get stronger" says a spokesman.

Fishermen get the catch auctioned



Dawn breaks at Kanyakumari — craft return with catch.



and to be Bullied? of Kanyakumari

meet the fisherfolk's priority needs — freedom from loans, moral support during crises. "Having survived sman of the sangams.

Till 1983, all the sangams faced their problems individually. But many fishermen said that the sangams should come together, and evolve a common strategy to work effectively for fishermen. Discussions were initiated, and a federation was formed in 1983. This was the result of collective thinking,

planning and discussion. Now the federation has 23 sangam members.

Development of the fisherman is our basic thrust. This must be accompanied by fishermen's active participation, cooperation and involvement at all levels of decision-making, and the removal of barriers that oppress the weak.

Q : In material terms, one of your main aims is to free fishermen from middlemen. How successful have you been? And what's your turnover like?

A : Any fisherman must clear his debts before he joins a Sangam. We help him do so with a loan. He is then free from "bondage" to a middleman. Our 23 sangams cover 2,000 families. They sell

their catch through the sangams, not through moneylenders — and get a better price.

In 1985 total fish production of sangam members was Rs. 16 million. (Rs. 7 million for export varieties like prawns, cuttle fish and lobster, Rs. 9 million for other varieties).

Continuous credit flow has helped us improve production. In 1985, sangam members received a total of Rs. 2.1 million from various banks — Rs. 1.1 million to acquire kattumarams and nets, Rs. 1 million to buy outboard motors and vallams.

Q : Can you explain the marketing and administrative mechanisms of the sangams?

A : Every sangam has two or more auctioneers who dispose of the members' catch (non-export varieties) at the beach. 5% of the catch value goes to the sangam (2% towards sangam expenses, 2% as service charges, 1/2% for the Federation administration, 1/2% as old age security fund), 10% goes towards bank loan repayment. For export varieties (prawn, cuttlefish, lobster), we sell directly to exporters!

We would like to get a better price for non-export varieties by transporting them by van to distant markets. We don't have the facilities yet.

(Continued on page 24)

ned through "sangams"



and *not* through middlemen as in the days of yore.



"Small is Successful": The FCDP, Quilon

"It is a workers' organization. We run it ourselves, we conduct many schemes."

Quilon, the quaint little cashew and prawn centre north of Trivandrum, is well-known in fisheries circles as the home of a strong voluntary organization, the FCDP (Fishermen's Community Development Programme). Started six years ago by the Salesian Fathers of the Catholic Church, with funds from CEBEMQ, a Dutch agency, the FCDP is at once a community centre, a school and a welfare centre. A Fishermen's Welfare Society (FWS) started by FCDP carries out several economic activities — fish auctions at the beach, loans, and boat production. In a system that pits strong forces against him, the Quilon fishermen finds in the FCDP a doughty supporter.

The FCDP's "constituency" covers some 2,000 active fishermen who live in five villages — Thangaserry, Pallithottam, Port Quilon, Moothakara, Vaddy — that dot a 3% km coastline. Of these 2,000 fishermen 1,500 benefit from FCDP programmes. Their sense of belonging is strong. They frequently meet at the FCDP's 'community hall', squatting on the sand under a conical palm leaf-and-bamboo canopy, to talk coolly about hot issues — engine failure, loan repayment problems, dwindling catches etc. Usually present at such discussions is Fr. John Sebastian, 40, Chairman of the FCDP. Some glimpses into the work of the FCDP and its FWS

Fish marketing centres : Each of the five villages has a fish marketing centre (FMC). Like the societies in Trivandrum and Kanyakumari, the FMCs auction catch at the shore, dispensing with usurious middlemen. Turnover at the five centres together exceeds a crore of rupees a year (about \$1 million). After deductions; for loan repayment, savings etc., the fisherman is left with 60 per cent of his catch revenue.

Bank loans guaranteed by the FWS, for the purchase of boats, nets or engines, Loans are also given to aspiring members to free them from economic bondage to their creditors. Loans so far exceed Rs. 7 million.

Plywood vallam (left), built with SIFFS assistance at the FCDP boatyard, and the traditional vallam.



A boatyard in Pallithottam village, where 26 ft plywood vallams designed by the ITDG (Intermediate Technology Development Group) are fabricated with technical assistance from SIFFS. The boatyard has made more than 50 boats so far. (There are about 350 vallams in the five fishing villages, more than two-thirds of which are motorized).

Non-formal education : Classes are conducted for about 90 students who belong to six groups. The FCDP developed its own material, in collaboration with a Trivandrum school; educated fisherfolk from the community serve as teachers. (There is a regular primary school in one of the villages, but education is rarely pursued beyond this level).

Women's activities : A women's body set up by FCDP (known as the Teeradesa Mahila Sanghatana) has 400 members. They get bank loans for fish vending and net-making. They hold informal meetings on issues like fisheries resource depletion, declining standards of health etc.

Perhaps more than anything else, the FCDP promotes a critical awareness among fisherfolk and a sense of solidarity. The awareness is best exemplified by the comments of fisherfolk in response to questions.

On the FCDP : "It is a workers' organization. We run it ourselves, we run many schemes. Cooperation is more, mistrust is less. But it is not always so".

Qualities of a leader of the fishing community : "He should be strong in fishing skills, should command a standing in the community, should be known for a spirit of conciliation."

On why catches are falling : "It is because of trawlers. They disturb the ecology. Formerly we used to catch shrimp, nowadays we don't find them. Lower catches are not because there are too many vallams or too many fishermen. You must realize that the number of vallams has remained steady over the years. And the size of the families has in fact come down. This elderly neighbour of mine has 12 children, I have only two".

Main problems : "The high excise duty on outboard motors, and the trawlers that raid inshore waters."

On their future : "It is in the sea. What happens there will determine our future".



FCDP activities cover fisherfolk families like this (above). Fr. John Sebastian (below), FCDP Chairman, talks to fishermen at the "community hall".



Fishery Resources Research in the Bay of Bengal: A Factsheet on Burma



As in most other countries, numerous demersal surveys have been carried out in Burma until very recently, but there have been few pelagic surveys. There are indications of development potential not only for demersal resources but also for the pelagics. More active pelagic surveys are urgently needed, as the few surveys conducted so far have not been very successful.

The fisheries department is trying to improve the status of marine fisheries statistics. It is expected that a statistics unit will be established and personnel trained. Research activities are conducted mainly with commercial vessels; biological research activities, though existing, are limited. Universities appear to concentrate on oceanographic activities. More trained fisheries research personnel are also needed.

Note : The data for this factsheet has been compiled from available information.

Table 1 : Resources Surveys and Exploratory Fishing

PERIOD	VESSEL	TYPE OF SURVEY	LIMITATION	REMARKS
SEPT - NOV 1979	Dr.Fridtjof Nansen	Acoustics, trawling — bottom and pelagic	20 m	Large quantities of pelagic fish but catches low. Limited coverage
1981 - 1982	Linshu	Shrimp, trawling	Limited to non-fishing areas	Shallow waters Arakan coast. Interference with small-scale fisheries.
1981 - 1983	Various PPFC vessels as detailed below	Fish and shrimp trawling; pelagic fish purse seining	Trawlable bottom	First countrywide bottom trawl survey, P. seining surveys no success. Reports completed.
1983	Anton Bruun	Trawl	Small number of hauls, report superficial	Trawl operation between 15 and 549 m depth.
OCT- - DEC 1971	Jewadi	Trawl		
SEP 1977	PPFC No. 501	Trawl		
MAR 1981 - OCT 1982	Rangoon 011	Joint trawl survey with R/V Linshu		
DEC 1981	No. 443	Trawl		
NOV - DEC 1981	No. 525	Trawl		
APR - MAY 1982	No. 525	Trawl		Shelf + slope
APR 1982	No. 443	Trawl shrimp		
JAN 1982	No. 443	Trawl shrimp		

PERIOD	VESSEL	TYPE OF SURVEY	LIMITATIONS	REMARKS
FEB 1982	No. 443	Trawl		
FEB - MAR 1982	No. 525	Trawl		Shelf + slope
NOV - DEC 1982	No. 525	Trawl		Shelf + slope
MAR 1982	No. 443	Trawl shrimp		
MAY - JUNE 1982	No. 443	Trawl shrimp		
JULY 1982	No. 443	Trawl shrimp		
MAY 1982	No. 443	Trawl		
NOV - DEC 1981	No. 421	Purse seine		
JUNE 1982	No. 421	Purse seine	pelagic	
SEP - OCT 1982	No. 421	Purse seine		
JAN 1982	No. 525	Trawl		
AUGUST 1982	No. 525	Trawl		Shelf
MAY - JUNE 1983	No. 525	Trawl		Shelf + slope
JULY 1983	No. 525	Trawl		Shelf + slope

Table 2 : Statistics : Review of Present System for Marine Fisheries

Institute	System used	Collection of basic data	Processing Place and Method	Species	Effort/Data	Publication/Remarks
Department of Fisheries	Addition of a fixed % to a base figure established in the early seventies	None yet — in the process of establishing a division	PPFC log books being processed	Not reported	No effort data; 57 gear categories exist in inland and marine fisheries	"Notes on fisheries in Burma". Annual bulletin published by Ministry of Agriculture and Forests.
PPFC and Cooperatives, Ministry of Agriculture		Purchase at processing plants			No. of trammel nets sold to fishermen Adjusted CPUE data for trawlers	

Table 3': Marine Fishery Resources Research Facilities

National Institute	Location	Type of Research	Biologists	Gear	Acoustics	Coverage of key areas	Research vessels	Remarks/ Publication
Sea Fisheries Survey and Research Unit of the Peoples Pearl & Fisheries Corporation (SFSRU) of PPFC	Rangoon (main) substation at Sandoway	Surveys, catch rates of PPFC fleet investigations on Hilsa, mackerels shrimps, etc. are ongoing	16	1	1	Resource Surveys Planned : Fishery statistics Sampling of commercially important fish species	Commercial vessels of various types of PPFC R/V Linshu	FAO Project and ODA shrimp project terminated
University	Moulmein	Plankton Oceanography Taxonomy Holothurians		?	?	Stock assessment		UNESCO support projects

Shrimp culture in India — what is happening on the east coast?

by D. Reyntjens

Several government institutions in India are engaged in shrimp culture research. This article takes a look at their roles and *responsibilities*, and at some recent developments, particularly on the east coast.

Declining catch rates at sea, high world prices for harvested products, vast areas of land and backwaters lying unused, a huge and often impoverished population among coastal communities : all these factors attract the attention of community workers, scientists, administrators, politicians, national and international organizations to the potential, real or supposed, of brackishwater culture. The public at large and donor countries in the case of bilateral and multilateral agreements view aquaculture favourably. No wonder a host of institutes, development organizations, fisheries or agriculture administrations, consultancy bureaus and private individuals want a share in this work which is both rewarding (for one's image as well as one's finances) and interesting. And

India is no exception, being a big country which faces the challenge of improving substantially the living standards of the greater part of, its population, often by providing alternative or new occupations. So let us look at what is happening, especially along the east coast bordering the Bay of Bengal.

Aquaculture in India is considered a form of fishery. However, aquaculture entails animal husbandry and crop tending — in a way more similar to agriculture than capture fisheries. The central and state governments share the responsibility for fisheries development. The Central Government is responsible for fisheries research and for bilateral and multilateral contacts. It assists the State Governments to formulate fisheries policies and finance

development projects fully or partially through the so-called centrally sponsored schemes. Responsibility for fisheries comes under the Ministry of Agriculture. However, the Ministry of Commerce is also actively involved in the development of coastal aquaculture through the Marine Products Export Development Authority (MPEDA).

At the state level, a cabinet minister is in charge of fisheries. He is assisted by the head of a department, a secretary to the government. The Directorate of Fisheries is responsible for the development of fisheries and for implementation of the state fisheries policy.

Traditional brackishwater culture

On the east coast of India the **only** areas with a tradition of brackishwater culture are the coastal districts of West Bengal and to a, lesser degree, the district of North Orissa. Here, paddy-cum-fish culture is an age old practice.

In the dry season, the soil and the water fast become too saline for paddy cultivation. The land can then be used only for brackishwater culture. Traditionally, land enclosed by bunds is allowed to be flooded by the tide. The seeds of prawns and fish which thus enter the ponds, or bheris as they are locally known, are left to grow till they are harvested before the monsoon sets in. The heavy rain washes out the salt from the top layer of the soil and floods the fields which can now be made ready for a new paddy cultivation cycle. Such a system evolved in response to local and environmental conditions (marginal soils unfit for year round agriculture but suitable for bund construction, adequate tidal range, naturally occurring seeds of suitable species for culture etc.,) as well as to social and cultural factors (rice and fish being the

Stocking of a shrimp pond in Orissa



staple food of the people of West Bengal). Yields, however, were poor by modern standards and variable. In particular the aquaculture part of this crop alternation, to be viable, had to be conducted over large areas covering several paddy fields. The current practice thereon is for small farmers-landowners (84% own less than 2 ha) to lease their land to someone else to undertake the fish and prawn culture.

Brackishwater culture research

Several institutions in India conduct research in brackishwater culture. For instance, the Central Inland Fisheries Research Institute (CIFRI) with headquarters at Barrackpore, West Bengal, has done promising work on the improvement of the traditional paddy-cum-fish culture, routinely achieving yields in excess of one tonne of fish (including 40% prawns) and three tonnes of paddy.

Similarly the CMFRI (Central Marine Fisheries Research Institute) showed that the yield of the "pokkali" fields around the backwaters of Cochin (South West Coast) could be increased substantially by adopting improved management practices such as screening the inlet water and selective stocking. Both institutes were set up under Indian Council for Agricultural Research (ICAR) to conduct short-term and long-term multidisciplinary research on the capture and culture fisheries. Responsibility for brackishwater research is now to be transferred to a brackishwater fisheries research institute to be established. The CIFE (Central Institute for Fisheries Education), Bombay, also an ICAR institute, trains fisheries officers in service in various parts of the country, and equips them with the knowledge necessary to implement fisheries projects including aquaculture.

Several more institutions at the central and state levels conduct research on aquaculture, usually with greater emphasis on actual adaptation and field testing of known technologies. They include the Central Institute of Coastal Engineering for Fisheries (CICEF) and various state pilot farms and technological stations depending on their respective directorates of fisheries. The CICEF is being strengthened under a UNDP/FAO project which will provide foreign expertise in aquaculture engineering.

Project pilot farms will be constructed to test design and technologies under different conditions along the Indian coastline. Hatcheries are also to be constructed. In fact, seed and feed supply is a bottleneck for the development of prawn farming.

Unfortunately most experimental hatcheries are set up on cheap or free government-owned land without regard to technically sound site selection criteria; as a result they are inoperative most of the year. Their significance in the development of prawn farming remains marginal.

MPEDA & commercial prawn farming

The central institution most concerned with the actual development of commercial prawn farming is the MPEDA (Marine Products Export Development Authority). It comes under the administrative control of the Commerce Ministry. It is no surprise that MPEDA has taken up an active role in promoting prawn culture since exports of this product account for 80% of the total value of the marine products exported from India. The prawn farming unit of MPEDA is headed by a joint director and there are plans to have regional and sub-regional centres in all the coastal states. The centres function as extension offices and provide the farmer and/or

the prospective entrepreneur with a wide range of services — from site survey, engineering and feasibility studies to technical advice. MPEDA also tries to organize markets for several important inputs and has subsidy schemes for new prawn farms, seed banks and hatcheries. It is now contracting out the construction of hatcheries to foreign and local enterprises.

Problems

The development of brackishwater culture, now synonymous with prawn culture, depends on the local availability of expertise of suitable areas and of other inputs, as well as an institutional framework reflecting a clear policy. This may pose a problem of equity. The land found suitable for the development of brackishwater culture is limited. Even if small areas are allocated to each beneficiary of a development programme there will not be enough for all. Also, the viability of those small farms remains dubious because their managers lack the skills and the capital for a more intensive type of operation. And these skills cannot be acquired overnight. The development by the private sector is now limited to areas that are privately owned because of the absence of a clear land use policy and of leasing

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At an MPEDA research farm, mahua oil cake is applied to eliminate predators.



glimpses into BOBP projects

New fisheries management project in Thailand

Readers of Bay of Bengal News are familiar with the BOBP supported aquaculture demonstration in South Thailand.

Following the success of this project, a new five-year project, "Management of fisheries in Ranong province" has been formulated. It is to be run by the Thai Department of Fisheries with technical and financial help from BOBP. The aim of this five-year project is to improve the standard of living in the 69 fishing villages of Ranong province. The project has two main components :

- establishment of a fishery extension system for Ranong province.

- development and demonstration of technical improvements for capture fisheries, aquaculture and processing.

It was agreed during project discussions that the project would lay high stress on a participatory approach; for such an approach, a well functioning extension system with trained field workers was essential.

How should such a system get going? There are several government departments in Ranong province which have field extension workers. The Department of Fisheries has such workers down to the district level; others, like the Community

Development Department and the Agriculture Extension Department, have workers even at the tambol level. It was proposed that the Department of Fisheries seek the co-operation of other departments at the tambol level rather than create an extension system of its own. The Community Development Department was regarded as one with a key role, since the project seeks to improve the standard of living of fisherfolk.

As part of the preparation for the project, two workshops — one on extension, another on credit — were held in the first week of November 1986 at Ranong.

The Extension Workshop (November 4-5) aimed at bringing together all the departments connected with community development to discuss possible project co-operation. The workshop was attended by 54 representatives from the DOF (central, district and provincial level); the offices of public health, agriculture, accelerated rural development programme, non-formal education, primary education and community development (all at the provincial level); the Fish Marketing Organization;

Shrimp culture in India — what is happening on the east coast?

(Continued from page 19)

procedures of public-held land for aquaculture.

Nevertheless, something unusual is taking place in Orissa, mainly around the Chilka lake. The culture system depends totally on rainfall and soil salinity. Water is not introduced from any other source and since the ponds dry up part of the year, they are totally free from predators and competitors. The ponds are small, 0.2 to 1 ha, but the revenue they yield represents a substantial increase in cash income of the participants in the various development programmes for whom the Chilka lake area is reserved.

In some instances the estimation of available land for development into ponds seems far too optimistic. The construction and maintenance of bunds in soils which do not have proper cohesion and tend to be highly permeable, are most probably

uneconomical. Other problems are high water temperature and in the dry season, hypersaline water. Tiger prawn, by far the most important species cultured in Asia, need estuarine conditions to grow to market size. Such an environment is hard to come by in some parts of the country, particularly along the south east coast. However, since breeding requires unpolluted sea water free of fresh water influence, some sites not suitable for farming might be ideal for hatcheries. Indeed, as the breeding and growout phases require different environments their geographical separation is logical.

A word of caution is called for here. The attractive export prices and the need of tropical developing countries for foreign exchange has generated a prawn farming race in which the countries of South Asia are late starters. Development agencies and banks have allotted enough funds to intensify

culture practices and to expand into new areas. It is not certain whether this expansion of prawn production and the devastation of mangrove forests are economically sound. Social and environmental costs might be too high. (When world prices eventually come down, some more intensive farms with high production costs will probably become uncompetitive.)

On a recent trip to Satkhira in Bangladesh, the BOBP saw how prices had dropped dramatically because local storehouses were full and processors would not accept production. They ascribed this to the fact that Japanese importers had 'gone in for cheaper Taiwanese prawns. (This could serve as a warning to the producers of cultured tiger prawn who tend to rely exclusively on the Japanese market which may be nearing saturation for this species.) However, with an yet unexploited internal market for high-quality seafoods, a future prawn culture industry in India probably need not be exclusively export-oriented to be viable.

and the Institute of Social Studies, Chulalongkorn University, Bangkok.

The workshop discussions led to a proposal that two extension staffing models be tried : one with the community development workers as field level extension officers, the other with "fisheries contact agents" hired by the Department of Fisheries. It was stressed that the project set-up in Ranong (the project team) should be autonomous and free from red tape.

During pre-project discussions, the question of credit was discussed in depth. To get an idea of how much the fisherfolk are in debt, what the loans are for and where they come from, the Department of Fisheries conducted a mini-survey in August and prepared a report for the credit workshop (November 6-7). The survey showed that the average household had a debt of B 4300 (US \$180) while the average net income was B 26,000 (US \$ 1000) and the average value of assets B 30,000 (US \$ 1250). (It should be noted that these are average figures; the range between the highest and the lowest figures is wide).

55 persons participated in the credit workshop. Besides those who took part in the extension workshop, there were representatives of fisherfolk (a fisherman, a fisherwoman, a village chief, a village teacher, a tambol chief and a tambol level community development worker) plus representatives of commercial banks and credit institutions.

The workshop discussed the outcome of the fisherfolk survey. Practically all fisherfolk loans are from traditional, non-institutional sources : middlemen, traders, relatives etc. Often, what starts as an institutional (bank) loan passes through a chain of lenders/loanees and finally reaches the fisherman through a small-scale middleman, trader or village teacher.

Resource depletion makes it increasingly difficult for the fisherfolk to repay loans, and defaults are common. One of the participants said that all credit should be accompanied by technical advice; he and his fellow fishermen are up against resource depletion and stiff competition from large-scale fisheries. "Investments in new craft, engines and gear do not always pay off and we find it difficult to repay loans."

Workshop participants agreed on the need for credit on realistic terms for fisherfolk. Credit should be only for investment with a fair chance of profitability. Costs and earnings studies are needed as a basis for approving applications.

It was also suggested that credit, perhaps on a long-term basis, should be directed towards new income opportunities such as different forms of aquaculture, rather than on investments in the existing fisheries. Representatives of commercial banks said they were

ready to participate in a future credit scheme, provided there was co-operation from fisherfolk and support from the government. Costs and earnings studies were also a must.

The outcome of the workshops was a proposal for an extension system and ideas and guidelines for a credit system. These have been put together along with proposals for technical activities for approval by DOF and BOBP and subsequent implementation from January 1987.

— A.A.

BOBP beachcraft : progress of commercial production

As a follow up to BOBPs technical and commercial evaluation of beachlanding craft, the Government of India included the introduction of such craft in its 7th 5-year plan. A few hundred beachlanding craft were to be introduced in the states of Orissa, Andhra Pradesh, Tamil Nadu and the union territory of Pondicherry with funds loaned by NCDC (National Co-operative Development Corporation) to the respective fisheries departments. Under this scheme the boats are to be issued to successful fishermen co-operative societies at subsidy.

So far 38 fibreglass boats of two types (IND 20 and IND 25) — 14 for Orissa, 15 for Andhra Pradesh, 4 for Pondicherry and 5 for Tamil Nadu — have been built and delivered under the NCDC scheme. Besides these, 10

more have been built under other schemes. The IND 20 is a 8.5 m FRP boat fully decked with a 8 hp diesel engine, the IND 25 is a open 6.7 m FRP boat, also with a 8 hp diesel engine. BOBP was requested to give existing and new boatyards based in the three states technical assistance and guidance in constructing these craft.

Two boatyards in Balasore and Bhubaneswar, Orissa, one in Andhra Pradesh at Kakinada and one in Pondicherry were assigned to build the first lot of boats. Of these, the boatyard at Kakinada had no experience in FRP boat construction. and the one at Bhubaneswar had no boatbuilding experience at all.

The project staff trained workers in all the boatyards through continuous

BOBP beachcraft /ND-20B and IND-25 under construction at the Kakinada boatyard of the Andhra Pradesh Fisheries Corporation.



supervision of the first boat. The hull moulds for the two boat types, made earlier during the project's development phase, were used to mould the first hulls; subsequent production moulds were made from them. Besides training in FRP boat construction, supervision and guidance was also provided in the assembly of the special pivoting engine box. Ad hoc advice on production planning and inventory was also given from time to time. Sails for the boats were supplied by BOBP at cost. The project plans to hold a 'sail making' training course in the near future.

Several teething problems were encountered in ensuring a technically acceptable product. The main one was to impress upon the worker the importance of adhering to specifications. One should not blame the boatyards entirely, as specifications had to be modified from time to time on the basis of local availability of material and further experience in continuing prototype operations.

Technical assistance in construction is still ongoing but to a much lesser degree. Apart from assistance in the development of a deck mould for the IND 20, it is now confined to undertaking periodic inspections jointly with staff from the fisheries departments.

Production of more boats under the NCDC scheme is in progress at the boatyards in Kakinada and Pondicherry. One hopes that the experience gained by these boatyards will stand them in good stead while constructing not only more beachlanding boats but other types too.

— R.K.

Pen culture with *P. monodon* at Killai

BOBP undertook trials in pen culture of prawns in 1982 at Killai in Tamil Nadu. Articles in this newsletter and several working papers have documented our progress down an often rocky road. While the rearing of fish in pens is practised in several Asian countries, prawn culture in this type of enclosure was something quite new and as expected with any new aquaculture technology, considerable time has been required to perfect it. The engineering and design aspects of pen culture have been worked out and we now know the best combination of materials. Practical methods of nursery rearing, grow out, pest control and harvesting have been developed. Local fishermen have been trained in the technology, and major social problems inhibiting the extension of pen culture in local backwaters have been identified and documented, as have the basic components of investment and operating costs.

But we have not yet achieved profitability, although we feel close enough to this objective that trials will be continued through 1987. What has hindered the achievement of profitability? While the high cost of netwall materials was one element (since rectified by the use of HDPE instead of nylon), the principal impediment relates to the choice of species. There were sound reasons for choosing *Penaeus indicus*, the Indian white prawn.

Wild fry are abundant in the Killai backwaters, the species can be stocked

at high density, survives well and has fast growth in high salinity waters such as found most of the year in the backwaters of Tamil Nadu. However, the growth rate declines drastically after about 60 days when the shrimp have reached 80 to 90 counts/kg. And herein lie the problems. Although an average of 760 kg. of shrimp per ha per year has been produced in the pens, 80 to 90 count shrimp are simply too low priced to make the operation profitable. Environmental constraints and seed availability dictate only two crops per year, which fatally limits the output.

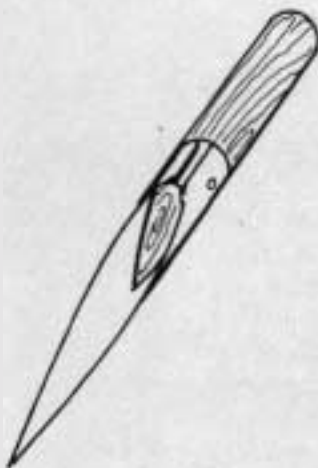
The only species of prawn available on the east coast of India which has the requisite high growth rate and good conversion of feed to shrimp flesh is the tiger prawn, *P. monodon*. This species is rare along the Tamil Nadu coast, but has always appeared sporadically in the pens, having entered from the surrounding backwaters or stocked in very small numbers along with *P. indicus*.

We undertook preliminary trials during the last half of this year using hatchery produced post larvae, and worked out the basic techniques of nursery rearing of the tiger prawn, but due to the weak southwest monsoon this year, the salinity in the backwaters remained high and the growth and survival of juveniles in nursery happas was not up to expectations. Nevertheless, several pens were stocked, and partial harvesting began after about 70 days, yielding prawns with an average weight

Rope-splicing tool for fishermen

At the BOBP's suggestion, a useful rope-splicing tool for fishermen is being fabricated locally in Matara, Sri Lanka, and is being sold in fishing gear stores in Matara, Colombo and Negombo. Its handle is made of wood, the spike of stainless steel. The figures show how it is used.

Mr. G. Pajot, Senior Fishing Technologist, says that a simple and useful tool like this ought to be locally fabricated and made available easily to fishermen everywhere in the Bay of Bengal region.



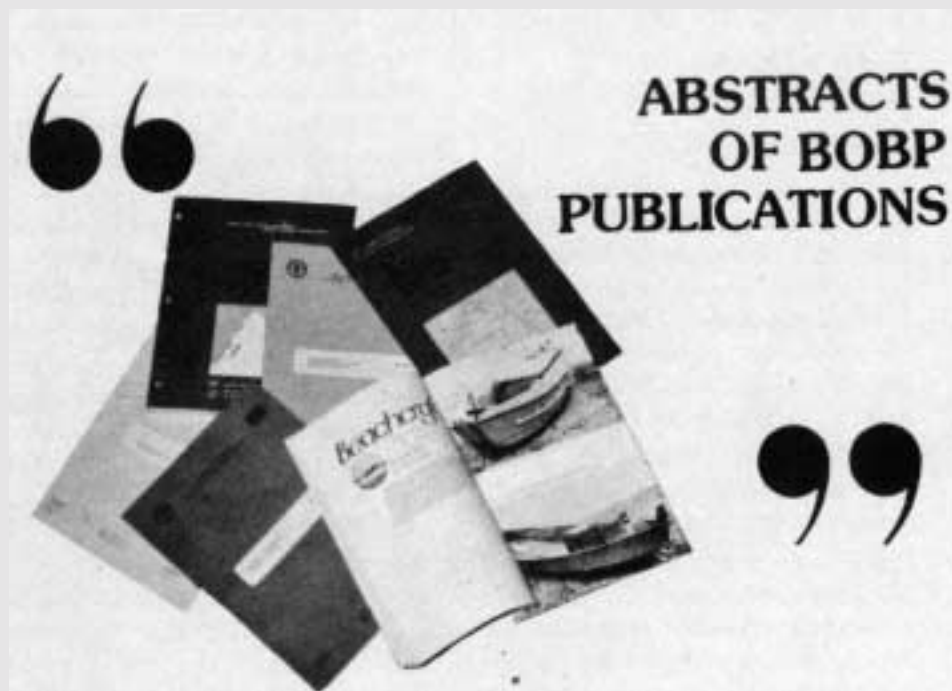
of 32 g. This growth occurred in spite of consistent high salinity in the backwaters.

The results have encouraged us to proceed and we will conduct two culture cycles based on hatchery-produced post-larvae during 1987. Concurrently, we will try to develop a more efficient feed than has been used in past trials. The availability of hatchery produced post-larvae on a year round basis will enable us to employ periodic harvesting-restocking. If we can achieve the same biomass of tiger prawns as of white shrimp, but of 30 rather than 80 count prawns, the system will become very profitable and can then be extended and developed.

Although it will be possible to stock the pens with wild post-larvae shipped from West Bengal, Orissa, or the northern part of Andhra Pradesh, we feel success will really depend upon hatchery production of seed. Until recently, most hatcheries in India could not produce *P. monodon* post larvae with the kind of consistency required by commercial operators. However, Hindustan Lever has overcome its initial problems and is now successfully producing this species on a routine basis in their hatchery just south of Madras. Since Tamil Nadu has ideal conditions for a successful prawn hatchery, we anticipate the supply situation will improve as the demand for prawn seed increases. The state department of fisheries is constructing a hatchery on the open coast near Madras and this should be another dependable source of seed. On the minus side, the proper care of hatchery-produced post larvae will complicate the process of technology transfer to the fishermen. — C.A.

BOBP papers on non-formal education

Following persistent demand, the two BOBP papers on non-formal adult education (BOBP/MAG/1 "Trainers' Manual" and BOBP/MAG/2, "Animators' Guide") have been reprinted, and are now available at cost (Rs. 60/copy or Rs. 120/set for readers in India, \$ 10/copy or \$ 20/set for readers outside India.) Please send us a draft or cheque in favour of FAO TF IMPREST ACCOUNT when you order.



Published here are abstracts of BOBP technical papers out recently :

BOBP/REP/34 : The Coastal Set Bagnet Fishery of Bangladesh — Fishing Trials and Investigations. S E Akerman. Madras, India, November, 7 1986.

This paper discusses the findings of fishing experiments performed over six seasons (1980/86) to improve the economics of set bagnets, the second most important traditional fishing gear of Bangladesh after gillnets. The project tried to reduce costs by using cheaper materials and to increase productivity by employing nets of larger size and new designs. The trials established that PE twine, cheaper than nylon, is suitable for use in set bagnets. Two factories have now been set up to produce PE twine. It was also found that the dol net used in India is not suitable for Bangladesh.

BOBP/WP/48 : Fishing Trials with High-Opening Bottom Trawls from Chandipur, Orissa, India. G Pajot and B B Mohapatra. Madras, India, November, 1986.

This paper describes the findings of fishing trials with one-boat bottom trawls conducted from Chandipur, Balasore district Orissa, during 1984/85. Trials were conducted along commercial lines by employing private trawlers. The 65 days of trials clearly demonstrated the superiority of the high-opening bottom trawl over the conventional bottom shrimp trawl. They also demonstrated that small

meshes — particularly in the cod end — are not essential for high catches.

The paper makes the point that better trawlers of modified design would facilitate longer fishing trips, help catch resources further out, and perhaps reduce fishing pressure in inshore areas. The paper also recommends training for fishermen, net-makers and officials.

BOBP/WP/50 : Trials with Manual/y Operated Net Machine in Bangladesh. B.C. Gillgren. Madras, India, November 1986.

In an effort to supplement the income of fisherwomen in Bangladesh, the BOBP tried out a manually operated net-making machine of Japanese design modified by a Bombay firm. The conclusion was that though the machine performs fairly well, its potential is limited because a number of fully automatic industrial machines which can turn out low-cost nets at high speed have been set up in the region. BOBP/MIS/4 : Motorization of Dinghy Boats in Kasafal, Orissa. S. Johansen and O Culbrandsen. Madras, India, November 1986.

This paper describes an attempt to motorize the Orissa Dinghy commonly used in Balasore district. Several technical problems were encountered and three different modes of power transmission were tested. The performance of motorized boats in commercial fishing trials was compared with that of non-motorized boats.

The Sangams of Kanyakumari

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We are careful about efficient sangam administration. Every sangam has an office and fish storage facilities. Some have phones. The 23 sangams engage 30 accountants and 57 auctioneers. At the Federation we have a staff of 13 including a watchman. The Federation holds a "general body" meeting of all sangams every three months.

Q : Have merchants taken kindly to the loss of markets and to your growing power?

A : They have resorted to threats, intimidation, even violence on occasion. Initially local merchants refused to buy fish from the sangams. Another strategy was to buy from us and delay payment. Sangam members then prevented fish from leaving the merchants' godowns.

In 1982, the accountant of Kodiminai village was attacked and the sangam office ransacked. In July 1983, there was an open fight between merchants and sangam members. One merchant

died, and the sangam fought a court case for two years — the judgement has gone in our favour.

Physical conflicts don't erupt everyday, but there's a tense adversary relationship all the time.

Q : What are the other activities of the federation?

A : We started to market fishing equipment last year. Traders charge exorbitant prices for nets, ropes and twine, and prices change every day. During the prawn season, the prices of nets go up by Rs. 100. . . . Our main idea in selling fishing accessories is not to make a profit but to control an unpredictable market. . .

We buy nets from Bombay, Madras, Pondicherry; twine from companies like Shri Ram Fibres and Garware Nylon. Between June and October 1986, the revenue through sale of fishing gear equipment was Rs. 1.5 million.

There are also welfare activities. If a sangam member dies, his family is paid Rs. 2,000. The money is raised from members, the Federation also makes a donation. We propose to increase this amount to Rs. 4,000.



Brisk business at the sangam federation's fishing gear shop in Nagercoil.

We plan to start a scheme for children's education, and we expect the members to contribute to this.

We have organized several seminars. We get officials, teachers and action groups to talk to the fishermen.

Q : Are you optimistic about the future of *your* movement?

A : Very much so. We have refused to be bullied; that's how we survived. Having survived so long, and having learnt and struggled together we have developed a sense of solidarity. We can only get stronger. — S.R.M.

After the sangams — sunny smiles reflect the fisherfolk community's upbeat mood.

