

Report of the 21st Meeting of the Advisory Committee



INTEGRATED COASTAL FISHERIES MANAGEMENT

REPORT OF THE TWENTY-FIRST MEETING
OF THE ADVISORY COMMITTEE

12-13 February, 1997
Bangkok, Thailand

BAY OF BENGAL PROGRAMME
Madras, India
1997

This document records the recommendations of the 21st Meeting of the Advisory Committee of the Bay of Bengal Programme for Coastal Fisheries Management (BOBP). The meeting was held 12-13 February, 1997 in Bangkok, Thailand.

The document also contains the annual reports of the projects that comprise the BOBP. These reports summarize the objectives of the projects and their current status; the work performed and the achievements during 1996, an evaluation of progress, and workplans for 1997.

The Advisory Committee is composed of member-countries, agencies funding BOBP projects, and the FAO. The Committee meets once a year by rotation in member-countries.

The Bay of Bengal Programme (BOBP) is a multi-agency regional fisheries programme that covers seven countries around the Bay of Bengal - Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka, Thailand. The Programme plays a catalytic and consultative role in developing coastal fisheries management in the Bay of Bengal, thereby helping improve the conditions of small-scale fisherfolk in member countries.

The BOBP is sponsored by the Governments of Denmark and Japan. The executing agency is the FAO (Food and Agriculture Organization of the United Nations).

June 1997

CONTENTS

Report of the 21St Meeting of the Advisory Committee	I
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APPENDICES

A.	List of Participants	5
B.	Inaugural address by Mr Soetatwo Hadiwigeno, FAO, Asst. Director-General for Asia and the Pacific, Bangkok.	9
C.	Agenda	12
D.	List of Documents	13
E.	State of the Programme 1996	14
F.	Annual Report 1996 and Workplan 1997: Coastal Fisheries Management in the Bay of Bengal (GCP/RAS/15-/DEN and 151/JPN) and Information Service (GCP/RAS/117/MUL)	26
G.	Annual Report 1996 -- Post-Harvest Fisheries Project (ODA-PHFP)	100
H.	Annual Report 1996 and Workplan 1997 Cleaner Fishery Harbours Project (IMO)	139
I.	Terms of Reference: Joint Evaluation Mission on BOBP Programme “Coastal Fisheries Management in the Bay of Bengal”	142
J.	BOBP’s role in facilitating improved coastal aquaculture management	149

**REPORT OF THE 21ST MEETING
OF THE ADVISORY COMMITTEE OF THE BAY OF BENGAL PROGRAMME
FOR COASTAL FISHERIES MANAGEMENT**

OPENING OF THE MEETING

1. The Advisory Committee of the Bay of Bengal Programme for Coastal Fisheries Management (BOBP) held its Twentyfirst Meeting on 12 - 13 February 1997, at FAO-RAPA, Bangkok, Thailand. A list of the participants is given in Appendix A.
2. The Meeting was formally inaugurated by Dr Soetatwo Hadiwigeno, Assistant Director-General and FAO Regional Representative for Asia and the Pacific.
3. The working session was opened on 12 February 1997 by the outgoing Chairman, Mr George Chong Chiaw Min, Head of Resources Management, Department of Fisheries, Malaysia.

ELECTION OF CHAIRMAN

4. The Advisory Committee unanimously elected Dr Y S Yadava, Development Commissioner (Fisheries), Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India, as its Chairman to hold office until the beginning of the next Meeting.

ADOPTION OF THE AGENDA

5. The Advisory Committee adopted the Agenda shown in Appendix C. The documents made available to the Committee are listed in Appendix D.

COASTAL FISHERIES MANAGEMENT (GCP/RAS/150/DEN & GCP/RAS/1S1/ JPN)

6. Fisheries management to be successful ideally needs to address the full cycle of activities from harvest to consumption in an integrated manner. However, the solutions to fisheries management problems may often lie outside of the fishery sector, such as in providing non-fishery income alternatives, promoting coastal aquaculture and environmental protection.
7. Policy-makers need to be made aware of the need for, benefits of and methods and approaches to fisheries management to enable and persuade them to guide and provide support to management efforts.

8. Given that coastal resources, particularly near-shore resources, are exploited close to if not beyond sustainable levels, an option for improving management of the fisheries worth considering is to wean away fishers through diversification of fisheries to tap un- and under-utilized species and through promotion of on-shore, non-fisheries income generating options.
9. Given the stagnation and decline in marine capture production, mariculture may help in increasing fish production and provide an eco-friendly alternative which would also reduce the pressure on coastal fisheries and protect coral reefs, provided the issues of wild capture of fingerlings and the environmental impacts of culture practices are addressed and rationally managed.
10. Representatives of NACA and SEAFDEC offered to cooperate and collaborate with BOBP and its Member Countries by providing technical assistance relating to improved management of coastal aquaculture and training, particularly to strengthen the extension capacity of fishery agencies.
11. Given the interactive nature of coastal activities, particularly fisheries and coastal aquaculture, there is need to assess environmental and social impacts of fisheries and aquaculture, which would then give direction to the development of more eco-friendly and rational management of coastal areas.
12. Fishery agencies in the region are facing constraints in trained human resources and find it difficult to cope with the needs of facilitating and enabling management. There is a need to strengthen the capacity of concerned agencies. In this connection, BOBP's involvement in the conduct of skill gaps analysis and training needs assessments in Member Countries is very relevant and important, to give direction to efforts to strengthen the capacities of fishery agencies in coastal fisheries management.
13. The variety of approaches and models of fisheries management being tested in pilot BOBP assisted exercises, if successful, could be extended and replicated with appropriate modifications to other parts of the Member Countries as well as to other countries, and efforts to document and share such learnings need to be taken.
14. In promoting and enabling community-based fisheries management there is a need to learn about management approaches, particularly user- and use-rights regimes and modalities, from successful examples such as in Japan.
15. In Sri Lanka there is also a need for technical assistance to enable development of technologies to breed and culture selected marine ornamental fish, to reduce the dependence of the sector on wild caught fish.
16. To facilitate national execution, and incorporation of government contributions to BOBP assisted activities into national/state budgets, BOBP workplans and budgets need to be developed well ahead of time to meet the procedural deadlines of different member countries. BOBP may wish to submit two-year indicative workplans and budgets to Advisory Committee Meetings, which would then give Member Countries sufficient lead time to meet procedural deadlines.

17. While the third phase of BOBP was approved to begin in May 1994, the Project became operational only in early 1995 with the recruitment of its international staff, and as such the five-year project duration should consider January 1995 as the *de facto* start of the project through December 1999.

18. Fisheries management is by its very nature a complex multi-disciplinary problem, the solutions of which require different sector inputs. The **BOBP**, given its limited staff complement and resource base, has to be necessarily limited to the mandate given to it by the member countries in order to do justice to the task. To address the needs of enabling and facilitating fisheries management in a more holistic frame, the BOBP may play a catalytic role to facilitate member countries to address needs beyond its immediate mandate, subject to the availability of staff-time and resources.

19. In order to strengthen BOBP and give it the capacity to address fisheries management and coastal aquaculture management needs of its members in a more comprehensive manner Member Countries may wish to modify suitably the mandate of BOBP and seek additional donor support to translate the larger mandate into action.

20. The 1997 workplans proposed for each member country and the region as a whole are agreed to in principle, and should be refined and finalized by the Project in consultation with their counterparts prior to implementation.

POST-HARVEST FISHERIES (ODA)

21. Appropriate measures need to be urgently taken to ensure the right of domestic consumers to fish and fish products free from harmful chemicals.

22. Due consideration should be given to the question of by-catch discards in the region and Member countries are encouraged to collect data on estimates of by-catch, species composition of by-catch and on the socio-economic aspects of landing and utilizing by-catch.

23. Post-harvest fisheries is an important part of fisheries management, and enables the maximum utilization of resources by making the most of what is caught or cultured.

24. To increase the impact of post-harvest fisheries interventions and to enable post-project sustainability there is a need for closer coordination between concerned agencies involved in the post-harvest sector.

25. The Government of India indicated its intention to extend support for post-harvest initiatives such as fish containers, etc., and is proposing scheme(s) within the framework of the ensuing Ninth Five Year Plan.

CLEANER FISHERY HARBOURS (IMO)

26. The 1997 workplan proposed for Maldives and Sri Lanka is agreed to in principle, and

should be refined, modified and finalized by the project in consultation with their counterparts prior to implementation.

OTHER MATTERS

27. There is a need for Member Countries to collectively address the increasing use of non-tariff trade barriers based on environmental and conservation issues such as the use of turtle excluder devices, and consider ways and means to consider the interests of countries and the environment in a more balanced manner.

28. The enforcement capacity of fisheries agencies needs to be strengthened to enable them to monitor and control illegal encroachment by fishers into national waters, and to enforce their fisheries regulations.

29. There is need for regional or sub-regional mechanisms to resolve problems resulting from fishers encroaching and drifting into other national waters which often result in distressing situations with considerable hardships to fishers, and are often difficult to solve as bilateral issues.

30. A lesser known benefit of a programme such as the BOBP is that by being a neutral party it is often able to facilitate the coming together and working of government agencies thus mobilizing concerted and integrated action.

31. The FAO Investment Centre-led mission, which is presently in the field to assist the Member Countries in the revision and finalization of GEF B Block proposal, informed the Committee of its terms of reference and the modalities of GEF proposal development. The mission sought the Committee's views on a number of critical issues, including priority transboundary problems in the region, and regional and national co-operation mechanisms on the environment.

NEXT MEETING

32. The Committee gratefully acknowledged the invitation of the Government of India to host the next meeting of the Advisory Committee in conjunction with the 10th Session of the IOFC/BOBC in New Delhi, subject to government clearance.

33. The Committee also gratefully acknowledged the invitation of the Government of Sri Lanka to host the subsequent meeting of the Advisory Committee in Sri Lanka, subject to government clearance.

ADOPTION OF REPORT

34. The report was adopted on 13 February 1997

Appendix A

LIST OF PARTICIPANTS

Bangladesh

Md. Harun-ur-Rashid
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 <i>ODA (UK)</i>	
Alan Hall	Snr Natural Resources Adviser SEADD, British Embassy, Bangkok
Duncan King	Project Field Manager Post-Harvest Fisheries Project Madras
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Observers

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Boston, USA

Secretariat

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RN Roy
Shirley Scurville (Ms)

Programme Coordinator
Snr Communication Adviser
Snr Admin. Assistant

Appendix B

Inaugural Address by Mr. Soetatwo Hadiwigeno

*(Assistant Director-General and Regional Representative
for Asia and the Pacific, FAO, Bangkok)*

Chairperson of the Advisory Committee of BOBP; distinguished, delegates and representatives from BOBP member countries, donor countries and agencies, international and regional organizations; Colleagues, Ladies and Gentlemen:

Good morning and welcome to the FAO Regional Office for Asia and the Pacific.

As some of you may be aware, I have just assumed my duties and responsibilities as the Assistant Director-General and Regional Representative of FAO for Asia and the Pacific. This august gathering therefore provides me with an excellent opportunity to meet and get to know you all better. On behalf of FAO and BOBP it is my honour and pleasure to welcome you all to the 21st Advisory Committee Meeting of the Bay of Bengal Programme. I am grateful that you have made a special effort to participate in this meeting.

You are gathered here on a very important mission--to review BOBP's work during the past year and discuss the work plan for the next. You will be reviewing and agreeing to BOBP's workplan for each member country, including the overall regional workplan. To better understand BOBP's work and give direction to its efforts there is need to look at the context within which its functions.

Last year, from 13 to 17 November 1996, the FAO convened the World Food Summit to elaborate a plan of action for food security -- access at all times to all people to the food required for a healthy and active life. Heads of States and governments, gathered in Rome, viewed with concern the high levels of hunger and malnutrition that still persist, and with dismay on the prospect that future progress may be slow and uneven. In this context, we should also recognize the key role of the fishery sector in the economy and for that matter we should give due and serious attention to this sector.

As you know, of the two main sources of fish production, marine capture fisheries have peaked. It will not be able to meet the rapidly increasing demand for fish. The other source, culture fisheries, is under environmental pressure. Fish, as a valuable and nutritious food, contributes to people's well-being both by increasing food supplies and by generating jobs and incomes. More than 120 million people are estimated to depend on fish for all or a part of their incomes. Fish sales also provide foreign exchange. Net exports by the less developed countries were worth more than US\$ 20 billion in 1994--more than coffee, banana, rubber, tea, meat or rice.

In 1994, 76 million tones of fish were caught in marine and inland waters for direct human consumption (another 33 million tones was used for fishmeal and fish oil, and in other non-food uses). Fish currently comprises about 19 per cent of the less developed countries' animal protein intake, or 5 per cent of the total protein intake from both plant and animal protein. Projections of demand for fish in the year 2010 are in the range of 110-120 million tones a year, a substantial increase from the 75-80 million tones that were the order of the day during the mid-1990's. Projections of supply for 2010 are less precise but even the most optimistic projections show that it falls short of demand, from 15 to 30 million tones. How should we address this problem? It seems obvious that we need to rationally manage our resources and reduce waste.

The FAO has found that 44 per cent of the stocks which have been assessed are being exploited at their maximum or close to it; 25 per cent are depleted. Overfishing and destructive forms of fishing can be partly blamed for this state of affairs but one cannot ignore the damage to coastal and marine environments due to pollution and habitat destruction. Overfishing not only depletes resources, it also leads to conflicts between fishing groups, states and regions. This is increasingly recognized by all concerned and remedial actions are being considered and initiated. The trend could be reversed through rational management of fisheries. As well as helping reduce fishing pressures this would require improved and less destructive methods of fishing, promotion of eco-friendly aquaculture and facilitating the restoration, recovery and rehabilitation of the environment, habitats and fisheries stocks.

Do we know enough to act? Can we afford to wait? I do not believe so. FAO is advocating a precautionary approach to fisheries management, rather than waiting till the signs of crisis become visible. This precautionary approach is an integral part of the 'International Code of Conduct for Responsible Fisheries', which was adopted in November 1993 at the 27th Session of the FAO Conference. It is our responsibility to translate this into a reality, to pave the way for a better managed tomorrow.

Gaps between supply and demand are aggravated by wasteful methods of handling and processing fish. As much as 27 millions tones of fish may be discarded each year. Some of the discarded fish have no commercial value while others are juveniles of commercial species. Supplies from marine capture fisheries peaked at 85.2 million tones in 1994. Of this some 52 million tones was available for direct human consumption. Most of this fish is caught and processed by small-scale producers in a trade involving at least 100 million people. We need to worry about reducing waste, increasing quality, and assuring access of fish to the most vulnerable, the poor! In other words getting more Out of less.

Considering this global context, it is natural that after two phases of the BOBP with a strong emphasis on technical innovations, the Programme now concentrates on fisheries management. The pressures from within the sector and from outside as well have led us to believe that we should accord first priority to managing our fisheries and coastal resources sustainably. Member countries are increasingly using their national expertise to promote fisheries management. BOBP during its third phase is here to assist in the process of finding and working out solutions and in strengthening the capacity of fishing agencies to cope with new challenges.

Since funds for the Programme have declined, member countries should assume a greater role through national execution. As the new ADG of the FAO for this region I look forward to seeing further co-operation between nations within the Region. I am happy that the countries are increasingly taking a larger role in implementation. A regional body such as the BOBP could help solve problems relating to management of a shared common resource that is prone to over-exploitation and conflict.

The very nature of problems associated with sustainable development of coastal communities which includes intense competition for scarce resources--requires that all stakeholders at all levels be involved in consultative processes leading to negotiated, agreements. The social feasibility of such efforts would be greatly enhanced if the resources and activities are managed by the concerned stakeholders themselves. Consultative and participatory processes amongst groups can work only when all stakeholder parties are aware of the issues, problems and solution options.

I believe that for users to become managers they need a stake in the resource. They need to be empowered to manage. Our ultimate direct beneficiaries, the small-scale fishers living in coastal communities, can help manage their resources, working collectively with other stakeholders, with our joint facilitation and assistance. A responsible approach to fisheries has been practised in many traditional small-scale fisheries for thousands of years. We must have faith in this potential of local fishers that they have knowledge, or local wisdom, although they do not always have the opportunities to translate their knowledge and beliefs into action. And it is our task to facilitate this transition.

The member countries of BOBP have accepted a major challenge, of evolving stakeholder approaches to coastal fisheries management. The pilot projects in the respective BOBP member countries, I am sure, will generate not only methods and approaches but also valuable learnings which will give directions to the future. I hope that we in this region will not only address the needs of our fisheries and their management but by doing so give hope to others.

On behalf of FAO, it is my pleasure to declare the 21st Meeting of the Advisory Committee of BOBP open, and I wish you all a fruitful meeting. I look forward to review your recommendations.

Thank you very much.

Appendix C

AGENDA

WEDNESDAY, 12 February 1997

1. Opening of the Meeting
2. Election of Chairperson
3. Adoption of Agenda
4. State of the Programme
5. Annual Report 1996 - Coastal Fisheries Management (BOBP)
 - a. Progress during 1996
 - b. Workplans for 1997
 - c. Mid-Term Evaluation
6. Annual Report 1996 & Workplan 1997 - Post-Harvest Fisheries (ODA-UK)
7. Annual Report 1996 & Workplan 1997- Cleaner Fishery Harbours (IMO/BOBP)

THURSDAY, 13 February 1997

8. BOBP's Role in Facilitating Improved Coastal Aquaculture Management
9. Other Matters
10. Next Meeting
11. Adoption of the Report

Appendix D

LIST OF DOCUMENTS

1. Provisional Agenda
2. List of Documents
3. Provisional List of Participants
4. State of the Programme
5. Annual Report 1996 and Workplan 1997 (Coastal Fisheries Management)
6. Annual Report 1996 and Workplan 1997 (Post Harvest Fisheries)
7. Annual Report 1996 and Workplan 1997 (Cleaner Fishery Harbours)
8. Mid-Term Evaluation of BOBP Coastal Fisheries Management Project --TOR

Appendix E

STATE OF THE PROGRAMME 1996

GENERAL

The Third Phase BOBP is considerably reduced in size not only in staff number and funding support but is expected to do more with less. This reduction in staff and funding should be kept in mind in the design and implementation of activities in the member countries. However, with greater stakeholder awareness on the need for precaution and responsible fisheries in the management of coastal resources and their habitats, greater efficiency and cost-effectiveness can be achieved.

Small but critical inputs are beginning to show positive results and impact. These include activities at both national and regional levels--situation analysis, stakeholder analysis, brainstorming on lessons learned, discussion about new issues and problems in fisheries management in 1995, and about participatory community-based fisheries management in 1996. Innovative mechanisms to bring about more people-centered ecosystem-wide management of fisheries and other coastal resources, made by the member countries in co-operation with the Programme, are paving the way for sustainable fisheries.

Immediate outputs are in the form of more widespread awareness and sensitivity, understanding and appreciation on the need for, benefits and approaches and methods of fisheries management. The concepts of responsible producer and consumer behaviour and responsible fisheries have slowly but steadily trickled down to the grassroots through the effort of member countries with the assistance of BOBP. The result is better awareness and participation by more and more government and non-government personnel and fishing communities in fisheries management activities initiated by member countries with catalytic inputs from BOBP.

PEOPLE-CENTERED MANAGEMENT

(Community-Based Fisheries and Coastal Resources Management System)

BOBP was instrumental in highlighting the implications of people-centered ecosystem-based management, not only in informal discussions with government, industry and non-government personnel but also in public fora.

The concept of “resource users as resource managers” empowering the people to take more responsibility for the resources they rely on for their food security, is currently very popular with NGOs and development workers, but many governments are relatively silent about the ideas and have not taken a position on it.

BOBP's work with member countries in this area reveals that not all countries are willing to delegate and decentralise responsibilities and authority. Those that *are* willing are looking for possible "loopholes" in their laws, rules and regulations to bring about such a people-centered ecosystem-based management system.

It is often said that the top-down approach to fisheries management has not worked or succeeded, being an 'intervention' in daily life imposed from outside. As fisherfolk and coastal inhabitants are used to a largely unfettered lifestyle, they have come to view any management initiative as a severe curtailment of their daily activities.

By the same token, the bottom-up approach is not any easier either, because the people themselves may not be sufficiently organised or ready to assume more control and management of the resources they rely on for livelihood security. BOBP's limited survey on the values, perceptions and attitudes of fisherfolk and other coastal stakeholders towards ownership and management of fisheries resources reveals that the sense of entitlement or ownership of the resources is still relatively under-developed among the majority of the fisherfolk surveyed, compared to their land-based counterparts in forestry or pastoral agriculture.

A good case in point is the availability of a community centre, fish landing and fishing boat repair and maintenance facility, constructed by the Thai Department of Fisheries for the use of the local community. While the fish landing facility is in use, the local community has not used the community centre to date because they are afraid to use it, and are not sure how to use it. They informed Thai fisheries officials that they need some assistance in organising themselves to be able to use such facilities, implying that they can benefit from training on leadership, a finding which the BOBP preliminary survey also confirmed.

In many of the fishing communities, there is a general lack of leadership among the fisherfolk, dominated as they have been for a long time by more well-to-do segments of the population. Therefore, success with bottom-up approaches to management calls for considerable preparatory work to organise the fisherfolk and the other stakeholders as resource managers. A harmonious balance and marrying of the two approaches - top-down and bottom-up - are clearly needed to bring about improved management and sustainability of the fisheries.

After about two years of concerted effort, there is today a greater appreciation of the need for greater coordination and consultation in government circles, and among GOs, NGOs and fishing communities and other stakeholders. Some of the collaborations have come about through the catalytic effort of BOBP counterpart colleagues and staff. In fact, member countries repeatedly request BOBP to act in such a capacity because they view the Programme as a neutral referee, able to bridge the sometimes conflicting needs of member countries.

Fishing communities have also deeply appreciated GO and NGO collaboration with them in member countries. The working styles of GOs and NGOs are dissimilar. NGOs work in the midst of the communities and have no office hours to clock in and out. They are frequently better funded and more flexible relative to GOs which have to abide by government regulations.

Thus, a mutually reinforcing and complementary relationship can and should be encouraged between GOs and NGOs, based on their comparative strengths.

During the last two years, BOBP has been breaking fresh ground in bringing together all stakeholders and preparing them for greater co-operation in examining what ails their communities as well as coming up with solutions which all stakeholders identify with. This then is the essence and strength of a Programme such as BOBP. Here are examples of selected outputs which illustrate the Programme's mandate, thrust and direction:

- * It is frequently claimed that fisherfolk are not willing to return gravid and undersized fish to the waters to allow them to spawn or grow larger. No fisher returns fish netted or caught because he has no assurance that the fish will remain his when it has spawned or grown larger. In Phang-Nga Bay, the Thai Department of Fisheries working together with local area NGOs, and fishing communities, has shown a way out.
- * Bay fisherfolk in Phang-Nga are now active in self-policing and self-managing, further reinforcing GO and NGO effort at monitoring, control and surveillance of illegal fishing or wilful violations of fisheries management rules and regulations. The fishing communities around the Bay are helping to keep push netters and trawlers out of the 3000 m zone. At the same time, they are building artificial reefs, not as a fishing gear but as a fisheries management tool. They report that they can net about Baht 500 for only 3-4 hours of fishing per night around the artificial reef. More recently, they have constructed fish cages for gravid females to allow them to spawn. The spent females are then sold and the income is placed into a community chest or revolving fund to improve community welfare.
- * In the absence of a fisheries management enforcement unit within the Department of Fisheries, fisherfolk in Tamil Nadu, India offered their own fishing boats and services to help enforce management measures and ensure compliance.
- * In Malaysia, where the Department of Fisheries has an adequate budgetary provision for enforcement, there is greater compliance with fisheries management measures, and violator boats are either confiscated or their owners fined. Such enforcement costs would necessarily be higher relative to the situation where the fisherfolk themselves also assist in its enforcement.
- * An example from BOBP's stakeholder consultation and analysis: **BOBP** was caught by surprise when one of the more dominant market intermediary stakeholders who controls and accounts for more than 50% of the market share of fish supply in southern Tamil Nadu bluntly asked BOBP to tell him what species we want him to stop buying to assist in the management, conservation and protection of the endangered fisheries. This is a startling revelation: even market intermediaries realize that their future means of livelihood and security depend on a healthy and vibrant fishery.

What these examples and experiences imply is that fisherfolk's level of awareness and concern are steadily growing and spreading. All it takes now to translate such awareness and concern into real grassroot actions is to work with them. Fisheries management is reactively abstract and hard for fisherfolk to understand unless we interpret and translate them into specific tasks.

To further strengthen the co-operation with GO and NGO personnel in consultative and participatory management, BOBP and member-countries have embarked on an ambitious regional survey to uncover the values, perceptions and attitudes of fisherfolk and other stakeholders towards the ownership of fisheries resources and its exploitation, management and sustainability.

The results of the survey, combined with the results of the situation analysis, stakeholder analysis and stakeholder communication analysis, will be used to develop awareness-building and public outreach and education materials.

Another joint initiative is the organization of a Regional Workshop on the Precautionary Approach to Fisheries Management. It will be held in February 1997. The experiences which GO and NGO personnel will obtain from the four-day Workshop will go a long way towards further sensitizing Workshop participants to responsible fisheries in fisheries management.

Thus all the stakeholders, from the GO to NGO and fisherfolk, are moving in the direction of responsible fisheries and sustainable production. As a result of strategic planning and implementation of public outreach and education by competent GOs and NGOs, fisherfolk's level of awareness, understanding and appreciation of management are being increased step by step.

COMMUNITY LEARNING AND EARNING CENTRE

Fisheries management is of course not new; it has been tried often in the past four decades. It is not being started all over again; but perhaps starting afresh based on accumulated experiences and lessons learned. Like all management processes, it is a continuing and evolving **learning** process. Fishermen are not overly enthusiastic about fisheries management, especially if it is imposed from the top and much less if it is also punitive. Fisheries management has to serve the needs of the fisherfolk and not the other way round.

As pointed out above, the first result of the Programme's effort at awareness-building and public education is beginning to pay off. Over the last two years, BOBP has been trying to institutionalise fisheries management through the communities of resource user groups, government personnel and other stakeholders who directly or indirectly impinge on the fisheries and their habitats and environment, through action or non-action. Because of this, it is essential that **their perceptions, values, habits and attitudes are examined and analysed to find out what they are and how positive attitudes and habits can be rewarded and negative behavioural traits or characteristics, attitudes and habits, perceptions and values can be corrected.**

State of the Programme 1996 (Continued)

The attitude of fisherfolk towards management can be changed by continuous public education and awareness-building. More and more people today are quality conscious. In the same manner, management consciousness among fisherfolk and coastal stakeholders can be developed and inculcated.

This is where the setting up of a 'community learning and earning centre' (CLEC) in strategic fishing villages can go a long way toward desirable change in the attitudes of the people towards fisheries management in general and responsible fisheries in particular. CLEC can prepare fisherfolk to come up with their own solutions to their own problems. While some member countries have already set up CLEC others are in the process of identifying suitable existing facilities to set up one.

Improving the understanding, awareness and knowledge of fisherfolk on fisheries management through local CLEC, can lead to closer co-operation between the fisherfolk and the government in fisheries management and thereby more effective compliance and impact.

The BOBP/ODA Post-Harvest Fisheries Project in India, Bangladesh and Sri Lanka continued its momentum into its fourth year of its third five-year phase which is expected to run till March 1998.

Some delay was experienced in the completion of the **BOBP/IMO Cleaner Fishery Harbour Project** in the Maldives and Sri Lanka. However, the artworks and graphics for the awareness-building campaigns have been sent to the printers. The international consultant will complete the rest of the assignment early January/February 1997.

It bears repeating that unlike previous phases, the Third Phase relies on national execution of Programme activities, with a catalytic and enabling role from BOBP. Because of the new thrust on national execution, member countries are expected to play a leading role in spearheading Programme activities and in laying the foundation for Third Phase activities. Available budgets and manpower at the national and local levels remain a problem in supplementing BOBP's allocated funds. This constraint may be overcome in the third year as close attention has been made to securing necessary counterpart funds to sustain and expand initiatives.

COASTAL FISHERIES MANAGEMENT IN THE BAY OF BENGAL

This second year represents a Programme milestone. BOBP has capitalised on the goodwill and co-operation of member countries to nationally execute a series of initiatives and activities which they can be justly proud of. These achievements are summarized below for the Committee's critical review.

In many BOBP member countries, the Department of Fisheries has not been provided with the wherewithal to manage fisheries, let alone enforce it. Further, management cannot be carried out independently of field conditions. BOBP in conjunction with member countries has taken

fisheries management out into the field and is focusing directly on fisherfolk by building their awareness and changing their attitudes and perceptions wherever feasible, working out CLEC.

ACTIVITY HIGHLIGHTS

BOBP-supported fisheries management activities in member countries are remarkable for their diversity. Identifying alternatives to set bag net and push net fisheries in Bangladesh; Coastal fisheries and aquaculture management in India; a model fishing village for Tapanauli Bay of fisheries in Indonesia; a Special Area Management Plan for the Pulau Payar Marine Park in Malaysia; integrated reef resources management in Maldives; managing ornamental fishery in Sri Lanka; and a model community-based fisheries management system in Phang Nga Bay, Thailand.

Despite this diversity, a common thread runs through all activities. BOBP is concerned with raising public awareness and in bringing concerned stakeholders together throughout the region. The need for resource sustainability and management drives all activities. Preserving and strengthening the health of the habitat is another factor.

Bangladesh: Estuarine Set Bag Net and Push Net Fisheries

Survey results and findings of the stakeholder analysis are being analysed and compiled. A key preliminary finding: there is little further scope for any expansion of the two fisheries. Fisherfolk informed the survey team that they will be forced to continue in the fisheries unless there are opportunities for them to leave the fisheries.

The Department of Fisheries with the assistance of BOBP will soon commission a local NGO to study available income-generating options or opportunities for fisherfolk. Both land-based options to attract fisherfolk out of the fisheries and opportunities further offshore will be examined. At the request of the government, BOBP fielded a consultant on exploratory fishing to train government and non-government personnel on the design and implementation of exploratory fishing trials.

The findings of stakeholder analyses are to be used in developing awareness-building and public outreach materials, and the preferred medium to reach them.

India: Coastal Fisheries and Aquaculture Management

The stakeholder analysis surveys conducted in the four East coast states are in various stages of completion. In Tamil Nadu, the analysis has been completed. As in Bangladesh, there does not appear to be any scope for further expansion of the nearshore or coastal fisheries. In Andhra Pradesh, the survey has been completed but analysis has had to be suspended because

State of the Programme 1996 (Continued)

of the recent devastating cyclones. In West Bengal and Orissa, the survey results are being analysed and reports are expected early next year.

The BOBP consultant on design and implementation of exploratory fishing trials used his extensive field experience with fisheries around the world to train government and non-government personnel from Tamil Nadu and Orissa.

Indonesia: Model Fishing Village for Tapanuli Bay Fisheries

On the strength of the recommendations made by FAO, Rome, the mariculture and coastal aquaculture component activities were temporarily suspended until a more well-developed technology on grouper cage culture becomes accessible. However, the government of Indonesia would like BOBP to reconsider its interim position and has reiterated its request for any kind of assistance that BOBP or FAO can provide on the subject.

Malaysia: Pulau Payar Marine Park

In Malaysia, a Special Area Management Plan (SAMP) under an integrated coastal area management (ICAM) Plan for the Pulau Payar Marine Park and surrounding waters, is now active. Sustainable multi-resource use and livelihood security have been firmly established for rural communities that depend on Pulau Payar coastal resources and waters. Management awareness inputs guided by Tier I and Tier II Committees have targeted area fishermen, stakeholders as well as government and non-government officers through multi-media and multi-stage information channels, a community learning centre, seminars and training courses.

Maldives: Integrated Reef Resources Management

The recommendations of the Workshop on Integrated Reef Resources Management have now been approved by the Fisheries Advisory Committee. Details of workplan activities for BOBP assistance are being worked out. Field visits to the four atolls are being planned to share the results of the Workshop and proposed activities which some of their representatives helped to put together during the Workshop. Fishermen and stakeholders in the Maldives more directly involved in the management process than in other countries, sharing full responsibility for the health and sustainable production of the reefs to achieve multiple use of reef resources. Such a process is facilitated by the small size of the fisherfolk community and stakeholders. It is expected that the experience from the joint Maldives/BOBP work in the four atolls can be applied to other atolls in the country.

Sri Lanka: Managing **Ornamental Fish Fisheries**

Drawings and artworks for species identification guides of key ornamental fish have been completed and will be printed once the new revised government fisheries ordinance is passed

by Sri Lanka's parliament. The identification guide shows species allowed for export and on the endangered list.

The government with the assistance of BOBP organised a successful and well-attended "Orientation Course on Fisheries Management" where senior policy-makers, research scientists from the university, as well as from research bodies, fisheries managers and district fisheries officers were provided with a refresher review of both conventional approaches to fisheries management and more recent innovative approaches such as people-centered ecosystem-based management.

Thailand: Phang-Nga Bay Model Community-Based Fisheries Management System

Thailand has made impressive gains in operationalising fisheries management at the grassroot level as can be gleaned from their annual progress report. Existing Thai fisheries management laws, regulations and rules are being examined with a view to amend them and provide for greater community participation and responsibility in managing fisheries resources. Fisheries management authority is slowly but steadily being shared between the government and local resource users and stakeholders.

The Phang-Nga Bay model for a community-based fisheries management system is now well understood and appreciated by the fishing communities around the Bay. Preliminary results and outputs are very positive and encouraging. The communities are moving forward with more and more innovative ideas to benefit from the government's initiative to bring them into the management process.

The Department of Fisheries in close consultation with the fishermen has established criteria and means to guide fishermen in managing their resources. Useful illustrations are the curb on trawling in inshore waters, gear diversification of the trawler fleet such as switching to gillnet; baby trawls equipped with BED/TED and larger codend mesh size; the gradual phasing out of pushnets; spawning cages constructed for gravid females, etc.

INFORMATION SERVICES (GCP/RAS/11 7/MUL)

With the Third Phase's main thrust on awareness building, public outreach and education, the role and contribution of the Information Services within BOBP and member institutions is not only essential but crucial. The member countries have continued to support BOBP's Information Services (GCP/RAS/1171MUL) through cash contributions of US\$90,000 a year.

Various information outputs and services are expected to be produced in early 1997 which will help in further sensitising and socialising BOBP's clientele on the need for and benefits and approaches to fisheries management, especially in operationalising fisheries management acceptable to fisherfolk. These new products and services include posters, materials for pledges, use of entertainment such as street and village theatre for social change, among others.

Fourteen final year students from G.B. Pant University visited BOBP on 28 May 1996 and were briefed on BOBP work. Some 30 students and 3 faculty members of the University of Bonn visited BOBP to find out more about BOBP's programme.

After establishing the basic groundwork to obtain the Global Environment Facility support to cost-share BOBP's existing allocated funds to further strengthen its on-going activities, the effort has now been transferred to FAO in Rome to streamline and formalise the process. This will leave BOBP staff with more time to concentrate on delivering its Programme outputs.

POST-HARVEST FISHERIES PROJECT

The second largest project under the BOBP umbrella deals with post-harvest fisheries. It is executed by the Natural Resources Institute (NRI) of the United Kingdom (UK) and supported by the Overseas Development Administration (ODA) of UK at a level of US\$2.25 million over a five year period (1993-1997). The project, operating in Bangladesh, India and Sri Lanka, seeks to enhance the incomes of artisanal fishing communities and petty fish traders, increase the diversity of fish products marketed by these communities and strengthen the ability of NGOs to secure sustainable benefits from project activities. Based in Madras, the project has set up regional offices in Kakinada, Andhra Pradesh and Dhaka, Bangladesh.

The project undertakes a broad-based approach to addressing the economic, institutional, social, technical and marketing needs of a wide target group amongst the rural coastal poor. It also promotes awareness-raising in post-harvest issues in the region and increased regional co-operation and communication. Its focus is on identifying solutions to post-harvest problems and assisting local government and non-government institutions and fisherfolk organisations to overcome these problems.

With the overall thrust of BOBP in enabling and facilitating fisheries management, post-harvest fisheries activities take on growing importance by showing the way to adding value to raw materials. Such post-harvest activities will help fisherfolk to earn more incomes. While the main Project and the post-harvest fisheries project aim to generate synergy by working together, as the Advisory Committee pointed during the last two AC Meetings, there is a need to further identify operational mechanisms by which post-harvest inputs can be made available to member countries who are not involved in the BOBP/ODA project ambit.

CLEANER FISHERY HARBOUR PROJECT

Some delay was experienced in the completion of the project activities on awareness building to promote cleaner fishery harbours in the Maldives and Sri Lanka. The artworks and other campaign materials have been completed and are now with the printers. The consultant will be able to close the activity in the two countries by the early part of 1997 with the organisation of a campaign on Cleaner Fishery Harbour Week which will culminate in a series of grassroot activities on keeping the public better informed.

Given the increasing emphasis of importing countries on the wholesome quality of seafood imported and on the environmental conditions in which or where seafood is captured, cultured, landed, handled and stored, there is clearly a definite need to support quality assurance efforts by member countries, in which promoting and facilitating cleaner fishery harbours will play an important role. Towards this end, BOBP held various discussions with competent bodies in the region and BOBP's own technical backstopping unit in FAO, Rome to see how best BOBP can assist member countries to comply with the HACCP requirements.

CONCLUDING REMARKS

Field observations and experiences continue to show that fisheries management is usually introduced after the resources are threatened, when in fact it should be instituted from the very beginning or at the earliest stage of the development of the fisheries. It is shown that the health of the fisheries and its habitats and ecosystems is closely related to the overall health and wealth of the community dependent on it. Wherever there is a sustainable fisheries, there is a thriving community behind it, highly appreciative and protective of its resources. What this means is that no amount of 'intervention' can bring about lasting impact unless the health and wealth of the community is assured and protected.

In the two short years of work in member countries, BOBP and its counterpart colleagues have shown that fisheries management can succeed, provided the mechanism and forum exists, in which well-balanced and informed discussion can take place among member-countries--including debate on local, national and regional interests consistent with member countries' national priorities. In other words, change can be brought about if the fisherfolk are sufficiently informed and made aware of their unsustainable fishing activities.

Wherever the opportunity presents itself, BOBP activities are closely coordinated with and supplementary to other ongoing national efforts since the activities are an integral part of the respective national fisheries plan and programme.

The tasks ahead in the remaining three years of the Third Five-Year Programme are now much easier to do because the foundation has been established in the last two years. With greater hindsight and lessons learned over the last two years, not only are management concepts more clearly defined or clarified but also more focussed or directed.

BOBP WORKPLAN FOR 1997 (PROPOSED)
COASTAL FISHERIES MANAGEMENT IN THE BAY OF BENGAL (GCP/RAS/150/DEN AND 151/JPN)

ACTIVITY NUMBER	ACTIVITIES/INPUTS (STAFF AND CONSULTANT)	1997												1998-1999	REMARKS	
		J	F	M	A	M	J	J	A	S	O	N	D			
1	Mid-Term Evaluation of Project						—								(To be worked out in close consultation with member country institutions in follow-up to 1996 workplan progress and achievements. etc.)	
2	Consultative and Participatory Coastal Fisheries within CAM Framework															
3	Development of Needed "Awareness Materials", including Preferred Mass Multi-Media Communication Channels and Factors Influencing Producer and Consumer Behaviour Change — Assist in the Establishment of Community Learning Centres for Integrated Coastal Fisheries and Aquaculture Management — Entertainment for Social Change — Street/Village Theatre — Assist in the Establishment of Travelling Roadshows and Occasional Seminars on Integrated Coastal Fisheries Management															
4	Regional Survey and Study on Values, Perceptions and Attitudes of Fishermen and Other Stakeholders Towards Ownership of Fisheries, Exploitation, Management and Sustainability															
5	Regional and National Workshops/Seminars/ Training Courses a. Precautionary Approach to Fisheries Management b. Logical Framework for Fisheries Planning and Management in each of 7 member countries c. Values, Perceptions and Attitudes of Fishermen and Other Stakeholders towards Ownership of Fisheries, Exploitation, Management and Sustainability d. Refresher Course on Fisheries Management (Review) in each of 7 member countries															
6	Skill Gap Analysis and Training Needs Assessment															
7	Monitoring and Evaluation (M&E) System for Project Implementation and Impact Assessment															
8	Advisory Services and Consultancy (Based on Need) International/National															

Staff strength – 1. Programme Coordinator/Fisheries Management Adviser; 2. Communication Adviser; 3. Resource Economics APO; 4. GIS APO

BOBP WORKPLAN FOR 1998 (PROPOSED)

COASTAL FISHERIES MANAGEMENT IN THE BAY OF BENGAL (GCP/RAS/15OIDEN AND 151/JPN)

ACTIVITY NUMBER	ACTIVITY DESCRIPTION (STAFF AND CONSULTANT)	1998												1999	REMARKS
		J	F	M	A	M	J	J	A	S	O	N	D		
1	Consultative and Participatory Coastal Fisheries Management within ICAM Framework													(To be worked out in close consultation with member country institutions in follow-up to 1997 workplan progress and achievements etc.)	Schedule is still tentative
2	Fisheries Management Outreach Through Community Learning Centres — Operationalizing Code of Conduct for Responsible Fishenes — Stock Enhancement														
3	Assistance in Promoting the Establishment of Marine Fish Sanctuary/Marine Park and Use of Community-Owned Artificial Reefs/FADs for Management														
4	Identification/Formulation of Special Area Management and SAMP														
5	Regional and National Workshop/Seminars/ Training Courses (Topics to be identified after 1997 Skill Gaps Analysis and Training Needs Assessment)														
6	Review Sampling Frame and Methodology of Data Collection system to Improve Fisheries Management														
7	Monitoring and Evaluation (M&E) System for Project Implementation and Impact Assessment (RAS/118)														
8	Advisory Services and Consultancy (Based on Need) — International — National														

STAFF STRENGTH

1. Programme Coordinator/Fisheries Management Adviser
2. Resource Economist APO
3. GISAPO

Appendix F

COASTAL FISHERIES MANAGEMENT IN THE BAY OF BENGAL (GCP/RAS/150/DEN & 151/JPN) INFORMATION SERVICE (GCP/RAS/117/MUL)

Annual Report 1996 and Workplan 1997

Country Report: Bangladesh

Objective:

In the context of conserving coastal fish resources and ensuring the sustainability of coastal fisheries, to facilitate and enable **improved management of the estuarine set-bag net (ESBN) and push-net (PN) fisheries** in selected coastal areas of **Bangladesh**, through awareness building, strengthening the institutional capacity of concerned agencies and provision of technical assistance.

Status March 1996:

In 1994 the Department of Fisheries' (DOF) Marine Wing undertook a situation analysis of the coastal fisheries of Bangladesh in order to identify and prioritize problems relating to fisheries management and to propose possible areas of cooperation between DOF and the BOBP during its third phase. The situation analysis was discussed at a regional meeting in Madras, and proposed that the Government of Bangladesh improve the management of the estuarine set-bag net (ESBN) and push-net (PN) fisheries, with the assistance of the BOBP. The recommendations of the meeting were submitted to the Advisory Committee of the BOBP, at its 19th Meeting in Jakarta in January 1995, for its consideration and was approved.

The ESBN is a traditional fishery which not only provides livelihood to a large population, mostly poor rural inhabitants, but provides a sizable proportion of the marine and brackishwater capture fisheries production. More importantly, the fishery provides most of the animal protein consumed by the rural poor. An earlier study of the fishery undertaken by BOBP, during its second phase, clearly showed that the ESBN, which interacts with at least seven major fisheries, is a destructive fishery, which could lead to growth and recruitment over-fishing of several important marine and brackishwater species. The PN fishery is of more recent origin having evolved to supply Bangladesh's rapidly growing coastal aquaculture sector with *P monodon* fingerlings. The fishery is extremely destructive, because over 90% of its catch consists of by-catch, made up of commercially important marine and brackishwater species. However, the fishery provides seasonal livelihood to a large number of poor people, most of whom are women and children. The Government of Bangladesh suggested that it would like to consider participatory approaches to improving the management of these two fisheries.

To initiate the project, the Ministry of Fisheries and Livestock (MOFL) in 1995 designated the Marine Wing of the DOF as the agency responsible for implementing it in cooperation with the Fisheries Research Institute (FRI), which would provide research support. The DOF prepared the Technical Assistance Plan Proforma (TAPP) to seek government clearance for the activity and submitted it to MOFL, the Planning Commission and the External Resources Division of the Ministry of Finance. In anticipation of the clearance MOFL made a budget allocation of Taka 300000 to support preparatory activities.

Thirty six DOF and FRI staff were given orientation on the BOBP activity, and in particular to participatory approaches to fisheries management. The staff were provided training in undertaking stakeholder identification, stakeholder analysis, stakeholder perception and communication analysis. The staff, after the training, designed, planned and undertook stakeholder studies in six sample areas in coastal Bangladesh, representative of the ESNB and PN fisheries. The findings of the two-month long field work were presented at a workshop where the staff identified the problems of the fisheries and the fisherfolk, prioritized them, analyzed them and, in the context of the findings of the stakeholder studies evolved a strategy and a workplan of activities which could address the problems and pave the way to improved management of the fisheries. This was the basis of the 1996 workplan which was presented to the Advisory Committee of the BOBP, at its 20th Meeting in March 1996, at Langkawi, Malaysia.

Given the focus on building awareness of the need for, the benefits of and the methods of fisheries management, the BOBP joined forces with the FAO and the Overseas Development Administration of the UK to support the Government of Bangladesh in holding a National Workshop on Fisheries Resources Development and Management. The recommendations of the Workshop reflected the commitment of the sector to management and gave valuable guidelines to pave the way to a sustainable future.

Revised Workplan for 1996:

The Advisory Committee of BOBP, while agreeing to the proposed 1996 Workplan in principle, recommended that it should be refined, modified and finalized by the project in consultation with their counterparts prior to implementation. The Committee, given the national execution thrust of the project, also recommended that the workplan should clearly indicate the responsibilities of national agencies and the BOBP in implementation.

The 1996 Workplan which emerged out of the discussions and was used to give direction to the project during the period April 1996 to January 1997 is shown below:

1996 WORKPLAN

Area : Bangladesh

Subproject Objective : Enable and facilitate improved management of the pushnet fishery of coastal Bangladesh targeting *P monodon* fry through awareness building, participation of stakeholders, technical assistance and, strengthening the DOF capacity.

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness building and consultations with stakeholders on: <ul style="list-style-type: none"> – State of fishery, impact on resources and need for management. – Preferred fishing seasons and locations based on abundance of <i>P monodon</i> fry. – Need for, benefits of and methods of reducing mortality and increasing survival of post-larvae, 	<ul style="list-style-type: none"> – Organize consultations with specific groups of stakeholders. – Assistance in development of mobile exhibition (travelling roadshow). Development of information packages re. preferred locations and seasons and means of reducing mortality, expected completion in 1997. Development of six radio programmes for broadcast on Radio Bangladesh. 	Identify NGO/private sector groups and assign design/development/production of mobile exhibition including posters, video-clips in movies, audio tapes in collaboration with DOF staff and stakeholders, for completion in 1997; materials design workshop; training of <i>DOFI</i> NGO staff in communication and mediation of consultations
2.	Review and document methods and techniques to improve fry handling and transport, and identification of optimal methods.	DOF/FRI to undertake in collaboration with aquaculture industry; TOR; undertake activity; report.	Assistance in planning.
3.	Planning and design of activities to: <ul style="list-style-type: none"> – reduce mortality of <i>P monodon</i> fry and improve its quality, – to increase earnings of fry collectors. – to reduce dependence of aquaculture sector on wild caught_fry. 	<ul style="list-style-type: none"> – Plan and develop strategy. – Incorporate 0013 budget input into national fisheries budget of 97-98. 	Evolve 1997 workplan. Assist in planning and strategy development.

1996 WORKPLAN (Revised)

Area : Bangladesh

Subproject Objective : Enable and facilitate improved management of the estuarine set bagnet fishery of coastal Bangladesh through awareness building, participation of stakeholders, technical assistance and, strengthening the capacity of the DOE

No.	Activity	Country Inputs	BOBP Inputs
1.	<p>Awareness Building and Consultation with Stakeholders on:</p> <ul style="list-style-type: none"> – Status of fishery, impacts of fishing, need for, benefits of and methods of management. – Need for, benefits of and methods for seasonal reductions of ESNB fisheries in selected locations, 	<ul style="list-style-type: none"> – Organise consultations with specific groups of stakeholders. – Assistance in conceptualize and development of comic book/audio cassette for awareness building including field testing. – Production of six radio programmes for broadcast on Radio Bangladesh. 	<p>Identify NGO/private sector group and assign design/development/production of comic book! cassette tape in collaboration with DOF staff and stakeholders, for completion in 1997; materials design workshop; training of DOF! NGO staff in communications and mediating consultations.</p>
2.	<p>Identification and documentation of seasons and locations to recommend seasonal closure of ESNB fisheries.</p>	<ul style="list-style-type: none"> – Develop TOR; assign staff in DOF/FRI; undertake study and report. 	<p>Assistance in Planning.</p>
3.	<p>Study on identification of alternate non-fisheries income options, Including opportunity analysis, economic and social feasibility analysis and development of awareness promotion strategy.</p>	<p>Assist in development of TOR; assist in identification of NGO/research organization to undertake study; cooperate and assist in study through staff deputation and logistics support.</p>	<p>Develop TOR; identification and assign NGO/ research institution; initiate research study - expected completion in 1997.</p>
4.	<p>Identification and promotion of alternate fishery income options for ESNB fisherfolk.</p>	<p>Assist staff of DOF to develop proposal on exploratory offshore fishing; economic and social feasibility studies; identification of options; development of awareness promotion/extension strategy for submission to interested donors.</p>	<p>Assist DOF staff In proposal development through training for selected staff in the design of exploratory fishing and feasibility analysis programme in conjunction with similar efforts in India.</p>
5.	<p>Planning of pilot activity on seasonal closures and possible alternative gear for ESNB fisheries in selected locations,</p>	<ul style="list-style-type: none"> – Plan and develop strategy for 1997. – Incorporate GOB budget input into national fisheries budget of 97-98. 	<p>Evolve 1997 workplan. Assist in planning and strategy development.</p>

Country Report: Bangladesh

Progress 1996:

Activity 1: (Combined Activity for both ESN and PN sector efforts)

Awareness building and consultations with stakeholders on:

- status of fishery, impacts of fishing, need for, benefits of and methods of management.
- need for, benefits of and methods for seasonal reductions of ESN fisheries in selected locations.
- preferred fishing seasons and locations (for PN fisheries) based on abundance of P. Monodon fry.
- need for, benefits of and methods of reducing mortality and increasing survival of post-larvae.

The efforts during 1996 focused on building up the capacity of the DOF/FRI staff in communications and mediation of consultations, and, in the context of the stakeholder analyses and the objectives of the project, to evolve the design of communication campaigns that could be used to assist and facilitate the implementation of management initiatives being considered for testing in pilot exercises in Chittagong and Cox's Bazaar districts: closed seasons for ESN fisheries in selected locations; reduction of by-catch destruction in PN fisheries; and, decreased mortality and increased quality of P. Monodon fry from PN fisheries.

36 DOF/FRI staff assigned to the project were trained in communications and in mediation of consultations in a three day workshop in Chittagong. As a part of the training the staff selected 15 staff from amongst themselves, who, after the training, undertook six weeks of field work wherein a variety of stakeholders of the ESN and PN fisheries were met for discussions, in order to evolve messages that could assist in and facilitate the implementation of management initiatives which could improve the management of the fisheries. The fieldwork resulted in the development of a series of message briefs, which media developers will use to develop communications and awareness materials.

Two one-day consultations were held with ESN and PN fishers, both in the village of Kumira in Chittagong district. The consultations provided valuable insights into perceptions and attitudes of fishers and better understanding of their problems and their ideas on solution options. The consultations also provided DOF/FRI staff with opportunities to try out and sharpen their communications and mediation skills.

A private sector group working with the development sector in Bangladesh, Sound and Vision for Extension (SAVE), has been identified to assist DOF in the development of communications and awareness materials that the staff will use to facilitate their management initiatives, expected to begin in 1997. A contractual service arrangement has been drawn up between FAO (BOBP) and SAVE to produce comic books and posters, as part of travelling exhibitions, audio cassette tapes and a series of radio programmes to be beamed at fisher communities by Radio Bangladesh from their Chittagong station. SAVE will work in close cooperation with

the DOF staff and evolve their productions out of the message briefs developed by the DOF/FRI staff. The communications and awareness materials are expected early in 1997.

ESBN SECTOR

Activity 2: Identification and documentation of seasons and locations to recommend seasonal closures for ESNB fisheries.

Selected DOF staff under the guidance of Mr Md Giasuddin Khan, Principal Scientific Officer, DOF undertook analysis of available data of the ESNB fisheries (generated by a bio-socio-economic study undertaken during the second phase of BOBP) to recommend areas and seasons where closed seasons could be recommended in the pilot districts of Chittagong and Cox's Bazaar. Field visits, paved the way for the analysis. Recommendations have been proposed to DOF, who in discussion with MOFL will consider issuing necessary rules and regulations under appropriate fisheries legislation, to help the project test the management initiative.

Activity 3: Study on identification of alternate non-fisheries income options, including opportunity analysis, economic and social feasibility analysis and development of awareness promotion strategy.

A leading fisherfolk NGO, Community Development Centre (CODEC), will do a study in selected areas of Chittagong and Cox's Bazaar districts., that will encompass techniques, discussion with experts, and observation, to identify non-fishery income options that ESNB fishers may consider during closed seasons, should they wish to get out of the fishery. Preliminary socio-economic feasibility studies will be taken up of options identified. Promotion strategies will be suggested as a part of a management initiative. A contractual service agreement has been drawn up for the study between FAO (BOBP) and CODEC. Results are expected towards the middle of 1997.

Activity 4: Identification and promotion of alternate fishery income options **for** ESNB fisherfolk.

An important first step has been taken in the identification of alternate fishery income options for ESNB fisherfolk. 10 DOF staff and one staff member from the NGO CODEC have been trained in the design, planning and management of participatory exploratory fishing trials. The trainer, an international consultant, Dr Marcel Guidicelli, conducted a 3-day training programme in Chittagong. It is hoped that the trained DOF staff will evolve proposals for the conduct of a series of exploratory fishing trials in Chittagong and Cox's Bazaar Districts, as part of the proposed pilot management initiative.

Activity 5: Planning of pilot activity on seasonal closures and possible alternative gear for ESNB fisheries in selected locations.

The DOF and FRI staff, on the basis of findings from stakeholder analysis, decided to test

closed seasons for ESNB fisheries in some selected locations in pilot areas of Chittagong and Cox's Bazaar districts from 1997. DOF and FRI staff have begun planning the campaign to promote and facilitate the seasonal closures. The indicative workplan for 1997, shown below emerged from the planning and deliberations of the DOF/FRI staff.

PN SECTOR

Activity 2: Review and document methods and techniques to improve fry handling and transport, and identification of optimal methods.

It was decided that the FRI would undertake this review, possibly in collaboration with the aquaculture industry. The DOF Marine Wing are in the process of routing a formal request to FRI through MOFL suggesting they undertake the study and give direction to the project's management initiatives. FRI may have operational budget shortages which may require the project to seek alternate sources of funding to get the study done. This component will be undertaken in 1997.

Activity 3: Planning and design of activities to:

- **reduce mortality of *P.monodon* fry and increase its survival.**
- **diversify earnings of fry collectors.**
- **reduce dependence of aquaculture sector on wild caught fry.**

The planning and design of activities were not completed because of delays in assigning the study that would generate and document the optimal methods of handling and transporting fry. A national workshop on low-input sustainable aquaculture has been proposed. This will help stakeholders of the aquaculture industry to think through their dependence on wild caught fry and its ecological impact, and come up with hatchery-based options that will reduce demand for wild caught seed. Keeping the thrust areas of reducing by-catch destruction and reducing mortality and improving quality of the target species in mind, the DOF/FRI staff evolved an indicative workplan for 1997 as shown below.

Other Activities

The Local Consultative Group (of donors and technical assistance agencies involved in fisheries in Bangladesh) invited BOBP to make a special presentation to their members on the issues and concerns of the marine and coastal fisheries sector of Bangladesh. The meeting gave us an opportunity to share ideas and to reflect on possible ways in which the different donors and agencies could coordinate and assist each other's efforts, thus benefitting the fisherfolk and the country. We hope that this is a first step which will lead to a more fruitful convergence, of efforts in Bangladesh. The Coastal Fisheries Management Project of BOBP and the Post-Harvest Fisheries Project of ODA-BOBP co-operated closely in Bangladesh, not only in sharing ideas and learnings but through active involvement of staff in each other's activities. Given that both the projects focus on the estuarine set-bag net community, such co-ordination and co-operation was found to be particularly useful as it produced synergy while eliminating duplication.

Assessment:

The activities in Bangladesh are reasonably on schedule, and progressing well in spite of delays in a few components. The level of performance of the participating junior and mid-level staff is high, and they are quite enthused about the project. Fund shortages - not only for operational inputs to enable national execution but also to facilitate staff participation through provision of travel and subsistence - is a constraint in government. **MOFL** has suggested that **DOF** develop a project proposal to enable national execution of the **BOBP** - assisted activity and put it up to the government for funding, to overcome this problem. Occasional transfers of staff out of and into the team assigned to implement the project are disruptive and wasteful in terms of training. The Marine Wing does not have a presence at the implementation level, that is at Thana and District level, and this will make for difficulties in implementation of the pilot exercises. Testing management initiatives at pilot scale will require regulations being notified under appropriate legislation. Delays in the issue of such regulations will delay the project. The management initiatives, all of which basically attempt to reduce effort, will depend on the availability of alternate income options for fishers. Promoting alternate income enterprises is a complex and expensive proposition requiring training inputs, credit supply and managerial help. Without the help of other government and donor inputs it will be difficult for **DOF** and **BOBP** with their constrained budgets to do justice to the task.

BANGLADESH: Indicative Workplan for 1997

Activity : In the context of conserving coastal fish resources and ensuring the sustainability of coastal fisheries, to facilitate and enable improved management of the estuarine set-bagnet (ESBN) and push-net (PN) fisheries in selected coastal areas of Bangladesh through awareness-building, strengthening the institutional capacity of concerned agencies and provision of technical assistance.

ESBN Sector

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness building and consultation with stakeholders on: <ul style="list-style-type: none"> – status of fishery, impacts of fishing, need for, benefits of and methods of management – Need for seasonal reduction of ESBN fisheries in selected location 	<ul style="list-style-type: none"> – organize consultations with ESBN fishers – policy makers – awareness campaign amongst ESBN fishery stakeholders in support of closed season initiatives including: <ul style="list-style-type: none"> – broadcast of radio programmes on radio BGD – distribution of comic book and audio cassette 	<ul style="list-style-type: none"> – Production of communication materials by SAVE – Training of DOF/FRI staff in media campaign planning and use of communication materials
2.	Study on identification of alternate non-fisheries income options, including opportunity analysis, economic and social feasibility analysis and development of promotion strategy	<ul style="list-style-type: none"> – Assist in study implementation – Identify agencies/fund sources to promote alternate income options and plan for activity late in '97 or '98 to support pilot closure of ESBN 	Complete study and hold workshop to disseminate findings and seek support for recommendations amongst key government and donor/technical assistance groups
3.	Identification and promotion of alternate fishery income options for ESBN fisherfolk	<ul style="list-style-type: none"> – design and develop detailed proposal for exploratory fishing trials; seek fund support from government donors and plan for implementation late in '97 or '98 	Facilitation
4.	Implementation Pilot Seasonal Closure of ESBN fisheries in selected areas of Chittagong and Cox's Bazar districts	<ul style="list-style-type: none"> – issue regulations to facilitate pilot closure – extension effort with awareness campaign – enforcement in co-operation with district! thana staff of DOF 	<ul style="list-style-type: none"> – Training of DOF/FRI staff in extension/communication/participatory enforcement to facilitate campaign
5.	Assess performance of closure and develop further management initiative to improve management of ESBN	<ul style="list-style-type: none"> – introduction of alternate income schemes with assistance from other agencies – assess performance of seasonal closure – plan and develop strategy for 1998 – Develop PP to facilitate National Execution and incorporate in National Fisheries Budget 	<ul style="list-style-type: none"> – Design and support study to assess performance – Evolve 1998 Workplan

BANGLADESH: Indicative Workplan for 1997

Push-Net Sector

No.	Activity	Country Inputs	BOBP Inputs
1.	<p>Awareness building and consultations with stakeholders on:</p> <ul style="list-style-type: none"> – State of fishery, impact on resources and need for management – Preferred fishing seasons and locations based on abundance of <i>P.monodon</i> fry – Need for, benefits of methods of reducing mortality and improving quality of post larvae 	<p>organise consultations</p> <ul style="list-style-type: none"> – with PN collectors/fisherfolk – Policy makers – awareness campaign amongst PN stakeholders to reduce by-catch mortality and reduce mortality of <i>Pmonodon</i> fry including <ul style="list-style-type: none"> – broadcast of programmes on BGD radio – travelling exhibitions – audio cassettes 	<ul style="list-style-type: none"> – Production of communication materials developed by SAVE – Training DOF/FRI staff in Media Campaign planning and issue of communication materials
2.	<p>Review and document methods and techniques to improve fry handling and transport, and identification of optimal methods</p>	<p>DOF/FRI to undertake review in collaboration with aquaculture industry; TOR; undertake activity; report.</p>	<p>Assistance in planning.</p>
3.	<p>National Workshop on Low Input Sustainable Aquaculture (LISA)</p> <ul style="list-style-type: none"> – to promote reduced dependence on wild fry – to promote eco-sustainable coastal aquaculture 	<p>Organise National Workshop bringing together all stakeholder groups</p>	<p>Helping in planning fund in co-operation with industry and other donors</p>
4	<p>Implement pilot management initiatives in selected areas of Chinagong and Cox's Bazar</p>	<ul style="list-style-type: none"> – issue regulations to facilitate pilot activities – extension effort with awareness campaign – enforcement in co-operation with district/thana staff – Technology transfer as recommended in #2 	<p>Training DOF/FRI staff in extension/communication participatory enforcement to facilitate campaign Seek support from other agencies to facilitate technology transfer</p>
5	<p>Assess performance of management initiatives</p>	<ul style="list-style-type: none"> – assess performance of pilot efforts – plan and develop strategy for 1998 – develop PP to facilitate National Execution and incorporate into National Fisheries Budget 	<ul style="list-style-type: none"> – Design and support study to assess performance – Evolve 1998 Plan

Country Report: India

Objective:

1. To enable and facilitate improved management of coastal fisheries and trawl fisheries in selected districts of the states of Tamil Nadu and Orissa, through awareness building, strengthening institutional capacity of concerned agencies, and provision of technical assistance. The eventual aim is sustainable utilization of coastal fisheries resources and reduction of conflicts amongst fishers.
2. To facilitate improved management of coastal aquaculture to ensure its sustainability in selected districts of the states of Andhra Pradesh and West Bengal, through awareness building, strengthening institutional capacity of concerned agencies, and provision of technical assistance. The long-term objective is integrated management of coastal resources.

Status March 1966:

In 1994 the Central Marine Fisheries Research Institute, at the request of the Government of India (GOI), undertook a situation analysis of coastal fisheries along the east coast of India, identified and prioritized the problems and proposed that BOBP assist the Governments of Tamil Nadu and Andhra Pradesh in improving the management of coastal fisheries, trawl fisheries and coastal aquaculture, with the participation of fishers. The situation analysis was discussed at a regional meeting in Madras and submitted to the 19th Meeting of the Advisory Committee of the BOBP, in Jakarta, in January 1995:

The BOBP undertook discussions with the GOI early in 1995 and the GOI confirmed that the focus of the third phase activities in India should be to improve the management of coastal fisheries and coastal aquaculture. However, it suggested that the geographical scope of the exercise be expanded to include the states of Orissa and West Bengal. At a workshop, which brought together representatives of GOI and the four east coast states, it was agreed that BOBP-assisted activities would focus on coastal fisheries management in Tamil Nadu and Orissa and on coastal aquaculture in Andhra Pradesh and West Bengal. National execution of the activities, implementation modalities such as staff allocation and liaison, pilot area locations and project foci were discussed and agreed upon. GOI communicated the proceedings of the meeting to the State Governments, seeking their support and commitment, and requested them to incorporate the proposed activities and budgets into state plans and state budgets.

In anticipation of positive responses from the states, the GOI requested the BOBP to initiate activities. BOBP staff visited all the four states for discussions with their counterparts and with selected stakeholders of the fisheries and aquaculture sectors. Out of these discussions a better understanding of the problems emerged, and workplans for the year 1996 were drawn up and agreed to. The state governments allocated staff to implement the activities, and while agreeing

in principle to allotting money in their state budgets to execute the projects, went ahead and committed budgets to cover the travel and daily subsistence needs of participating staff. The state governments felt that due to budget shortages they would need GOI and BOBP assistance to do justice to the tasks. The indicative workplans agreed for 1996 were submitted to the 20th Advisory Committee of BOBP in Langkawi, Malaysia in March 1996 for its consideration.

Revised Workplan for 1996:

The Advisory Committee of BOBP while agreeing to the proposed 1996 Workplan in principle, recommended that it should be refined, modified and finalized by the project in consultation with their counterparts prior to implementation. The Committee, given the national execution thrust of the project, also recommended that the workplan should clearly indicate the responsibilities of national agencies and the BOBP in implementation.

The 1996 Workplans which emerged out of the discussions and were used to give direction to the project during the period April 1996 to January 1997, are shown below.

1996 WORKPLAN (Revised & Final)

Area : India (Tamil Nadu) (K.K. District)

Subproject Objectives: **Facilitate and enable improved management of** coastal fisheries in Kanniyakumari District of Tamil Nadu State through awareness building, participation of stakeholders, technical assistance and strengthening the capacity of the DOF.

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness Building and Consultation with stakeholders on: <ul style="list-style-type: none"> – need, benefit and methods of fisheries management. – alternative fishery options to diversify fisheries management and management enforcement. 	<ul style="list-style-type: none"> – Identification of stakeholders. – Stakeholder analysis. – Stakeholder perception analysis. – Better understanding of problems through stakeholder viewpoints. – Consultation with stakeholders to prioritize problems and to come up with solution options. – Assistance in conceptualizing and development of the comic book on perceived problems and solution options in fisheries management supported by travelling exhibition. 	<ul style="list-style-type: none"> – Train extension staff in stakeholder identification, stakeholder analysis, stakeholder perception analysis. – Train extension staff in communication and mediating consultation. – orient extension staff in fisheries management approaches. – workshop to develop communication materials. – initiate production of comic book and travelling exhibit for completion in 1997.
2.	Plan and where possible initiate activities relating to: <ul style="list-style-type: none"> – closed seasons – offshore fishing access. – diversification of fisheries. – mesh size regulation. – management of particular species/ fisheries. 	<ul style="list-style-type: none"> – Plan for activities for 1997-1999 period in consultation with stakeholders. – Budget into 1997-98 State Budget and Finance requirements for National Execution. 	<ul style="list-style-type: none"> – Technical assistance in planning. – Consultant input to train selected staff to plan/design exploratory fishing trends to promote offshore access and to diversify coastal fisheries.

1996 WORKPLAN (Revised & Final)

Area : India (Tamil Nadu) (Madras)

Subproject Objectives : Facilitate and enable improved management of the trawl fishery based in Madras District of Tamil Nadu State, through awareness-building, participation of stakeholders, technical assistance and strengthening the capacity of the DOF.

No.	Activity	Country Inputs	BOBP Inputs	Remarks
1.	Awareness building and consultation with stakeholders on: <ul style="list-style-type: none"> – need, benefits and methods of fisheries management. – alternative fishery option-diversification, – offshore fishing options. – participatory fisheries management and enforcement. 	<ul style="list-style-type: none"> – Identification of stakeholders. – stakeholder analysis. – stakeholder perception analysis. – better understanding of problem through stakeholder viewpoints. – consultation with stakeholders to prioritize problems and to come up with solution options. – assistance to conceptualize awareness materials at community learning centre, Royapuram, on problem and solution options. 	<ul style="list-style-type: none"> – Train staff of DOF in stakeholder identification, stakeholder analysis, stakeholder perception analysis. – Orientation of staff in fisheries management approaches. – Train extension staff in communication and consultation mediation. – Workshop on development of awareness materials content/format. – Initiate production of materials and their dissemination for completion in 1997. 	BOBP to cover all costs except TA/DA of DOF Staff.
2.	Plan for future activities relating to: <ul style="list-style-type: none"> – closed seasons. – limiting trawl fishery. – offshore fishery access. – diversification of fisheries. 	<ul style="list-style-type: none"> – Plan for activities for 1997-1999 in consultation with stakeholders. – Organize 1997-1998 state budget fund requirements for national execution. 	<ul style="list-style-type: none"> – Technical assistance in planning. – Consultant input to train selected staff to plan/design exploratory fishing trials to promote diversification of fisheries and access to off-shore fisheries. 	BOBP to identify and assign consultant. TND OF budget from 1997 April if allocated.

1996 WORKPLAN (Revised)

Area : India (Orissa) (Baleshwar and Cuttack Districts)
 Subproject Objectives : Facilitate and enable improved participatory management of coastal fisheries.

No.	Activity	Country Inputs	BOBP Inputs
1.	Improved understanding of problems of coastal fisheries from the viewpoints of stakeholders	<ul style="list-style-type: none"> – Identification of stakeholders. – Stakeholder analysis. – Stakeholder perception analysis through stakeholder consultations – Better understanding of problems and their prioritization at stakeholder consultation. 	<ul style="list-style-type: none"> – Training of extension staff in stakeholder identification, stakeholder analysis and stakeholder perceptions. – Training of extension staff in communication and mediating consultations. – Orientation of DOF staff on fisheries management approaches.
2.	Awareness building among stakeholders on: <ul style="list-style-type: none"> – needs, benefits and methods of fisheries management. – diversification of fisheries. – Offshore fishery options. – participatory fisheries management and enforcement. 	<ul style="list-style-type: none"> – Assistance in conceptualizing and developing travelling exhibition. – Assistance in conceptualizing and developing comic book on fisheries management options and approaches. 	<ul style="list-style-type: none"> – Workshop to develop communication materials based on stakeholder understanding of problems for DOF/NGO staff. – Initiate production of travelling exhibition to be ready in 1997. – Initiate design and development of comic book for publication in 1997.
3.	Plan and where possible initiate activities such as: <ul style="list-style-type: none"> – diversify inshore fisheries. – promote offshore fisheries. – discourage trawlers. 	<ul style="list-style-type: none"> – Plan 1997-1999 activities in consultation with stakeholders. – Allocation in 1997-1998 state budget for national execution. – Initiate planning and design of participatory exploratory fishing and demonstration trials for 1997. 	<ul style="list-style-type: none"> – Technical assistance in planning. – Consultant input to train selected staff to plan/design exploratory fishing and demonstration trials (in conjunction with TN/BGD). – Develop 1997 workplan.

1996 WORKPLAN (Revised)

Area India (Andhra Pradesh) (East Godavari and Krishna Districts)
 Activity : Facilitate and enable improved participatory management of Coastal Aquaculture.

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness building and consultation among stakeholders on: <ul style="list-style-type: none"> – needs, benefits and methods of sustainable aquaculture. – culture of alternative non-shrimp species. – improved water quality management. – disease prevention and management/ crop sanitation. – farm management economics. 	<ul style="list-style-type: none"> – Identification of stakeholders. – Stakeholder analysis. – Stakeholder perception analysis. – Improved understanding of problems. – Mass meetings of aquaculturists – Assistance in development of travelling exhibit. 	<ul style="list-style-type: none"> – Training of DOF extension and BFDA staff in stakeholder identification, stakeholder analysis and stakeholder perceptions analysis. – Training of DOF/BFDA staff in communication and mediation of consultation. – Training of DOFIBFDA staff in sustainable aquaculture practices.
2.	Promote farm/cluster level water management and quality improvement	<ul style="list-style-type: none"> – Train extension/BFDA and farmers on methods and practices in improving water quality, – Regular monitoring and testing using portable water test kits. 	<ul style="list-style-type: none"> – Identify consultant to design training program and to develop manual on water quality management through TCDC mechanism. – Supply of portable water test kit for field testing.
3.	Planning for activities of 1997-1999 in cooperation with stakeholders.	<ul style="list-style-type: none"> – Planning. – Budget allocation to cover activities in State Budget 1997-1998 for National Execution. 	<ul style="list-style-type: none"> – Assistance in planning. – Technical assistance. – Evolve 1997 workplan.

1996 WORKPLAN (Revised & Final)

Area : India (West Bengal) (Midnapur and South 24 Parganas)

Subproject Objectives : Facilitate and enable improved management of coastal aquaculture to ensure its sustainability through awareness-building, participation of stakeholders, technical assistance and strengthening the capacity of the DOE

No.	Activity	Country Inputs	BOBP Inputs	Remarks
1.	<p>Awareness building and consultation among stakeholders on:</p> <ul style="list-style-type: none"> – needs, benefits and methods of sustainable aquaculture. – culture of alternative species. – improved water quality, management. – disease prevention and mangement. 	<ul style="list-style-type: none"> – Identification of stakeholders. – stakeholder analysis. – stakeholder perception analysis. – improved understanding of problems. – mass meetings of fish fanners around travelling exhibits. – assistance in development of awareness materials. 	<ul style="list-style-type: none"> – Training of extension staff of DOF and BFDA staff in stakeholder identification, stakeholder analysis and stakeholder perception analysis. – Training DOF and BFDA staff in communication and mediation of consultations. – Orientation of staff (DOF and BFDA) in sustainable aquaculture practices. – Workshop to develop awareness materials – Initiate development awareness materials for completion in 1977. 	<p>All expenses for BOBP except TAIDA of DOF staff.</p>
2.	<p>Strengthen DOF training programmes for:</p> <ul style="list-style-type: none"> – seed collectors in eco-friendly practices. – fish farmers on sustainable culture practises. 	<ul style="list-style-type: none"> – workshop on training of trainees for DOFIBFDA staff. 	<ul style="list-style-type: none"> – Assist in workshop design. – Provision of resource persons and trainers, – Assist in workshop design. Provision of resource persons and trainers. 	<p>State Execution. BOBP to provide resource persons and trainers.</p>
3.	<p>Promote water quality management:</p>	<ul style="list-style-type: none"> – train fish farmers in water quality management. – monitor water quality, 	<ul style="list-style-type: none"> – Provision of portable water quality test kit for field testing. 	<p>State Execution. BOBP to supply equipment.</p>
4.	<p>Planning for activities 1997-1999 in cooperation with stakeholders.</p>	<ul style="list-style-type: none"> – planning in consultation with stakeholders. – Budget allocation to cover. expenditure in State Budget 1997-1998 onwards for state execution. 	<ul style="list-style-type: none"> – Assistance in planning and technical assistance. – Evolve 1997 workplan. 	<p>State Execution.</p>

Progress 1996: Tamil Nadu (Chennai & Kanniya Kumari Districts) Coastal Fisheries Management

A three-day training programme was held for 15 Department of Fisheries (DOF) staff of Chennai and Kanniya Kumari districts, and four Catholic Priests of the Diocese of Kottar working with Kanniya Kumari fishers, to orient them to the BOBP project, to fisheries management and to stakeholder approaches to management and to train them in stakeholder identification, and analysis, and stakeholder communications and perception analysis. As a part of the training, the participants designed and planned field work to undertake stakeholder analysis in their respective districts.

In conjunction with the training workshop, held in Nagercoil, Kanniya Kumari district, a one-day consultation was held with selected representatives of various stakeholder groups of the coastal fisheries in Kanniya Kumari district. The consultation helped in building rapport with the stakeholders and in better understanding stakeholders' perceptions of problems faced by them and their ideas of solution options. It also gave the trainees an opportunity to put their skills to test.

Subsequent to the training workshops the participating staff and the priests undertook detailed stakeholder analysis in their respective districts over a six-week period. The stakeholder analysis was delayed considerably due to the tropical cyclone that severely affected northern Tamil Nadu, which resulted in DOF staff being deployed for relief and rehabilitation efforts. The stakeholder analysis was completed by December 1996 and reports were produced.

A training programme was planned to build up the capacity of the DOF staff in the design, planning and management of exploratory fishing trials and Dr Marcel Giudicelli was assigned as International Consultant to undertake the training. The training had to be cancelled due to delays in GOI clearance for the consultant. It is envisaged that the training programme will be held at some future date.

A workshop has been planned early January 1997 which will bring together participating staff to discuss the findings of the stakeholder studies, and to develop strategy and plan activities which would lead to improved management. In conjunction with the workshop the participants will be trained in communication and awareness-building and will be helped to evolve a communications and awareness campaign strategy which will assist the staff in implementing the planned management initiatives. Details of the outcome of the training and workshop which will be held in January 1997 will be attached as an addendum to this report which was prepared in December 1996. In discussion with counterpart staff, an indicative workplan for activities in Tamil Nadu for 1997 has been drawn up and is being submitted for the consideration of the 21st Meeting of the Advisory Committee of BOBP.

Orissa (Baleshwar and Cuttack Districts) (Coastal Fisheries Management)

A four-day training programme was held for 26 participating Department of Fisheries (DOF) staff of Baleshwar and Cuttack districts and two senior staff from DOF HQs to orient them

to the BOBP project, to fisheries management and to stakeholder approaches to management, and to train them in stakeholder identification, stakeholder analysis and stakeholder communications and perception analysis. As a part of the training, the participants designed and planned for field work to undertake stakeholder analysis in their respective districts.

In conjunction with the training workshop, held in Baleshwar district, a one-day consultation was held with selected representatives of various stakeholder groups of the coastal fisheries in Cuttack and Baleshwar districts. The consultation helped build rapport with the stakeholders, better understanding of stakeholder perceptions of the problems faced by them and their ideas of solution options. It also gave the trainees an opportunity to put their skills to test.

Subsequent to the training workshop, the participating staff undertook detailed stakeholder analysis in their respective districts over a six-week period. The stakeholder analysis was completed by December 1996 and reports were produced. The follow-up workshop to discuss the findings of the stakeholder studies and to train the staff in communications and awareness building planned for December 1996 was postponed to the next quarter because of scheduling problems, and other preoccupations of the DOF staff.

A training programme was planned to build up the capacity of the DOF staff in the design, planning and management of exploratory **fishing trials**. **Dr Marcel Giudicelli** was assigned as International Consultant to undertake the training. Dr Giudicelli conducted a three-day training programme for ten DOF staff and two staff of a local NGO, working with marine fishers.

In discussion with counterpart staff, an indicative workplan for activities in Orissa for 1997 was drawn up. It is being submitted for consideration to the 21st Meeting of the Advisory Committee of BOBP.

Andhra Pradesh (East Godavari and Krishna District) (Coastal **Aquaculture Management**)

A four-day training programme was held for 30 participating Department of Fisheries (DOF) staff of East Godavari, Krishna, West Godavari, Prakasam and Nellore districts to orient them to the BOBP project, to management of aquaculture to ensure sustainability, to stakeholder approaches to management and to train them in stakeholder identification, stakeholder analysis and stakeholder communications and perception analysis. As a part of the training the participants designed and planned field work to undertake stakeholder analysis in the districts of East Godavari and Krishna.

In conjunction with the training workshop held in Kakinada, a one-day consultation was held with selected representatives of various stakeholder groups of coastal aquaculture in East Godavari and Krishna districts. The consultation helped in building rapport with stakeholders, in better understanding the perceptions of stakeholders of problems faced by them and their ideas of solution options, and also gave the trainees an opportunity to put their skills to test.

Subsequent to the training workshop, the participating staff undertook detailed stakeholder analysis in their respective districts over a six-week period. The stakeholder analysis was delayed because two tropical cyclones devastated the region within a period of two weeks and all staff have been deployed to undertake relief and rehabilitation works. The damage to farms and casualties amongst the coastal people was very high and it is difficult to clearly predict when the communities and the DOF staff will complete their stakeholder studies, though the DOF has indicated that they will be ready to progress activities in the first quarter of 1997.

In consultation with BOBP counterparts, an indicative workplan for 1997 has been developed. It is submitted to the 21st Meeting of the Advisory Committee of BOBP for its consideration.

West Bengal (Midnapur, South 24 Parganas & North 24 Parganas)
(Coastal Aquaculture Management)

A four-day training programme was held for 29 participating Department of Fisheries (DOF) staff of Midnapur, South 24 Parganas and North 24 Parganas districts to orient them to the BOBP project, to management of aquaculture to ensure sustainability, and to stakeholder approaches to management and to train them in stakeholder identification, stakeholder analysis and stakeholder communications and perception analysis. As a part of the training, the participants designed and planned field work to undertake stakeholder analysis in their respective districts.

In conjunction with the training workshop, held in Nimpith, **a one-day consultation was held** with 20 selected representatives of various stakeholder groups of coastal aquaculture in South and North 24 Parganas districts. The consultation helped in building rapport with the stakeholders and in better understanding of the perceptions of stakeholders of problems faced by them and their ideas of solution options. It also gave the trainees a chance to put their skills to test.

Subsequent to the training workshop, the participating staff initiated detailed stakeholder analysis in their respective districts. The participating staff did not get their orders from DOF in time and in two districts the stakeholder analysis were considerably delayed. In North 24 Parganas the participating staff took the initiative and with the assistance of their senior staff completed the studies and reported on it in time for the follow-up workshop.

A follow-up workshop was held at Nimpith with 27 DOF staff who had undertaken the stakeholder studies. The workshop discussed the findings of the stakeholder studies and evolved a strategy for the project and an indicative workplan for 1997. The workshop was also used to provide the DOF staff training in communications and awareness-building. An indicative workplan for 1997 emerged from the deliberations of the workshop. In addition, staff of the three participating districts agreed to develop detailed workplans for each district and to budget the expenses to be met from DOF, West Bengal and BOBP funds. Further, the two districts which were lagging behind in stakeholder analysis agreed to complete the task. All three districts agreed to hold stakeholder meetings to determine their awareness and

Annual Report 1996 and Workplan 1997 (continued)

communication needs, to help and assist the staff in implementing selected management initiatives during 1997. The indicative workplan for 1997 is submitted to the 21st Meeting of the Advisory Committee of BOBP for its consideration.

Assessment:

In spite of delays in implementation, partly due to natural calamities and partly due to delays in issue of government orders and other preoccupations, it can be said with confidence that the staff are by and large very committed and interested in their work. Their performance has been good. In fact the quality of work in some states has been outstanding, particularly because junior staff took the initiative and persuaded their senior staff to find ways around bureaucratic hurdles.

National execution of the projects has proceeded less smoothly. The states face severe financial constraints and have had problems even in providing travel and subsistence support to their participating staff. With the operational stage of the project fast approaching this situation may prove difficult. Most states feel that the Government of India and the BOBP will have to carry the bulk of the financial responsibilities for the activities, unless the GOI takes the lead and in discussion with the states comes up with alternate options to enable national execution.

INDIA : Indicative Workplan for 1997

Area : India (Tamil Nadu) (Chennai)

Subproject Objectives : **Facilitate and** enable improved management of trawl fishery based in Madras District of Tamil Nadu State through awareness-building, participation of stakeholders, technical assistance and strengthening the capacity of the DOF.

No.	Activity	Country Inputs	BOBP Inputs	Remarks
1.	Awareness building and consultation among stakeholders on: <ul style="list-style-type: none"> – need, benefits and methods of fisheries management. – alternative fishery option-diversification, – offshore fishing options. – participatory fisheries management and enforcement. 	<ul style="list-style-type: none"> – Consultation with stakeholders to prioritize problems and to come up with solution options. – Assistance to conceptualize awareness materials at community learning centre, Royapuram, on problem and solution options. 	<ul style="list-style-type: none"> – Train extension <i>staff</i> in communication and consultation mediation. – Workshop on development of awareness materials content/format – Initiate production of materials and their dissemination. 	<p>BOBP to cover all costs except TA/DA of DOF staff.</p>
2.	Plan and where possible initiate selected activities relating to: <ul style="list-style-type: none"> – closed seasons. – limiting trawl fishery. – offshore fishery access. – diversification of fisheries, 	<ul style="list-style-type: none"> – Plan and initiate implementation of selected activities. – Plan for activities for 1998 in consultation with stakeholders. – Budget into state budget fund requirements for national execution. 	<ul style="list-style-type: none"> – Technical assistance in planning. – Consultant input to train selected staff to plan/design exploratory fishing trials to promote diversification of fisheries and access to offshore fisheries. – Develop 1998 Workplan. 	<p>BOBP to identify and assign consultant. TNDOF budget from 1997 April if allocated.</p>

1996 WORKPLAN (Revised & Final)

Area : India (Tamil Nadu) (K.K. District)

Activity : Facilitate and enable the improvement of management of coastal fisheries in Kanniyakumari District of Tamil Nadu State through awareness-building, participation of stakeholders, technical assistance and strengthening the capacity of the DOF.

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness-Building and Consultation with stakeholders on: <ul style="list-style-type: none"> - need, benefit and methods of fisheries management. - alternative fishery options to diversify fisheries management and enforcement. 	<ul style="list-style-type: none"> - Consultation with stakeholders to prioritize problems and to come up with solution options. - Assistance in conceptualizing and development of the comic book on perceived problems and solutions, prioritize problems and come up with options in fisheries management supported by travelling exhibition. 	<ul style="list-style-type: none"> - Train extension staff in communication and mediating consultation. - workshop to develop communication materials - initiate production of comic book and travelling exhibit.
2.	Plan and where possible initiate selected activities relating to: <ul style="list-style-type: none"> - closed seasons. - offshore fishing access. - diversification of fisheries. - mesh size regulation. - management of particular species/ fisheries. 	<ul style="list-style-type: none"> - Plan and initiate implementation of selected activities. - Plan activities for 1998 in consultation with stakeholders. - Budget into State Budget and fund requirements for national execution. 	<ul style="list-style-type: none"> - Technical assistance in planning. - Consultant input to train selected staff to plan/design exploratory fishing trends to promote offshore access and to diversify coastal fisheries. - Develop 1998 workplan.

INDIA : Indicative Workplan for 1997

Area : India (Orissa) (Baleshwar and Cuttack Districts)

Activity : Facilitate and enable improved, participatory management of coastal fisheries.

No.	Activity	Country Inputs	BOBP Inputs
1.	Improved understanding of problems of coastal fisheries from the viewpoints of stakeholders.	<ul style="list-style-type: none"> – Better understanding of problems and their prioritization at stakeholder consultations. 	<ul style="list-style-type: none"> – Training of extension staff in communication and mediation of consultations.
2.	Awareness building among stakeholders on: <ul style="list-style-type: none"> – needs, benefits and methods of fisheries management. – diversification of fisheries, offshore fishery options. – participatory fisheries management and enforcement 	<ul style="list-style-type: none"> – Assistance in conceptualizing and developing travelling exhibition. – Assistance in conceptualizing and developing comic book on fisheries management options and approaches. 	<ul style="list-style-type: none"> – Workshop to develop communication materials based on stakeholder understanding of problems for DOF/ NGO staff. – Initiate production of travelling exhibition. – Initiate design and development of comic book.
3.	Plan and where possible initiate selected activities to: <ul style="list-style-type: none"> – diversify inshore fisheries. – promote offshore fisheries. – discourage trawlers. 	<ul style="list-style-type: none"> – Plan 1998 activities in consultation with stakeholders. – Budget into state budget for National Execution. – Initiate planning and implementation of selected management activities. 	<ul style="list-style-type: none"> – Technical assistance in planning. – Develop 1998 workplan.

INDIA Indicative Workplan 1997

Area India (Andhra Pradesh) (East Godavari and Krishna Districts)
 Activity Facilitate and enable improved participatory management of Coastal Aquaculture.

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness-Building and Consultation with stakeholders on: <ul style="list-style-type: none"> – needs, benefit and methods of sustainable aquaculture. – culture of alternative non-shrimp species. – improved water quality management. – disease prevention and management/ crop sanitation. – farm management economics. 	<ul style="list-style-type: none"> – Mass meetings of aquaculturists – Assistance in development of travelling exhibit. 	<ul style="list-style-type: none"> – Training of DOF/BFDA staff in communication and mediation of consultation. – Training of DOF/BFDA staff in sustainable aquaculture practices.
2.	Promote farm/cluster level water management and quality improvement,	<ul style="list-style-type: none"> – Train extension/BFDA and farmers on methods and practices in improving water quality, – Regular monitoring and testing using using portable water test kits. – Train fish farmers in sustainable aquaculture practices 	<ul style="list-style-type: none"> – Identify consultant to design training program and to develop manual on water quality management through TCDC mechanism. – Supply of portable water test kit for field testing.
3.	Planning for activities of 1998. in co-operation with stakeholders.	<ul style="list-style-type: none"> – Planning. – Budget allocation to cover activities in State Budget for National Execution. 	<ul style="list-style-type: none"> – Assistance in Planning. – Technical assistance. – Evolve 1998 workplan.

1996 WORKPLAN (Revised & Final)

Area : India (West Bengal) (Midnapur and South 24 Parganas and North 24 Parganas)
 Subproject Objectives : Facilitate and enable improved management of Coastal Aquaculture to ensure its sustainability through awareness-building, participation of stakeholders, technical assistance and strengthening the capacity of the DOF.

51

No.	Activity	Country Inputs	BOBP Inputs
1.	Awareness-building and consultation among stakeholders on: <ul style="list-style-type: none"> – needs, benefits and methods of sustainable aquaculture. – culture of alternative species. – improved water quality management. – disease prevention and management 	<ul style="list-style-type: none"> – mass meetings of fish farmers around travelling exhibits, – assistance in development of awareness materials. – extension of awareness campaign 	<ul style="list-style-type: none"> – Workshop to develop awareness materials – Initiate development of awareness materials.
2.	Strengthen DOF training programmes for: <ul style="list-style-type: none"> – seed collectors in eco-friendly practices. – fish farmers on sustainable culture practices. 	<ul style="list-style-type: none"> – workshop on training of trainees for DOF/BFDA staff. 	<ul style="list-style-type: none"> – Assist in workshop design. – Provision of resource persons and trainers. – Assist in workshop design. – Provision of resource persons and trainers.
3.	Promote water quality management.	train fish farmers in water quality management. <ul style="list-style-type: none"> – monitor water quality. – train fish farmers in sustainable aquaculture practices. 	<ul style="list-style-type: none"> – Provision of portable water quality test kit for field testing. – Training of DOF/BFDA staff in sustainable aquaculture practices.
4.	Planning for activities 1997-1999 in cooperation with stakeholders.	<ul style="list-style-type: none"> – planning in consultation with stakeholders. – Budget allocation to cover expenditure in State Budget for National Execution. 	<ul style="list-style-type: none"> – Assistance in planning and technical assistance. – Evolve 1997 workplan.

Country Report: Indonesia

Objective:

In the context of evolving model fishing villages to undertake community-based fisheries management, **to facilitate and enable improved management of mariculture, anchovy lift-net fishery and small scale fisheries in the Tapanuli Bay area of North Sumatra, Indonesia**, through awareness building, strengthening institutional capacity of concerned agencies and provision of technical assistance.

Status March 1996:

The Provincial Fisheries Service (PFS) of North Sumatra with support from the Directorate General of Fisheries (DGF) undertook in 1994 a situation analysis of coastal fisheries of North Sumatra to identify and prioritize problems and to propose possible areas of cooperation between BOBP and the Government of Indonesia during the third phase of BOBP. The situation analysis was discussed at a regional meeting held in Chennai, India, and proposed that the Government of Indonesia would like to develop model management schemes for coastal fisheries and mariculture using participatory, community-based approaches which conserve and sustain resources and improve the livelihood of fishers, with the assistance of BOBP. The intention was to evolve and test methods and approaches in the Tapanuli Bay area of North Sumatra and based on the success of pilot efforts to extend the learnings to other parts of the country. The recommendations of the regional meeting were submitted to the 19th Meeting of the Advisory Committee of BOBP, held in Jakarta in January 1995, and were approved.

Early in 1995 the Directorate General of Fisheries designated the Provincial Fisheries Service of North Sumatra and the District Fisheries Services (DFS) of Sibolga and North Tapanuli as the agencies responsible for the implementation of the **BOBP** assisted project. The DGF, in order to support national execution of the Project, incorporated fund allocations into their annual budgets to cover necessary expenses, beyond the assistance available from BOBP. Based on discussions BOBP staff had with their counterparts and with selected stakeholders of the concerned fisheries, preliminary workplans were evolved and these were modified suitably based on discussions with stakeholders and on stakeholder studies undertaken by DGF/PFS/DFS staff.

To expand the scope of the activity, and to address the needs of the situation, **BOBP** assisted DGF in designing and developing a project proposal for submission to the UNDP, which would supplement and support BOBP-assisted efforts. UNDP, however, was unable to support the project in its current funding cycle, and hopes to consider it in its next cycle.

One DGF staff, 6 PFS staff and 10 DFS staff were given orientation on the BOBP project and stakeholder approaches to fisheries management and trained to undertake stakeholder identification, stakeholder analysis and stakeholder communications and perceptions analysis.

The training included a one-day stakeholder consultation which brought together the staff and selected representatives of the mariculture, anchovy lift-net and small-scale fisheries for discussion. Subsequent to the training, the trained staff undertook a month's field work, and their report was discussed at a workshop in Medan. The DGFIPFSIDFS staff, on the basis of their findings, and in the context of the preliminary workplan, identified problems of the three sectors, prioritized them, analyzed them and proposed activities to address the problems and needs of the sectors. The indicative workplan for 1996 evolved out of the deliberations of the workshop and were submitted to the 20th Meeting of the Advisory Committee of BOBP in Langkawi, Malaysia.

Revised Workplan for 1996:

The Advisory Committee of **BOBP** while agreeing to the proposed **1996 Workplan in principle**, recommended that it should be refined, modified and finalized by the project in consultation with their counterparts prior to implementation. The Committee, given the national execution thrust of the project, also recommended that the workplan should clearly indicate the responsibilities of national agencies and the BOBP in implementation.

The 1996 Workplan which emerged out of the discussions and was used to give direction to the project during the period April 1996 to January 1997, is shown below.

1996 WORKPLAN (Revised)

Area : Indonesia.

Subproject Objective : In the context of evolving model fishing villages to undertake community-based fisheries management, to facilitate and enable improved management of mariculture, anchovy lift-net fishery and small-scale fisheries in the Tapanuli Bay area of North Sumatra, through awareness building, strengthening of institutional capacity of concerned agencies and provision of technical assistance.

Activity CFM (General)

54

No.	Activity	Country Inputs	BOBP Inputs
1.	Preparation for: – National Workshop on Community Based Management. – Regional Workshop on Precautionary Approaches to Fisheries Management.	Co-operation and participation; locating national fund sources	Conceptualize and design workshops; identify fund sources; develop prospectus; identify resource persons and initiate assignment; initiate development of materials - incorporating with DGF.
2.	Translation and modification of Stakeholder Approaches to Fisheries Management Manual.	– Initiate translation and editing.	– BOBP to produce on completion in 1997.
3.	Review of Fisheries Management Related Regulations and Legislation.	– Develop TOR. – Identify resource persons to undertake study. – Initiate assignment.	Develop TOR in cooperation with DGF.
4.	Plan activities for 1997.	– Plan activities for 1997. – Incorporate government contribution to project into DGF and PFS budget for 1997-1998.	– Evolve workplan for 1997.

1996 WORKPLAN (Revised)

Area : Indonesia
Activity CFM (Mariculture)

55

No.	Activity	Country Inputs	BOBP Inputs
1.	<p>Awareness Building and Consultation with Stakeholders on:</p> <ul style="list-style-type: none"> — quality of environment in the Bay equals the quality of life of people around the Bay. — on factors that affect sustainability/profitability of mariculture. 	<ul style="list-style-type: none"> — Develop public campaign: <ol style="list-style-type: none"> 1. school children studying and documenting the Bay and how it affects the life of people 2. local radio programmes by DOF and local people on subject. 3. leading upto public campaign on a clean Bay around Citizens' workshop called by local government leaders. — extract information from TCDC and 'optimal culture' workshop/demo and use workshop/consultation to build awareness. 	<ul style="list-style-type: none"> — Assistance in conceptualization and planning. — training workshop for PFS/DFS staff on communications including awareness materials development. — assistance in conceptualization and materials development in staff workshop as above.
2.	<p>Facilitate sustainability of mariculture.</p>	<ul style="list-style-type: none"> — Workshop on optimal culture practises. — Identification of lead fishfarmers for demo/extn. — Demo of optimal culture in lead farmers' locations. — Training in site selection and optimal culture in lead farmers sites. — Design, develop and produce manual on optimal culture practice. — Design, plan and implement water quality monitoring scheme in Bay. — Analyse ODA data and information to identify useful information for BOBP-CFM activity and document. 	<ul style="list-style-type: none"> — arrange for TCDC consultant on culture practises. — assistance in conceptualization, design and planning. — BOBP to print publication. — provide portable water quality monitoring kit. — promote use of GIS software to PFS to facilitate planning (provided by ODA).
3.	<p>Preparatory activities for 1997:</p> <ul style="list-style-type: none"> — Analysis of seed capture practices. — Feasibility of alternate feed for mariculture of Groupers. 	<ul style="list-style-type: none"> — identify consultants/staff to undertake study. Plan activity. — plan activity to determine feasibility of identified alternate feeds and develop strategy for promotion. — based on study of seed capture/handling practices, design training programme and plan for activity. — evolve workplan for 1997. — incorporate government contribution to project into national budget of DGF and PFS for 97-98. 	<ul style="list-style-type: none"> — Develop TOR. — Literature search. — Identification of resource persons working on subject. — Evolve workplan for 1997.

1996 WORKPLAN (Revised)

Area : Indonesia

Subproject Objectives : CFM (Anchovy/Lift-net Fishery)

No.	Activity	Country Inputs	BOBP Inputs	Remarks
1.	Awareness building and consultation with stakeholders on the relationship between quality of product and earnings and the means to achieve quality.	<ul style="list-style-type: none"> – Workshop on quality quality improvement. – Training and demonstration of improved handling! storage on boats and on use of ice. – Workshop on on-shore processing quality improvement. 	<ul style="list-style-type: none"> – BOBP to arrange TCDC consultant on anchovy processing. – Assistance in conceptualization and planning. 	BOBP/FAO to help fund TCDC consultant. National execution.
2.	Consultations with stakeholders to better understand conflict with small-scale fishers and to generate solution options.	<ul style="list-style-type: none"> – Consultations with groups of stake-holders. – Development of activities for 1997 to address needs and concerns. – Incorporate government contribution to project into national budgets of DGF and PFS for 1997-1998. 	<ul style="list-style-type: none"> – Evolve 1997 workplan. 	National Execution.

1996 WORKPLAN

Area : Indonesia

Activity : CFM (Small-scale Fishers)

No.	Activity	Country Inputs	BOBP Inputs
1.	Consultations with stakeholders to better understand conflicts and solution options.	<ul style="list-style-type: none"> – Series of consultations leading to development of activities for 1997. – Incorporate Government contribution project into DGF and PFS budgets for 1997-1998. 	<ul style="list-style-type: none"> – Evolve 1997 workplan. – Assistance in conceptualization and planning. – Training of extension staff of DFSIPFS in mediation of consultation and problem analysis.
2.	Group formation of small fishers, to save, attract credit, improve money management and improve enterprise management.	<ul style="list-style-type: none"> – Initiate group formation using BOBP manual developed for Langkat area. – Initiate savings schemes for groups. – Plan for training of groups in credit management and enterprise management. 	

Country Report – Indonesia

Progress 1996:

The workplan for activities in the Tapanuli Bay area of North Sumatra can be broadly broken up into four areas of effort--general activities relating to coastal fisheries management, mariculture, anchovy fishing with lift-nets, and small-scale fisheries.

CFM (General)

Preparations were undertaken for the Regional Workshop on Precautionary Approach to Fisheries Management (PA2FM). The objectives, plan of operations, resource persons and their presentations, organization details and budget were discussed with member countries, FAO and DGF, Indonesia and agreed to. Cost-sharing for the Workshop was agreed to; costs will be **shared between BOBP** and DGF. The Workshop has been planned for 25-28 February 1996 and will be held in Medan, North Sumatra, Indonesia.

The National Workshop on Community-Based Fisheries Management which had intended to build awareness on and promote community-based approaches among fisheries staff of all 27 provinces of Indonesia had to be postponed due to fund unavailability. BOBP had hoped that savings from the FAO's Japan Trust Fund, which funded similar exercises in Bangladesh and Sri Lanka, would be forthcoming to support the exercise in Indonesia, but the savings were not enough to undertake the activity. BOBP intends to look for support to undertake the activity in the future.

To facilitate and enable participatory, community-based fisheries management, appropriate legislation and regulations will need to be framed and concerned institutions will need to gear themselves up to undertake necessary tasks. A study has been planned to review the institutions concerned with fisheries management-related project activities in the Tapanuli Bay area and the legal framework to facilitate participatory, community based management approaches. The terms of reference for the study were developed in consultation with **DGF and FAO**, resource persons to undertake the activity were identified and selected, and a contractual service agreement between the DGF and BOBP-FAO is in the process of being drawn up. The study *inter alia* will bring together the DGF, BOBP and other concerned government agencies, who are stakeholders in fisheries and integrated coastal zone management, at a one-day consultation; its deliberations will be incorporated into the final report to reflect the views and recommendations of all the government stakeholders from aV levels, from national through province to district levels. The study is expected to be completed by the middle of 1997.

The DGF and the PFS, in order to support national execution of the Project, have incorporated fund allocations into their annual budgets to cover necessary expenses, beyond the assistance available from BOBP.

The indicative workplan for 1997 was evolved out of discussions with the DGF and PFS, based on a review of progress in 1996, and is attached below for the consideration of the Advisory Committee of BOBP.

Mariculture, Anchovy Lift-net Fishery and Small-scale Fisheries

The activities during 1996 in these three sectors were of a preparatory nature.

The activities relating to improved management of cage culture of coral groupers in the Sibolga Bay – including awareness building and consultation amongst stakeholders, studies to better understand mariculture and impacts of other activities on it, and technical inputs toward sustainability – all centered on technical inputs by consultants. Those would provide a better understanding of the problems and give direction to future activities through knowledge and training inputs. BOBP, with help from the aquaculture section in the Fisheries Division of FAO, were unable to identify and assign consultants, partly because expertise in the area of hatchery practice and sustainable culture of coral reef groupers is scarce, and also because the expertise that exists is often of a proprietary nature and not freely available. Renewed efforts are under way to identify consultants and find other ways to build up the capacity of the fisheries staff and of aquaculturists in state-of-the-art practices.

Similarly, activities relating to improving the anchovy lift-net fishery centered on providing a consultancy input to improve the quality of the product both on board the crafts and on land. Here again BOBP had difficulty in identifying and assigning a consultant, and the search continues.

The activities relating to small-scale fisheries focussed on resolving conflicts of small-scale fishing with the anchovy lift-net fishery and mariculture. The difficulty in finding consultants and the interlinked nature of the three fisheries led **BOBP and DGF to wait until appropriate** consultants could be found, rather than begin the process of awareness building and consultation efforts with stakeholders with no mutually beneficial solution options in hand.

Assessment:

While the activities in North Sumatra were delayed due to difficulties in identifying and assigning consultants, considerable ground work was done, which has given BOBP and DGF a better understanding of the problems. The DGF is very interested in the progress of the activities and has given high priority to resolving the problems of mariculture, anchovy lift-net fishery and small-scale fisheries. It is hoped that the activity in future will gain momentum and make up for the time lost. Meanwhile, the study to review the institutional and legal framework to facilitate and enable fisheries management will give direction to future actions.

INDONESIA WORKPLAN FOR 1997

Subproject Objective : In the context of evolving model fishing villages to undertake community-based fisheries management, to facilitate and enable improved management of mariculture, anchovy lift-net fishery and small-scale fisheries in the Tapanuli Bay area of North Sumatra, through awareness building, strengthening of institutional capacity of concerned agencies and provision of technical assistance.

Activity CFM (General)

No.	Activity	Country Inputs	BOBP Inputs
1.	Plan activities for 1998.	<ul style="list-style-type: none"> – Plan activities for 1998. – Incorporate government contribution to project into DGF and PFS budget. 	<ul style="list-style-type: none"> – Evolve workplan for 1998.
2.	Translation and modification of Manual on Stakeholder Approaches to Fisheries Management.	<ul style="list-style-type: none"> – Initiate translation and editing. 	<ul style="list-style-type: none"> – BOBP to produce on completion in 1977 or early 1988.
3.	Preparation for: <ul style="list-style-type: none"> – National Workshop on Community Based Management. 	Co-operation and participation; locating national fund sources.	Conceptualize and design workshops; identify fund sources; develop prospectus; identify resource persons and initiate assignment; initiate development of materials.
4.	Review of Fisheries Management Related Regulations and Legislation.	<ul style="list-style-type: none"> – Complete 	

INDONESIA : Indicative Workplan for 1997.
 Activity CFM (Mariculture).

No.	Activity	Country inputs	BOBP inputs
1.	Awareness Building and Consultation with Stakeholders on: <ul style="list-style-type: none"> – quality of environment in the Bay equals the quality of life of people around the Bay. – on factors that affect sustainability/ profitability of mariculture. 	<ul style="list-style-type: none"> – Develop Public campaign: <ol style="list-style-type: none"> 1. School children studying and documenting the Bay and how it affects the life of people. 2. local radio programmes by DOE and local people on subject. 3. leading upto public campaign on a clean Bay around citizens' workshop called by local government leaders. – extract information from TCDC and 'optimal culture' workshop/demo and use workshop/consultation to build awareness. 	<ul style="list-style-type: none"> – assistance in conceptualization and planning. – training workshop for PFS/DFS staff on communications including awareness materials development. – assistance in conceptualization and matenals development in staff workshop as above.
2.	Facilitate sustainability of mariculture.	<ul style="list-style-type: none"> – Workshop on optimal culture practices. – Identification of lead flshfarmers for demo/extn. – Demo of optimal culture in lead farmers' locations, – Training in site selection and optimal culture in lead farmers Sites. – Design, develop and produce manual on optimal culture practice. – Design, plan and implement water quality monitoring scheme in Bay. – Analyse ODA data and Information to identify useful information for BOBP-CFM activity and document. 	<ul style="list-style-type: none"> – arrange for TCDC consultant on culture practices. – assistance in conceptualizatiOn, design and planning. – BOBP to print publication. – provide portable water quality monitoring kit. – promote use of GIS software to PFS to facilitate planning (provided by ODA).
3.	Preparatory activities for 1997: <ul style="list-style-type: none"> – Analysis of seed capture practices. – Feasibility of alternate feed for mariculture of Groupers. 	<ul style="list-style-type: none"> – identify consultants/staff to undertake study. Plan activity. – plan activlty to determine feasibility of identified alternate feeds and develop strategy for promotion. – based on study of seed capture/handling practices, design training programme and plan for activity. – evolve workplan for 1997. – Incorporate government contribution to project into national budget of DGF and PFS for 97-98. 	<ul style="list-style-type: none"> – Develop TOR. – Literature search. – Identification of resource persons working on subject. – Evolve workplan for 1997.

INDONESIA : Indicative Workplan for 1997.

Activity : CFM (Anchovy/Lift-net Fishery).

No.	Activity	Country Inputs	BOBP Inputs	Remarks
1.	Awareness building and consultation with stakeholders on the relationship between quality of product and earnings and the means to achieve quality.	<ul style="list-style-type: none"> – Workshop on quality improvement, – Training and demonstration of improved handling/storage on boats and on use of ice. – Workshop on on-shore processing quality improvement. 	<ul style="list-style-type: none"> – BOBP to arrange TCDC consultant on anchovy processing. – Assistance in conceptualization and planning. 	BOBP/FAO to help fund TCDC consultant. National Execution.
2.	Consultations with stakeholders to better understand conflict with small-scale fishers and to generate solution options,	<ul style="list-style-type: none"> – Consultations with groups of stakeholders. – Development of activities for 1997 to address needs and concerns. – Incorporate government contribution to project into national budgets of DUF and PFS for 1997-1998. 	<ul style="list-style-type: none"> – Evolve 1997 workplan. 	National Execution.

INDONESIA Indicative Workplan for 1997.

Activity : CFM (Small-scale Fishers).

No.	Activity	Country Inputs	BOBP Inputs
1.	Consultations with stakeholders to better understand conflicts and solution options.	<ul style="list-style-type: none"> – Series of consultations leading to development of activities for 1997. – Incorporate Government contribution to the project into DGF and PFS budgets for 1997-1998. 	<ul style="list-style-type: none"> – Evolve 1997 workplan. – Assistance in conceptualization and planning. – Training of extension staff of DFSIPFS in mediation of consultation and problem analysis.
2.	Group formation of small fishers, to save, attract credit, improve money management and enterprise management.	<ul style="list-style-type: none"> – Initiate group formation using BOBP manual developed for Langkat area. – Initiate savings schemes for groups. – Plan for training of groups in credit management and enterprise management. 	

Country Report: Malaysia

Objective:

Develop and implement a Special Area Management Plan (SAMP) for the Pulau Payar Marine Park and surrounding areas to promote the conservation and sustained production and use of the area's reef fisheries resources and habitats. Use the SAMP as a model for other marine park islands in Peninsular Malaysia, and to glean lessons learned to develop a national ICAM Framework.

Results 1994

Malaysia's situation analysis identified several key issues within the project area. These include general degradation of resources, particularly mangrove areas, corals and seagrass beds; overfishing; conflicts between artisanal and commercial fisherfolk; organic and inorganic pollution from industrial development; multi-use conflicts; and loss of fishing grounds. The analysis recommended a sustainable resource management approach to emphasize the importance of marine parks as productive ecosystems contributing to fisheries and biodiversity.

Status 1995

The project design evolved during the planning stage of the first year. Outputs included the design of a SAMP approach for the Pulau Payar Marine Park and surrounding areas to allow for focused management that integrates local community participation, multiple government agencies, and ecological components.

The SAMP management framework to develop and implement the SAMP began through a two-tiered process, comprising Tier I and II decision-making committees. The schedules and terms of reference for the committees were established. The Tier I Committee consists of the DOFM Aquatic Ecology Branch, Marine Parks Branch, Sector Planning Branch, and Resource Management Branch. The Tier I Committee was initiated in mid-1995 and worked closely, with the area stakeholders and State agencies to further assist in the project design, guide the scientific characterization studies, public outreach activities, and institutional review, and draft a skeleton SAMP. The skeleton draft SAMP is scheduled to be completed in May 1997. It will be used as a platform for discussion during the second tier, which begins in May 1997 with the establishment of the Tier II Committee. This Committee will have the same representatives as the Tier I but broaden direct representation to include the DOFM State agencies in Kuala Kedah and Penis, Universities (UPM and USM), fisherfolk, other area stakeholders, Ministries of Environment, Agriculture, and Forestry, NGOs including WWF.

A key task of the Tier I Committee for 1996 and 1997 is in guiding the scientific characterization activity. The findings are to be used throughout the SAMP process to illustrate the potential benefits of the Marine Park, when managed as habitat enhancement for fisheries

resources of the surrounding areas. The findings will form the basis for awareness materials that will be widely disseminated in area communities,

Key stakeholders have been identified and include fisherfolk (primary targets), industry and hotel owners, fish vendors and middlemen, landowners, and Langkawi area Port Authority and developers. The awareness activity objective has been developed; to create an understanding and acceptance among key stakeholders of the need for and benefits of integrated coastal resource management, to enable their collaboration in management as stewards of the local resources. The SAMP monitoring objective was developed; to observe whether the Marine Park and areas managed under the SAMP can increase or sustain fisheries resources in the Park waters and surrounding areas.

A five year Workplan of activities was developed. The Workplan is flexible, It lays out programme milestones for meeting the objectives, and is regularly reviewed and revised in light of new developments and findings from the Committee work. The five year Workplan is attached. Yearly workplans are developed based on the activities and milestones established in the five year Workplan. The revised 1996 Workplan is also attached.

Draft five Year Workplan for Malaysia's DOF/BOBP Phase III Project: Integrated Management of Pulau Payar Marine Park

ACTIVITY	1995	1996	1997	1998	1999
1. TrainingActivities a) Pursue avenues for DOF training. b) Identify fisherfolk who will be good candidates for training. c) Training of fisherfolk					
2. Local C/M Workshops in Kedah and Perlis.					
3. SpecialArea Management Plan (SAMP) for Pulau Payar Marine Park. a) Assessment of existing scientific data and areas for new studies. b) Assessment of legal/institutional framework, identification of gaps. c) Conduct additional studies required (eg. socio-economic survey) d) Assign BOBP resource person to assist in a&b preparation and review e) Determination of park carrying capacity f) Preliminary draft SAMP developed by Tier I committee. g) Establish Tier II Committee h) Tier II committee to establish consensus on objectives and issues. i) Final SAMP developed by Tier II committee,					
4. Implementation of Management Strategies in draft and final SAMP. a) Local Workshop to adopt final SAMP. b) Present to State EXCO for adoption and implementation. c) Develop education/Information materials based on quantitative information/scientific assessment. d) Dissemination of information, education and training of fisherfolk.					
5. Feedback and Assessment of Lessons Learned from SAMP Development and Implementation					
6. Proposal of the Need for a National ICAM Framework					

DOF/BOBP WORKPLAN FOR 1996

Geographic Area : Malaysia.

Programme Area : Integrated Management of Pulau Marine Park.

No.	Activity	Country Inputs	BOBP Inputs
1	Training Activities	Identify DOF candidates and co-financing — for training	Identify opportunities and funding for gaining experience in ICM. Coordinate the overall process
1.1	Pursue avenues for DOE training ICZM Course at CRC/URI and practicum, and	Co-finance and staff participation in preparation and activity Co-finance and staff participation in preparation and activity	Coordinate the process, select sites and CZM resource persons
1.2	Study Tour	Identify key fisherfolk in SAMP area for training	Resource person for training structure & materials development
1.3	Training in ecotourism skills for fisherfolk	Develop and co-fund training materials, conduct training	Co-funding for materials and training expenses
2	ICZM Workshop for consensus on Tier I SAMP	Complete Tier I draft SAMP and organize Workshop Co-funding for Workshop expenses	Resource person for Workshop. Planning and presentations Co-funding for Workshop expenses
3	Formulation of Special Area Management Plan	DOF lead in facilitating SAMP process	Resource person for process implementation
3.1	Determine ecobenefits for outreach materials	Assign staff to conduct scientific characterization	Resource person for characterization, quantification of benefits
3.2	Legal/institutional review	Assign staff to update existing review	Resource person for analysis and preparation of review
3.3	Determine Park carrying capacity	Contract and supervise WWF-Malaysia	Resource person for methodology and progress
3.4	Conduct socio-economic baseline assessment	Develop survey, organize field staff implementation	Resource person for survey development, funding alternatives
3.5	Establish Tier II SAMP drafting Committee	DOF Kedah/Pertis takes lead in finalizing SAMP	Resource person for process implementation
4	Early Implementation of Actions in SAMP	DOF lead in implementing early actions of SAMP	Resource person for process implementation
4.1	Apply carrying capacity to ecotourism Actions	Apply results to: number of guides; fee levy; etc	Advise in design of actions
4.2	Develop and disseminate information materials	Summarize eco-benefits and other assessments in simple language and local language	Information Services assist in material design, printing

Country Report: Malaysia

Progress 1996:

Malaysia is in its second year of developing the components of a Special Area Management Plan (SAMP) for Pulau Payar Marine Park and surrounding areas. The SAMP is currently being developed by the Tier I Committee together with advisory inputs from BOBP, to address the coastal area problems identified in the situation analysis, and by fisherfolk, other stakeholders and line government agencies during field site visits in 1995 and **1996**.

Activity 1: Training

DOFM arranged for key staff in SAMP development and implementation to undergo training in Integrated Coastal Zone Management (ICZM) in Rhode Island (RI), and visits to several ICZM field projects in RI during the training. This was followed by an additional site visit to Washington DC to national level agencies involved in ICZM implementation

Forty fisherfolk candidates have been identified for alternative livelihood skills training in ecotourism. A purpose of the training is to enable the fisherfolk to start their own businesses. Candidates for selection included low-income small-scale fisherfolk, fisherfolk between the ages of 20-35, and those fisherfolk who had engaged in illegal fishing. The programme for the first training session has been designed. Two separate components were planned to train the fisherfolk in ecotourist guiding; a diving course and a ecoguide/natural history course. The first training will take place in March 1997. Benefits include reducing illegal fishing within the marine park (a problem identified by fisherfolk during a site visit in 1995) and reducing fishing pressure on the resource.

Activity 2: Local ICZM Workshop for Tier II

Preparations for the ICZM Workshop are under way. The Workshop will be held in May 1997. Participants will include members of the Tier I and II Committees. The purpose of the Workshop is to present both an overview of the ICZM SAMP process and build consensus among the Tier II Committee representatives on the objectives and issues for management. The draft Tier I SAMP will be presented to the Tier II Committee. The Workshop will enable interactions with the managers, scientists, and public that will be members of the **Tier II** Committee and involved in SAMP finalization and implementation.

Activity 3: Formulation of the SAMP

1. The geographic area for management under the SAMP has been identified and includes the coastal areas of North and South Kuala Kedah, Langkawi, and the southernmost portion of Perlis, on the land side, and the waters and islands of the Pulau Payar Marine Park.

The methodology for conducting the scientific characterization studies was developed along with a description of activities, time frame and budget. The interactive approach to develop the study was a useful SAMP planning tool. It achieved consensus among the scientists in the DOFM Fisheries Research Institute (IPP), SAMP Tier I Committee managers and BOBP on the objectives and application of the scientific work under SAMP. The early findings and results are being applied directly to management issues by a diverse team of managers, scientists, and stakeholders under the SAMP framework. Each component of the study is interlinked and the results will be analyzed in a separate report as a future 1997 activity to indicate probable cause and effect of the problems to be addressed in the SAMP.

Five DOF staff from the IPP are conducting the scientific characterization work. The early findings will be presented at the ICZM Workshop in May 1997. The Ecological and Resource Branches of IPP are coordinating the study and expanding the set of indicators typically used in the ecological studies. The ongoing results of this work, together with the institutional review and socio-economic survey, will form the information base used by the SAMP decision-making committees for development of management actions under SAMP.

Components of the ongoing characterization study to measure change in a variety of parameters over time include status and trends of key fisheries species; impact of human activities (visitor carrying capacity); and monitoring of ecological indicators. In addition to forming an important component of the information base for determining potential management actions in the SAMP, these studies will also establish a baseline for future monitoring of the same parameters throughout SAMP development and implementation.

An early draft report of the visitor - carrying capacity activity is complete. The final report is scheduled for completion in early 1997. The findings will be presented at the ICZM Workshop together with findings of the other characterization activities. The results of the activity will help provide information for many potential SAMP management measures, including possible visitor fees to fund other SAMP actions and numbers of fisherfolk for entry into ecotourism livelihoods and further training.

A socio-economic baseline study for the SAMP area was developed and translated into Bahasa Malaysia. It complements the scientific study by providing measurements of change in area communities with SAMP implementation. The study began in late 1996 and early findings will be presented at the ICZM Workshop in 1997.

The SAMP development and implementation schedule was revised in the 5 year Workplan as attached. The 5 year Workplan has been a useful planning tool for the DOFM Tier I Committee and milestones set at the earlier stages of SAMP planning provided useful targets for meeting objectives while also being adaptive to change.

FIRST DRAFT DOFM/BOBP WORKPLAN FOR 1997

Geographic Area Malaysia.

Programme Area : Integrated Management of Pulau Payar Marine Park

No.	Activity	Country Inputs	BOBP Inputs
1. 1 1.2	Training Activities Pursue Avenues for DOFM training Training in ecotourism skills for fisherfolk	Identify DOFM candidates for training and co-financing Finalize materials. Conduct training	Identify opportunities and funding. Coordinating the process. Resource person for materials development. Co-funding.
2.	ICZM Workshop for consensus on Tier I SAMP	Finalize draft SAMP, co-fund and organize workshop	Resource person for planning and presentations. Co-funding.
3.	Formulation of SAMP Scientific characterization studies. Socio-economic studies Legal/Institutional review Establish Tier II SAMP Committee	DOF lead in facilitating process Compile draft findings for presentation at Workshop. Compile draft findings for presentation at Workshop. Compile draft findings for presentation at Workshop. Finalize membership, establish chair of Committee.	Advisory inputs and funding support Advisory inputs, and funding support Advisory inputs, and funding support Advisory inputs, and funding support. Resource person for process implementation
4.	Early implementation of SAMP Actions	To be determined after completion of Tier I SAMP and ICZM Workshop	Resource person for process implementation.
5.	Develop and disseminate information materials	Glean key findings of scientific characterization, into format for outreach materials	Advice and information services assistance.

Country Report: Maldives

Objective:

The project proposes the development of an Integrated Reef Resources Management (IRRM) model for the Vaavu, Dhaalu, Meemu, Faafu Atolls, using a participatory and consultative approach with the fisherfolk to improve the welfare of the fisherfolk communities and sustainability of the reef fishery resources.

Results 1994

Maldives determined that the MOFA/BOBP Third Phase project would be implemented in the same geographic area as the MOFA/BOBP Second Phase activities. This added continuity to the project, and an opportunity to build on earlier work of MOFA and BOBP in the four Atolls. Activities conducted by the Marine Research Section (MRS) in the targeted atolls have prepared the communities for participation in the IRRM Programme. These earlier efforts have also helped to identify the five issue areas for the management of the resources.

- 1) Reef Fish Fishery (main area of concern: export-oriented grouper & aquarium fish trade)
- 2) Baitfishery for tuna pole and line fishery (reef-related component of the tuna fishing fleet)
- 3) Coral mining
- 4) Tourism/fishery interactions
- 5) Comprehensive management of the resources

Status 1995 - March 1996

The groundwork for IRRM implementation was established during this period. Visits to the project site and to multiple government agencies generated an understanding of IRRM objectives. During one field visit to Vaavu Atoll, a special Atoll Committee meeting was held with a larger representation of fisherfolk. The IRRM objectives, issues and potential management measures discussed at the meeting confirmed the fisherfolk's interest in participating in decision-making that affects their reef resources. During another extended field trip to all four Atolls, four staff of MOFA were trained in undertaking stakeholder identification, stakeholder analysis and stakeholder communication and perception analysis.

MOFA and BOBP activities focused on the planning and implementation of the IRRM Workshop held from 16-20 March, 1996. Documents produced for the Workshop for the purpose of building awareness of the IRRM concept, vision, and issues for management included a prospectus and brochure. Target groups of the awareness documents included multiple sectors of government, public and private sectors. Other documents completed for the Workshop include guidelines for authors, roles and responsibilities for resource persons, and instructions for breakout sessions.

The IRRM Workshop was successful and achieved its purpose—to unify IRRM objectives and establish a consensus-based implementation strategy for a more holistic approach to reef management. The implementation strategy provides for integration, of fisherfolk knowledge with the results of scientific characterization, and the expertise of all relevant ministries with jurisdiction in the areas impacting the reef resources. The 1996 Workplan is attached.

MOFAIBOBP WORKPLAN FOR 1996

Geographic Area : Maldives.

Programme Area : **Integrated Reef Resources Management (IRRM)**

No.	Activity	Country Inputs	BOBP Inputs
1. 1.1 1.2	Conduct tRAM Workshop Document Workshop outputs Review and finalize Workshop recommendations	Organize planning, resource persons, secretariat Co-draft Workshop outputs Organize recommendations into tRAM Action Plan.	Advisory: technical planning, technical editing of papers Co-draft Report, Technical Editor for report & proceeding Advise in organising implementation framework, Action Plan
2. 2.1 2.2 2.3 2.4	Preparation Activities for IRRM Atoll and Island level implementation Consider focusing activities in Vaavu Atoll for first 6 months as a pilot area Identify key leaders in Atoll to assist process Prepare materials for Atoll implementation Reprint Reef Resources Management Handbook	Coordination to obtain inputs from all relevant Ministries and sectors Obtain general consensus of Agencies Follow-up and work with identified key implementators Translate RAM Workshop materials Into Dhivehi Printing and Organization	Advisory in approaches, key elements of framework and Action Plan implementation Advisory inputs, where necessary Advice and assistance in training of key implementators, process. Assistance in Information Services and printing.
3. 3.1	Atoll and Island Level Implementation Field trip to establish ARM process, framework, (a) conduct meetings in Atoll to reach consensus on an adaptive management framework (b) establish membership of committees, roles and responsibilities for individuals. (c) framework session to prioritize recommendations for action (d) arrange schedule of prioritized actions and commitments for implementation	Organize logistics and materials Facilitate and lead meetings, Identify key stakeholders at Atoll and island level, and help to ensure that they are represented in framework.	Resource person(s) for presenting approach! framework options Help to identify follow-up required as next step to ensure sustainable framework and potential areas of concentration of MRS in its support to the framework or process. Develop strategy for involving the continued participation of local-level government officials and bridging the gap between government and stakeholders
4.	Document existing knowledge of marine resources and management systems, in order to provide a sound foundation for IRRM	Identify local candidate for conducting assessment	Co-fund local expert, review and advise on methodology.

Country Report: Maldives

Progress 1996:

Activity 1: IRRM Workshop and Follow-up

1. The 5-day IRRM Workshop was held in March 1996. The unified perspective and objectives of the Ministries and private sector representatives, as well as knowledge of the five identified issue areas for management developed over the preparation phase of 1995, were demonstrated by the discussions and presentations. The strong interest in IRRM that had been built up from the work with the line Ministries in Workshop planning sessions and through the distribution of IRRM materials helped to achieve strong participation from Ministries in compiling Ministry papers, presentations and commitment to the Workshop.

2. Participating Ministries, in addition to MOFA included: Ministry of Planning, Human Resources, and Environment (MPHRE), Ministry of Tourism; Ministry of Atoll Administration; and the local level of the Atolls Ministry (Atoll Chiefs); Customs Office; Ministry of Information and Culture; Ministry of Education; Ministry of Construction and Public Works; Department of Public Health; and Ministry of Trade & Industries; as well as the Attorney General's Office. Representatives from all fisheries, tourism, and reef related industry professions attended. Strong participation was received from public interest groups and the private sector, particularly during the discussion sessions.

3. Unique aspects of the Workshop included the addition of concurrent student (ages 14-18) working sessions during the afternoon breakout sessions focused on each issue area. Working groups of school children who would present their recommendations at the last day, along with the other working groups. This also was a successful part of the Workshop, and the working group of school children (ages 14-18) had developed good recommendations for IRRM education within the schools and also what they could do themselves to implement IRRM.

4. The immediate outputs of the Workshop included a draft report containing specific recommendations for each issue area, and Workshop proceedings. These recommendations were subsequently used to develop planning documents for the IRRM Project, including: (a) list of high priority actions required over the next year to follow-up on the Workshop recommendations. These activities became the MOFA/BOBP Workplan for IRRM implementation; (b) a draft collaborative management plan that pulls out the common themes, or those recommendations which would help to resolve more than one of the issue areas. The organization of this draft plan groups recommendations by issues, and roles and responsibilities at the National, Atoll, and local community level; and (c) development of a draft IRRM implementation framework.

5. Technical editing of the Collaborative Management Plan and **IRRM planning documents** is complete and these documents will be published jointly by Government of Maldives and BOBP early 1997. Editing of the Workshop proceedings is under way.

Activity 2: Preparation Activities for IRRM Atoll and Island level Implementation

IRRM Workshop recommendations and abstracts of the papers are translated **into Dhivehi** to prepare for **IRRM** implementation in the Atolls.

Activity 3: IRRM Atoll and Island level Implementation

An unexpected event resulted in cancellation of the field trip to establish the IRRM process. During 1997, activities will be targeted towards setting up adaptive management frameworks for IRRM at the island level and within each Atoll.

Activity 4: Document existing knowledge of marine resource and management systems

The local candidate to conduct the activity has been identified, and will be available in 1997 to begin.

The draft 1997 Workplan is attached.

FIRST DRAFT MOFAJBOBP WORKPLAN FOR 1997

Geographic Area : Maldives

Programme Area : Integrated Reef Resources Management (IRRM)

76

#	Activity	Country Inputs	BOBP Inputs
1.	<p>Atoll and Island Level Implementation Field trip to establish IRRM process and framework.</p> <p>(a) conduct meetings in Atoll to reach consensus on an adaptive management framework.</p> <p>(b) establish membership of committees, roles and responsibilities for individuals,</p> <p>(c) framework session to prioritize recommendations for action.</p> <p>(d) arrange schedule for prioritized actions and commitment for implementation.</p>	<p>Organize logistics, materials</p> <p>Facilitate and lead meetings, identification of key stakeholder at Atoll and island level, and help to ensure that they are represented in framework.</p>	<p>Resource person(s) for presenting approach! framework options.</p> <p>Help to identify follow-up required as next step to ensure sustainable framework and potential areas of concentration for MRS in its support to the framework or process.</p> <p>Develop strategy for involving the continued participation of local-level government officials and bridging the gap between government and stakeholders.</p>
2.	<p>Document existing knowledge of marine resources and management systems, in order to provide a sound foundation for IRRM.</p>	<p>Identify local candidate for conducting assessment.</p>	<p>Co-fund local expert, review and advise on methodology.</p>
3.	<p>Identify other IRRM recommendations in Draft Collaborative Management Plan for 1997 implementation.</p>		

Country Report: Sri Lanka

Objective:

In the context of conservation of critical aquatic habitats such as coral reefs, lagoons, mangroves, sea grass beds and estuarine systems and sustainable resources utilization from such habitats, to facilitate and enable improved management of the ornamental fish sector of Sri Lanka, through awareness building, strengthening the institutional capacity of concerned agencies and provision of technical assistance.

Status March 1996:

In 1994 the Department of Fisheries and Aquatic Resources (DFAR) with assistance from the National Aquatic Resources Agency (NARA) undertook a situation analysis of coastal fisheries of Sri Lanka in order to identify and prioritize fisheries problems and concerns whose management could be considered for BOBP assistance, during its third phase. The situation analysis, which proposed that the management of the fisheries that targeted ornamental fish for live export be improved with the assistance of BOBP, was discussed at a regional workshop in Madras and submitted to the Advisory Committee of BOBP, at its meeting in Jakarta in January 1995, for its consideration, and was approved.

The government is concerned about the conservation of sensitive and vulnerable ecosystems which are fished for ornamental fish and ornamental fish resources. It should also protect the fishers who are employed by the sector and the valuable foreign exchange that the export of ornamental fish earns, has committed itself to improving the management of the ornamental fish sector, and has set in motion the development of rules and regulations to better manage the sector. The government expressed its interest in evolving and promoting management measures which have the support and participation of the stakeholders, involved in the sector. It also wished to improve its understanding of the biology and population dynamics of the concerned species and the economic structure of the industry, and to develop a participatory monitoring system to facilitate the management process.

Early in 1995 the Ministry of Fisheries and Aquatic Resources Development (MFARD) designated DFAR and NARA as the primary agencies responsible for the implementation of BOBP assisted activities. In support of national execution the BOBP-assisted activity has been incorporated by MFARD into the National Fisheries Development Plan of Sri Lanka 1995-2000. and the government has earmarked a budget into the Fisheries Plan to facilitate its implementation. During several visits, BOBP staff held discussions with their government counterparts and with selected stakeholders of the ornamental fish sector in order to better understand their perceptions of their concerns and problems.

Four staff from NARA were provided training in undertaking stakeholder identification, stakeholder analysis, stakeholder perceptions and communications analysis. The stakeholder

studies could not be undertaken partly due to the situation prevailing in the country and partly due to staff preoccupations with other government priorities. Preparatory work was initiated to develop identification guides in the form of laminated cards, posters and ring-bound catalogues of ornamental fish species whose export was either banned or restricted, in order to facilitate enforcement and to build awareness.

With a view to bring stakeholders together to better manage their resource, a one-day workshop was held with selected non-governmental agencies who are concerned with the ornamental fish sector and the environment. An important outcome of the meeting was an in-principle agreement by the NGOs to actively participate in the processes to facilitate and enable improved management of the sector. BOBP also evolved a working relationship with the Darwin Initiative and the Marine Conservation Society of the UK. The latter have an on-going activity with NARA which also addresses the management needs of the ornamental fish sector. Ties with these two organizations will promote closer cooperation and avoid duplication of efforts.

BOBP assisted FAO in developing a project proposal on “Development of Integrated Fisheries Resources Management in Sri Lanka”, as a follow-up to a National Workshop on Community-Based Fisheries Management which was held in Colombo in 1994. A workshop on Research Prioritization in Fisheries was conducted for MFARD, DFAR and NARA staff around a presentation by the Programme Coordinator. The activities of the year and discussions with BOBP’s counterparts helped to evolve a detailed 1996 workplan, which was presented to the 20th Meeting of the Advisory Committee of the **BOBP**, held in Langkawi, Malaysia, in March 1996.

Revised Workplan for 1996:

The Advisory Committee of BOBP while agreeing to the proposed 1996 Workplan in-principle, recommended that it should be refined, modified and finalized by the project in consultation with their counterparts prior to implementation. The Committee, given the national execution thrust of the project, also recommended that the workplan should clearly indicate the responsibilities of national agencies and the BOBP in implementation.

The 1996 Workplan which emerged out of the discussions and was used to give direction to the project during the period April 1996 to January 1997 is shown below.

1996 WORKPLAN (Revised & Final)

Area : Sri Lanka

Subproject Objectives In the context of conservation of critical habits and sustainable utilization of resources from such habitats, to facilitate and enable improved management of the ornamental fish sector, through awareness building, strengthening of institutional capacity of concerned agencies and provision of technical assistance.

No.	Activity	Country Inputs	BOBP Inputs
1.	<p>Awareness building and consultations among stakeholders on:</p> <ul style="list-style-type: none"> – Status of fishery, issues and concerns, need for management and approaches to management. – Participatory monitoring enforcement of regulations. 	<ul style="list-style-type: none"> – Organize consultations with groups of stakeholders to identify problems and issues and to promote coming together to manage the fishery. – Prepare artworks of ornamental fish on banned and restricted list of Act and include local and scientific names to develop identification catalogue cards. – Extension/distribution of cards to various stakeholders groups including customs and drivers. 	<ul style="list-style-type: none"> – Training DOFINARA staff in consultation-mediation and participatory management. – Finalize artwork and assign printing production of identification cards. – Provide Fishbase CD-ROM plus additional hardware to MFARD to run Fishbase Programme.
2.	<p>Review and documentation of existing data and literature on Sri Lanka Ornamental Fisheries.</p>	<ul style="list-style-type: none"> – Identify consultant or research staff to undertake review and documentation. – Evolve research/study strategy to fill gaps in knowledge. 	<p>Assistance in design of strategy and partial support of study (if necessary).</p>
3.	<p>Consultations with stakeholders to identify needs and concerns of industry and to develop strategy and plans to address needs.</p>	<ul style="list-style-type: none"> – Consultations with stakeholder groups leading up to national consultation in 1997. – Incorporate GO SRL contribution into national fisheries budget for 1997-1998. 	<ul style="list-style-type: none"> – Evolve 1997 workplan from output of items #2 and #3.

Country Report: Sri Lanka

Progress 1996:

Activity 1: Awareness building and consultation with stakeholders on:

- status of ornamental fishery, issues and concerns, need for management and approaches to management
- participatory monitoring and enforcement of regulations

1. Prior to meeting groups of stakeholders and bringing together different stakeholders, several meetings were held by BOBP staff with selected stakeholders, including divers who collect the ornamental fish, breeders of freshwater ornamental species, exporters, government agencies concerned with export promotion, trade and environment. These meetings provided a better understanding of their perceptions of concerns and problems and several ideas of solution options also emerged. The discussions helped in the identification of common perceptions and aspirations such as the need to sustain the habitats and fish resources, around which stakeholders could be brought together.

2. Based on the regulations issued by MFARD, and gazetted by the Government of Sri Lanka, which specify the species of ornamental fish whose export is either banned or restricted, a series of identification catalogues were designed including waterproof cards, posters and a ring-bound book. Illustrations of all the species whose export is restricted or banned were collected, some from existing documentation, and twenty three illustrations were contracted to a local diver/artist. NARA and DFAR prepared all the information to accompany the illustrations. Printers were identified and discussions held regarding the production. The final production awaits MFARD's efforts to get the regulations, which were issued under a previous fisheries legislation which has since been superseded by the Fisheries Act No.2 of 1996, newly passed by Parliament and gazetted afresh.

3. BOBP acquired "Fishbase", a database of fish species produced on CD-ROM by ICLARM and FAO. and made it available to DFAR to facilitate their identification and management efforts.

Activity 2: Review **and documentation of existing data and literature on Sri Lankan Ornamental Fisheries.**

1. Given that the state of knowledge of the situation and trends of ornamental fish resources and their habitats is sparse, DFAR gave high priority to a study which would collect published and grey literature on the subject and add to it local knowledge, where available. DFAR identified scientists who could undertake the task and shortlisted them for detailed discussion. BOBP in consultation with DFAR has identified a Sri Lankan scientist working as a teacher in the University of Colombo, who is also a keen environmentalist and a diver, Dr S U K

Ekaratne and assigned him the task of undertaking the study. The study is expected to be completed over a six-month period and will give direction to both research and management efforts.

Activity 3: Consultations with stakeholders to identify needs and concerns of industry and to develop strategy and plans to address needs.

1. A two-day Orientation Workshop on Fisheries Management was organized which brought together all middle and senior staff of MFARD and associated agencies, including all staff from District Fishery Extension Officers all the way up to the Secretary to Government, MFARD. The workshop helped the group through paper presentations, case studies and discussions to familiarize themselves with fisheries development and management issues and concerns, and through such awareness hoped to facilitate the process of management. A case study on the ornamental fish sector helped focus the discussion on the project's efforts and to help evolve strategy.

2. Given that at least 15 different government ministries, departments and agencies are involved in either promoting or regulating the ornamental fish sector and the habitats where these are collected from, a consultation will be held in January 1997, to develop ways of cooperation and coordination to ensure a more holistic approach to managing the ornamental fish sector. It is hoped that the consultation will add to the momentum of improving management and facilitate it through better coordination. The output of the meeting will be reported at the Advisory Committee Meeting in February 1997.

3. In discussion with BOBP's counterparts an indicative workplan for 1997 has been developed, which will be further refined and modified based on the output of the government stakeholder consultation, the output of Dr Ekaratne's review and the other stakeholder meetings planned early in the year. The 1997 Workplan is attached below for the consideration of the Advisory Committee of BOBP.

4. As the Workplan crystallizes, BOBP in consultation with DFAR and MFARD, will develop budgets for DFAR and its cooperating agencies, which will be submitted to MFARD who will allocate the necessary budget to facilitate national execution.

Assessment:

The prevailing situation in Sri Lanka which has not only resulted in disruptions of work and delays but has also drastically affected fund availability to our counterparts, is the most obvious reason for delays in implementating project activities. The other concern is the acute shortage of adequately trained officers, particularly in sections concerned with management. While efforts at building capacity are on-going, the very act of training often deprives the agency of necessary staff during the periods of training. However, given the government's concern with fishery development and resources and with the sustaining of the habitats which are home for the resources, it is fair to expect that the concern will translate into policy and action.

SRI LANKA : Indicative Workplan for 1997

Activity : In the context of conservation of critical aquatic habitats and sustainable utilization of resources from such habitats, to facilitate and enable improved management of the ornamental fish sector, through awareness building, strengthening of institutional capacity of concerned agencies and provision of technical assistance

No.	Activity	Country inputs	BOBP inputs
1.	<p>Awareness building amongst Stakeholders on</p> <ul style="list-style-type: none"> - Status of fisheries, issues and concerns, need for management and participatory approaches to management. <p>Consultations with Stakaholders to identify needs and concerns of sector and to develop strategy, plans and action to address needs.</p>	<ul style="list-style-type: none"> - Issue regulations regarding export ban and restriction on selected ornamental fish species under Fish-ones Act, 1996. - finalise development and produce ornamental fish identification cards, posters and ringbound catalogue as per above regulations. - develop and produce comic book on conservation and safety for drivers and collectors or ornamental fish. - develop and produce travelling exhibitions(2) to promote conservation, improved management and safety for divers/collectors of ornamental fish and coastal communities. - promote media compaign to build awareness amongst general public on habitat conservation and improved management of ornamental fish. - organize and hold consultations amongst: <ul style="list-style-type: none"> - concerned government agencies - divers and collectors - exporters and breeders - non-governmental agencies 	<ul style="list-style-type: none"> - Assistance in development of strategy, planning and implementation through consultation, technical advice, facilitations and financial support. - Training of selected DFAR/NARA staff on stakeholder approaches to management, communication campaign design, planning and management, and mediation of consultation and negotiations. - Undertake development of Institutional strengthening plan in close cooperation with UNDP National Project and DFAR/MFARD on the basis of recommendations of Skill Gap and Training Assessment Study (see under Regional Activities). - Discussons with MFARD to facilitate incorporation of GOSRL contribution into national fisheries budget to enable national execution of CFM/SRL. - Evolve 1998 Workplan.
2.	<p>Studies and applied research to fill knowledge gaps and to evolve approaches to improved management through.</p> <ul style="list-style-type: none"> - review and documentation of status and trends of ornamental fish resources and habitats. - SWOT study of exporters/breeders to suggest measures to improve performance and sustainability of sector. - study to develop and design participatory data and information gathering system for ornamental fish sector to facilitate improved management. 	<ul style="list-style-type: none"> - Complete study initiated in 1996 and evolve research strategy to fill gaps in knowledge. - develop industry co-financed research scheme. - facilitate study of industry with financial support from industry association. - facilitate design and development and participatory/information system with Industry support. 	
3.	<p>Promote formation of Management Advisory Committee for Ornamental Fish Sector to facilitate and enable improved management of sector.</p>	<ul style="list-style-type: none"> - Organize national stakeholder consultation to explore and promote Management Advisory Committee for Ornamental Fish Sector. - develop and issue appropriate regulations under Fisheries Act to facilitate participatory management using MACs. 	

Country Report: Thailand

Objectives:

Establish a sustainable and participatory community-based fisheries management approach for improved management of Phang Nga Bay's fisheries resources and supporting habitats.

Results **1994**

Thailand's situation analysis identified the issues both within and outside of the fishing sector that are influencing fisheries management in Phang Nga Bay. These include utilization of harmful fishing methodologies, reduction in demersal catch, overexploitation of both pelagic and demersal fisheries, changes in species composition, enforcement, degradation of fisheries habitat, pollution caused by sedimentation, increased nutrients and industrial sources, conflicts between small-scale and large-scale fisherfolk.

Status 1995 – March **1996**

The first year of the DOF/BOBP Third Phase saw development of the objective, design and early implementation of a Community-Based Fisheries Management (CBFM) Project in Phang-Nga Bay. The project responds to the issues identified in the situation analysis. Activities were identified to implement CBFM and are listed in the attached 3-year Workplan. The Workplan covers the first 3 years of the project—to synchronize with Thailand's 3-year planning cycle.

The following activities listed in the 3-year Workplan were completed: (1) Define Initial Area (3) Obtain Consensus on Management Objectives (4) Identify and Obtain Consensus on Village Fishery/Coastal Resource Problems, and (5) BOBP/DOF CBFM Workshop.

Site visits identified key fisherfolk leaders for representation and participation in the CBFM, initial geographic area and issues for management. The initial area for management was defined as II villages on the eastern side of the Bay. However, the DOF/BOBP CBFM Workshop conducted in February 1996 generated enthusiasm among neighboring villages in the Bay and the project area was expanded to include the CBFM of the entire Bay.

The DOF/BOBP CBFM Workshop unified the goals, objectives and activities and recommended priority early actions for the CBFM Project--Workshop highlights are found in *Bay of Bengal News*, VOL. II No. 2. Participants included fisherfolk, village leaders, government officials, NGOs, universities, BOBP, and FAO. It was the first time that the fisherfolk met with government officials to plan fisheries management. In addition to DOF, NGO, University, BOBP and FAO presentations, fisherfolk presented current issues and problems they are facing, and initiatives begun to address the issues. Scientists shared results of their work. An interesting finding was the consensus among the fisherfolk and government scientists on the problems and potential causes.

Annual Report 1996 and Workplan 1997 (continued)

Detailed activities for 1996 implementation were developed to reflect the Workshop consensus and recommendations. CBFM is an adaptive process. The participants determined that a continuous review and evaluation of progress would be a part of the process, to redirect and add activities if needed, to better satisfy the objectives. The 3-year Workplan and 1996 Workplan follow.

Draft Three Year Workplan for Thailand's BOBP Phase III Project : Community-based Management in Phang Nga Bay.

ACTIVITY	1995	1996	1997	1998
Definite Initial Area: a) select a fishing ground (FG). b) consult with all villages using the FG. c) obtain committment of villages				
2. DOF as Advisor on Town Committee.				
3. Obtain Consensus on Management objectives.				
4. Identify and Obtain Consensus on Village. Fishery/Coastal Resource Problems.				
5. BOBP/DOF National Workshop				
6. Develop a long-term TURF policy; a) stock assessment to determine MEY. b) use MEY to devise zoning plan.				
7. DOF internal workshops/training activities.				
8. Develop Management Strategy (Solutions) for Each Problem. See Awareness Strategy for an "Early Action" Strategy.				
9. Implement Strategies.				
10. Develop Monitoring Plan for Each Strategy using scientific and Economic Indicators.				
11. Implement Monitoring Plans.				
12. Periodic Evaluation.				

DOFIBOBP WORKPLAN FOR 1996

Geographic Area : Thailand.

Programme Area : Community-based Fisheries Management (CBFM)

No.	Activity	Country Inputs	BOBP Inputs
1	Conduct CBFM Workshop	Co-organize: resource persons, secretariat staff, etc	Provide technical coordination, advice, documentation
1.1	Document Workshop outputs	Provide translators, rapporteurs, reviews and papers	Draft Report, technical editing and publication.
2	Ecosystem Management Training for DOF staff	Prepare materials for participation in course; cost share	Provide funding opportunities, organize study tour
3	Establish Management Training for DOF staff	Coordination to obtain input from all sectors in all steps	Advice in approaches, key elements of framework
3.1	Establish local level "fishfolk groups" Training and Grouping to develop livelihood — Coastal resources training courses — Provide information for decision-making — Establish a supporting information and database to transfer information to fishing communities	Assist fisherfolk in organising groups, participate in meetings DOE overall coordination, logistics, select participants DOF/NGOs select initial villages. Course planning PMBC supports research needs of communities	Advisory inputs, documentation Advisory inputs, training and funding support Course planning, resource person for training Resource person for analysis, presentation approaches Initiate draft set of needs from Workshop report and proceedings. Identify alternative mechanisms, funding support
3.2	— Outreach/training materials develop Establish provincial and regional level framework	Summarise needs and organise mechanism. Obtain commitments from PMBC, Univ's, NGOS, AFDEC Assessment of benefits re: artificial reefs, ban Kasetsart U. and DOF begin identifying structure.	Resource person for analysis, presentation approaches Advisory inputs, documentation
4	Clarify and define "coastal fishing rights"	Develop draft criteria with fisherfolk	Advice, information and outreach materials on definition
5	Define geographic area to be Included	Assessment of the fishing groups, communities	Advice, information on assessment and documentation
6	Early Action on the priority issue areas	DOF/stakeholder participation in developing	Identification of alternative approaches (ie economic incentives)
6.1	Resource management & rehabilitation Seeds releasing Mangrove replanting Establish zoning scheme	Seeds from DOF. DOF to organize village participation Select area of 50 Rai within each village. Review uses of area, develop resource map of area	Assist in promotion of activity, documentation of results Assist in promotion of activity, documentation of results Training on resource mapping. Publish maps when complete
6.2	Develop approaches for enforcement of ban: (a) Conservation and Surveillance; (b) Conservation Campaign	Provide enforcement officer, boat Organize conservation training course. Develop course materials, including benefits of the early actions (ie. bans, resource, mgmt. initiatives, artificial reefs, etc.) Develop posters, video and outreach materials Utilize information and database developed under Activity 3.1 for inputs into fishery newsletter and radio transmissions	Training on assessment approach. Advise in assessment and glean key findings for course materials Resource person for training Advice, support from information services
7	Periodic evaluation	Coordinate with key fisherfolk and develop a feedback mechanism for local level impact of actions	Assist under M&E funding mechanism to evaluate actions

Country Report: Thailand

Progress 1996:

Implementation of CBFM in Phang-Nga Bay expanded in 1996 after the DOFIBOBP CBFM Workshop. The DOF/BOBP Workplan for 1996 lists the 7 activities identified for 1996. Progress described below follows the 1996 Workplan activities.

Activity 1: Conduct CBFM Workshop

1. The DOF/BOBP Community-Based Fisheries Management (CBFM) Workshop was held in February 1996. (see Status 1995 - March 1996, above) Fifteen technical papers were presented at the Workshop, and fisherfolk experiences in management initiatives were presented and discussed at several sessions. These are contained in the Workshop Report and Proceedings.
2. The English language version of the Workshop Report was finalized. Finalization of Workshop Proceedings will be complete in early 1997. Format and design of the Proceedings was developed. The Workshop report and proceedings will be published by BOBP early 1997.
3. The Thai language version of the Workshop report and abstracts were printed and distributed to fishing villages of Phang-Nga Bay, DOF staff, BOBP and FAO RAP.

Activity 2: Ecosystem

Management Training for DOF staff

1. Five individuals who have key roles in implementing CBFM completed a two - week training in ecosystem management at the international workshop 'Creative Approaches to Managing Bays and Estuaries' in Sarasota, Florida, US. Topics included consensus-building; inter-disciplinary teamwork; public participation; completion of case studies that identified issues for management, development of objectives, strategies for actions and solutions, and evaluating progress. A site visit to the Baratarria-Terrebonne National Estuary Programme (NEP) and the Puget Sound NEP enabled the individuals to gain practical experience in ecosystem management approaches. Funding for the study tour was provided by US sources and an NGO. Reports of the experience were drafted by the study tour participants and sent to BOBP and the donors.

Activity 3: Establish CBFM Management Framework

1. Building fisherfolk groups as the local-level CBFM management structure was identified at the Workshop as an important activity for early implementation. CBFM fisherfolk groups or working committees were established in over 10 villages in the Bay. The role of the working committees was determined, and committees were selected through votes in each village.

2. Furthering the livelihoods of fisherfolk within the villages is another activity identified at the CBFM Workshop to strengthen fisherfolk groups. Training in boat engine maintenance and repair was given to 20 fisherfolk in Ban Bang Can, one of the ten villages with an established working committee.

Activity 4: Clarify and define 'coastal fishing rights'

I. Activities in 1996 have provided preliminary information for a definition that is most suitable for use within the context of CBFM in Thailand. This activity will conclude in 1997.

Activity 5: Define geographic area to be included

1. All CBFM participants agreed that the geographic area for the Project encompasses the entire Bay and coastal communities.

Activity 6: Early Action on the priority issue areas

1. Early actions for CBFM implementation during the remainder of 1996 were identified during the CBFM meetings every two months (ie. bi-monthly) with DOF, NGO, and the village CBFM working committees of Phang-Nga Bay. These include: (a) resource management and rehabilitation; and (b) the development of approaches for enforcement of the push net and trawl ban.

2. Actions in resource management and rehabilitation included releasing *Penaeus spp.* in five villages of the Bay. From 100,000 to 200,000 larvae were released in each village. This activity is ongoing and is being rotated between Bay villages.

3. Mangrove and seagrass area rehabilitation began implementation. An area of 1 rai in Ban Bang Can village where seagrasses have been depleted was replanted. The area is being monitored. More than 100,000 seedlings of mangroves have been prepared by villages for reforestation. The site selection is complete.

4. Seagrass beds and mangrove areas under rehabilitation and protection have been identified by placing notification boards to inform area residents of the activity.

5. Resource maps have been initiated - Assessments of the resource are being compiled and applied to the early draft maps. This activity will draw in the participation of fisherfolk and continue in 1997.

6. The strategy for achieving compliance of the trawl and pushnet ban, discouraging harvest of gravid female crabs, and other management measures would form part of a comprehensive approach that would combine awareness, enforcement, and economic incentives:

- a) Actions to discourage harvest of gravid female blue crabs have been initiated. Cages have been established in four villages to place gravid female crabs mistakenly caught by fisherfolk. These are being used by the fisherfolk, and once the crabs release their eggs, the crabs are sold. The profits are being used for village CBFM activities.
- h) Approximately 40 pushnets are reported to continue operations in the Bay. To encourage greater compliance of the pushnet ban, gillnets are being offered to the fisherfolk if they trade in their pushnets.
- c) Results of a study quantifying juvenile fish abundance in a sea grass area of the Bay before and after the pushnet ban is being compiled into awareness materials. The materials will help convey the benefits of the ban – a need identified by the fisherfolk at the Workshop and CBFM meetings.

Activity 7: Periodic evaluation

1. Bi-monthly meetings with **DOF, NGO**, and the village **CBFM working committees** are evaluating problems encountered in the management framework and implementation of activities. Potential solutions are developed through consensus, and activities are adjusted regularly.
2. Originally, a yearly evaluation by representatives of **CBFM participants and** advisers – fisherfolk, village working committees, Universities, **DOF**, NGOs and BOBP – was scheduled (see 3-year Workplan). However, during a bi-monthly meeting in July 1996, the fisherfolk requested evaluations every six months. The first evaluation was held in October 1996. Results included a consensus on additional activities to address environmental issues and conservation. The draft Workplan for activities to be conducted in 1997 is attached.

FIRST DRAFT DOFIBOBP WORKPLAN FOR 1997

Geographic Area : Thailand.
Programme Area : Community-based Fisheries Management (CBFM).

96

No.	Activity	Country Inputs	BOBP Inputs
1.	<p>Strengthening CBFM Management Framework Expand CBFM village working committees Training and Grouping to develop livelihood: Coastal resources training courses Provide information for decision-making Establish a supporting information and database to transfer information to fishing communities</p> <p>Outreach/training materials development Establish provincial and regional level framework</p>	<p>Coordination to obtain input from all sectors in all steps Assist fisherfolk in organizing groups, participate in mtgs. DOF overall coordination, logistics, select participants. DOF/NGOs select initial villages. Course planning. PMBC supports research needs of communities. Summarise needs and organiso mechanism, Obtain commitments from PMBC, Univ's, NGOs, AFDEC</p> <p>Assessment of benefits re: artificial reefs, ban Kastesart U. and DOF begin identifying structure</p>	<p>Advice in approaches, key elements of framework Advisory inputs, support for meetings. Advisory inputs, training and funding support Course planning, resource person for training Resource person for analysis, presentation approaches Initiate draft set of needs from Workshop report and proceedings. Identify alternative mechanisms, funding support Resource person for analysis, presentation approaches Advisory inputs, documentation.</p>
2.	Clarify and define coastal fishing rights	Finalize draft criteria with fisherfolk	Materials documenting other experiences
3.	<p>Action on the priority issue areas</p> <p>Resource management & rehabilitation Seeds releasing Mangrove replanting Establish/zoning scheme</p> <p>Develop approaches for enforcement of ban:</p> <p>(a) Conservation and surveillance.</p> <p>(b) Conservation Campaign</p>	<p>DOF/stakeholder participation in developing approach.</p> <p>Seeds from DOF. DOF to organize village participation. Select area of 50 Rai within each village. Review uses of areas, finalize resource map of area.</p> <p>Provide enforcement officer, boat</p> <p>Organize conservation training course. Develop course materials, including benefits of the early actions (ie, ban resource mgmt. initiatives, artificial reefs, etc.) Develop posters, video, and outreach materials. Utilize Information and database developed under Act Mt 1 for Input into fishery newsletter and radio transmissions</p>	<p>Identification of alternative approaches (ie economic incentives)</p> <p>Assist in promotion of activity, documentation of results. Assist in promotion of activity, documentation of results Training on resource mapping. Publish maps when complete. Training on assessment approach. Advise in assessment and glean key findings into course materials. Resource person for training.</p> <p>Advice, support from information services.</p>
4.	Establish fisherfolk volunteer monitoring programme	Train fisherfolk in collecting data re catch, habitat conditions, bio-indicators."	Advice, support for field work and data assessment.
5.	Periodic evaluation	Continue semi-annual evaluation meetings & follow-up.	Assist evaluation of activities.

INFORMATION SERVICE (GCP/IRAS/117/MUL)

The Information Service is attached to the core project Coastal Fisheries Management in the Bay of Bengal (GCP/RAS/150/DEN and 151/JAP) as a separate project (GCP/RAS/117/MUL), that services the entire programme. Member-countries support the Information Service through cash contributions.

1. The contract with Madras Editorial Services for carrying out information activities ended in March 1996. A national consultant now implements the activities of the Information Service – a cost-effective procedure.

During the period under review, two issues of the newsletter, *Bay of Bengal News*, and three reports have been published.

2. BOBP is encouraging fishermen of the region to take a pledge to preserve and improve the environment. Two thousand copies of a Fishermen's Pledge have been printed. It contains an excerpt from the "Earth Pledge" popularized at the 1992 environment summit in Rio de Janeiro, plus a "Fisheries Pledge" concerning aquatic resources and the aquatic environment. The pledge is being distributed at fishermen's conferences in the region.

3. The Information Service is preparing and producing a series of awareness materials on fisheries management. These include posters, sketches, overhead transparencies and T-shirts. Subjects tackled so far

- A brief history of world commercial fishing
- How fish stocks are managed
- Production, technology and carrying capacity of fishing gear
- Stewardship of resources

A 1996 diary was published to promote the theme of coastal area management.

Several more posters and sketches are under preparation.

4. A small photo collection is being built up on fisheries management, to supplement the existing BOBP photo library on fisheries development. Photographs have been received so far from Malaysia, Thailand and Indonesia, while photographs have been shot in India, Bangladesh and Sri Lanka.

5. How best can the message of fisheries management be conveyed to fisherfolk so that they play their important role in this process? The Programme is studying the impact of street plays. It is initiating a collaboration with the State Resource Centre, Tamil Nadu, on producing pilot street plays on management themes.

6. Community learning centres in fishing communities would be an excellent way of encouraging fisherfolk to come together, meet and discuss issues or hold informal workshops. The Information Service together with other units of the Programme is considering ways of establishing a pilot community learning centre in co-operation with banks and NGOs.

PROJECT INPUTS AND THEIR UTILIZATION

1. GCP/RAS/117/MUL : Information Service
 Donors : Member countries
 Budget : USD 100,000 per year

Table 1 gives details of budget and expenditure.

2. GCP/RAS/150/DEN, & : Coastal Fisheries Management
 GCP/RAS/151/JPN
 Donors : DANIDA, Government of Japan
 Budget : USD 3,000,000 from 1994 - 1999

The project expenditures are reflected in Table 2 / 3.

Tables 4, 5 and 6 give details of professional staff, consultants, support staff, and BOBP publications in 1994 (post 18th AC meeting).

Table 7 lists Trainings / Workshops conducted and participated in during 1996.

Table 1: GCP/RAS/151/JPN — BUDGET AND EXPENDITURE (US\$)

Code	Object of Exp.	Budget 1994-98	Est. Exp. 1994-96	Est. Exp. 1997	Balance
10	Personnel	346,000	111,916	71,238	
30	Contracts	210,000	24,481	47,794	
40	Gen. Ope. Exp.	161,435	15,826	30,000	
50	Supplies	150,000	(50,315)	29,365	
60	Equipment	100,000	21,516	10,000	
80	Fellowship/Training	360,000	65,976	30,000	
	Subtotal	1,327,435	189,400	218,397	
90	Servicing cost	172,565	24,622	28,392	
	Grand Total	1,500,000	214,022	246,789	1,039,189

Code	Object of Exp.	Budget 1994-98	Est. Exp. 1994-96	Est. Exp. 1997	Balance
10	Personnel	1,079,928	626,498	269,879	
20	Duty Travel	162,000	84,768	40,000	
	Subtotal	1,241,928	711,266	309,879	
90	Servicing cost Unspecified	161,450 96,622	92,465	40,284	
	Grand Total	1,500,000	803,731	350,163	316,106

Table 3: GCP/RAS/117/MUL – BUDGET AND EXPENDITURES (US \$)

Code	Budget	Deposits 1987-96	Expenditure 1987-95	Est. Exp. 1996	Balance 1997
10	Personnel		419,178	3,855	
20	Duty Travel		44,880	– 4,102	
30	Contracts		42,470	–	
40	Gen.Ope.Exp.		16,840	– 280	
50	Material		14,509	– 2,706	
	Subtotal		537,877	–3,233	
90	Servicing cost		34,668	631	
	Grand Total	* 759,693	572,545	– 2,602	189,750

* The status of contributions outstanding as at 31.12.96 received from FAO, Rome, shows arrears due from Bangladesh, India, Malaysia, Maldives, Sri Lanka and Thailand.

TABLE 4: List of BOBP Publications issued in 1996

Newsletter, *Bay of Bengal News*

Vol II No. 3, June & September 1996

Vol II, No.4, December 1996.

Reports

1. BOBP/REP/72 Sri Lanka/FAO National Workshop on Development of Community-Based Fishery Management
2. BOBP/REP/73 Report of the 20th Meeting of the Advisory Committee
3. BOBP/REP/74 Report of the National Workshop on Fisheries Resources Development and Management. Dhaka, Bangladesh.

Miscellaneous

1. 1996 Diary
2. Brochure on Regional Workshop on Precautionary Approach to Fisheries Management.
3. Posters: (a) "Integrated Coastal Area Management Plan" (English, Bahasa)
(b) "I am a steward".

TABLE 5: Professional Staff - 1996- (GCP/RAS/150/DEN, GCP/RAS/151/JPN, GCP/RAS/117/MUL)

Post	Name of Incumbent (country)	Date of (month/year)	
		An.	Dep.
International Officers			
1. Programme Coordinator (Malaysia)	Dr. Chong, Kee-Chai	12/94	
2. Communication Adviser (India)	Roy, R	–	01/95
3. Coastal Zone Management+ Adviser	Nickerson, D J (Ms) (USA)	12/94	
4. Fishery Resource Economist (Associate Prof. Officer)	Verduijn, R J C (The Netherlands)	10/96	
5. Geographical Information Systems Adviser (Associate Prof. Officer)	Bierhuizen, B (Ms) (The Netherlands)	12/96	
International Consultants			
	w/m		
1. Cleaner Fishery Harbours (India)	Ravikumar, R	1.0	
2. Cleaner Fishery Harbours (Malta)	Sciortino, J	0.25	
3. Training in Exploratory Fishing Trials	Giudicelli, M (France)	0.75	
GCP/RAS/117/MUL			
1. Information Officer (Consultant)	Madhu S R India	3.00	
2. Artist (Consultant)	Amalore E India	2.00	
+ Costs partially covered by EPA of US			

TABLE 6: Supporting Staff 1996 – GCP/RAS/150/DEN, GCP/RAS/151/JPN, GCP/RAS/117/MUL)

Administration

Scurville, (Ms) S
Sivashanmugam, P M

Sr. Admin. Assistant
Sr. Driver

TABLE 7 Training Activities 1996 (GCP/RAS/151/JPN)

No.	Subject	Duration Days	Venue	No. of Participants (Country, Gender breakdown)
Training Activities				
1.	Training of DOF/FRI Staff in communications and mediation of stakeholder consultations	3	Chittagong Bangladesh	36 (BGD, 3 F)
2.	Training of DOF and NGO Staff in design, planning and management of participatory exploratory fishing trials	3	Chittagong Bangladesh	11 (BGD)
3.	DOF/AP and NGO Staff provided orientation in coastal aquaculture management and trained in Stakeholder Identification and Analysis	3	Kakinada Andhra Pradesh	34 (IND)
4.	DOFIWB Staff provided orientation to coastal aquaculture management and trained in Stakeholder Identification and Analysis	4	Nimpith West Bengal	29 (IND)
5.	DOF/WB Staff trained in communications and management of communications and awareness campaigns	2	Nimpith West Bengal	27 (IND)
6.	DOF/Orissa Staff provided orientation in coastal fisheries management and trained in Stakeholder Identification and Analysis	4	Balasore Orissa	28 (IND)
7.	DOF/TN Staff and local Catholic Priests provided orientation in coastal fisheries management and trained in Stakeholder Identification and Analysis	3	Nagercoil Tamil Nadu	16 (IND)
8.	Training of DOF/Orissa Staff in design, planning and management of exploratory fishing trials	2.5	Cuttack Orissa	12 (IND)
9.	International Training in Integrated Coastal Zone Management for DOF-staff (3 weeks) and site visits (1 week)	30	Rhode Island U.S.A.	1 (MAL)
10.	Seminar on Scientific Characterization Methodology for DOF Staff	1	Penang Malaysia	4 (MAL, 1F)

11.	Training Course on Resource Awareness building for school youth from fishing villages	3	Phang Nga Bay Thailand	40 (THA, 20F)
12.	Workshop on maintenance and repair of boat engines for fisherfolk	2	Ban Bang Chan Thailand	20 (THA)
13.	International Workshop on “Creative Approaches to Managing Bays and Estuaries” for key persons in implementing CBFM (2 weeks) and site visits (2 weeks)	30	Florida U.S.A.	5 (THA, 1F)

Workshops, Consultations and Seminars

1.	Consultation with ESNB and PN fishers on need for, benefits of and methods of fisheries	1	Kumira Bangladesh	27 (BGD, 2 others)
2.	Consultation with ESNB fishers on solution options to their problems	1	Kumira Bangladesh	55 (BGD, 2 other and 3F)
3.	Workshop to discuss findings of communications needs study and to develop media campaigns	2	Chittagong Bangladesh	36 (BGD, 3F)
4.	Meeting of Local Consultative Group representatives (of donors in fisheries) to discuss issues and concerns of marine fisheries sector of Bangladesh (organized by FAOR-BGD around BOBP staff presentation)	1	Dhaka Bangladesh	17 (donor/aid agency staff)
5.	Orientation Workshop on Fisheries Management for senior and mid-level staff of agencies in Ministry of Fisheries and Aquatic Resource Development	2	Colombo Sri Lanka	59 (SRL, 3 others and 4F)
6.	Consultation with stakeholders of Coastal Aquaculture in Krishna and East Godavari District of Andhra Pradesh	1	Kakinada Andhra Pradesh	61 (IND)
7.	Consultation with Coastal Aquaculture Stakeholders in Midnapur, South 24 Parganas and North 24 Parganas district of West Bengal	1	Nimpith West Bengal	49 (IND)

8.	DOF/WB Staff Workshop on findings of Stakeholder Analysis	2	Nimpith West Bengal	27	(IND)
9.	Consultation of Stakeholder of Coastal Fisheries in Balasore & Cuttack districts of Orissa	1	Balasore Orissa	43	(IND)
10.	Consultation of Stakeholders of Coastal Fisheries in Kanniyakumari District of Tamil Nadu	1	Nagercoil Tamil Nadu	33	(IND)
11.	Workshop on Prevention of Disease and Aquaculture Health Management (Dr Rohana Subasinghe, FAO)	1	Madras India	20	(IND)
12.	Workshop on Quality Assurance Approaches in Fisheries Sector (Dr. Carlos Dos Santos, FAO)	1	Madras India	9	(IND)

Participation of BOBP staff in meetings

1.	SEAFDEC Regional Workshop on Fisheries Management (KCC, DJN)	4	Chiangmai Thailand		
2.	FAO Roundtable Consultation on World Census on Agriculture 2000 - Aquaculture Supplement (KCC)		Madras India		
3.	GOI/UNDP/FAO Brainstorming on UNDP Country Programme (KCC)	2	Madras India		
4.	International Collective in Support of Fishworkers: "South Asian Workshop and Symposium on Fisheries and Coastal Area Management: Institutional, Legal and Policy Dimensions" (KCC, DJN)		Madras India		

Appendix G

POST-HARVEST FISHERIES PROJECT (ODA-PHFP)

Annual Report 1996

BACKGROUND

The Post-Harvest Fisheries Project is funded by the Overseas Development Administration (ODA) of the United Kingdom and managed through the Natural Resources Institute (NRI). Phase I of the Project was initiated in August 1987 and concentrated on identification of postharvest problems in the Bay of Bengal region. Phase II (1989-1992) focused on the development of technical interventions to address post-harvest problems. Phase III commenced in April 1993 and is working towards the adaptation of technical solutions to the realities of coastal fisherfolk communities. The first and second phases focused their efforts on India whilst phase III also has activities in Bangladesh and Sri Lanka and is scheduled for implementation over a five year period and is due to finish in March 1998.

Three Bay of Bengal Programme (BOBP) member countries are included in this project: Bangladesh, India and Sri Lanka. The principal objectives of the project as defined by the project memorandum are:

- * to enhance the incomes of artisanal fishing communities and petty fish traders in India, Bangladesh, India and Sri Lanka.
- * to identify and develop the potential for increasing the diversity of fish products marketed by these communities;
- * to strengthen the ability of non-government organisations (NGO) and fisherfolk associations to replicate and secure sustainable benefits from project activities.

The project operates from a main office in Madras with field offices in Andhra Pradesh and Bangladesh. Implementation of project activities is carried out by local staff in all three countries often working with government departments and non-governmental organisations (NGO). Although regional in character the individual country components are covered by separate inter-governmental bilateral aid agreements. Within these country frameworks, the project is divided into a number of main activities and these are briefly dealt with below.

A list of abbreviations and acronyms is given in Appendix 3 on Page 138.

Overview of Post Harvest Fisheries

Post-harvest fisheries concerns those factors affecting the activities from when the fish is landed or harvested to the time the fish reaches the consumer. Post-harvest covers a whole range of interrelated and interlinked issues and must be seen as a broad-based approach to tackling the economic, institutional, social, environmental and marketing aspects of the supply and demand of preserving, processing and distributing fish and fish products. At the artisanal fishing community level there are a wide range of different issues which must be fully understood before technologies which would be suitable for small-scale fisheries can be developed and for the resulting interventions to succeed.

The fishery sector plays an important role in all of these countries' economies and this sector helps to augment food availability, provides employment to thousands of people and earns sizable foreign exchange. However, the emphasis in the past has often been on production, with very little attention paid to the post-harvest sector. The main post-harvest focus has been on distribution and marketing systems, and less of an emphasis has been placed on handling and processing. However, over the last few decades the inshore coastal areas, particularly in the Bay of Bengal, have been subjected to increasing fishing pressure from both large and small-scale fisheries sectors. Therefore, there is a need to reduce the emphasis on fishery capture and production-oriented practices which only increases the strain on an already overburdened fishery. It is vital that these resources are maximised by reducing wastage and adding value, and by making the most of what is already caught. Improving the efficiency of post-harvest handling and the processing and marketing of fish can have a significant impact on the incomes of the primary producers and market intermediaries.

Summary of Main Activities

Table 1 : Current Subprojects

Country	Subproject (Main activity)
Regional	Training
India	Fish drying and marketing
	Fish smoking
	Use of ice by fishing communities
	NGO Support
	Marketing support
Bangladesh	Sustainable income enhancement in small-scale fishing communities and Set bagnet fisheries
Sri Lanka	Itinerant fish traders
	Co-operative development in post-harvest fisheries

General

ODA undertook a mid-term assessment of the project during April and May which was divided into two parts. A pre-review assessment of the project was conducted by an independent socio-economist with visits to project sites in India, Bangladesh and Sri Lanka. These critically examined the progress in achieving the detailed outputs for each of the subprojects given in the table above and to make an assessment of the impact and sustainability of those outputs on the target groups. This was followed-up by an ODA mission to address the managerial and operation aspects of the project and to take a strategic overview of the project's progress towards achieving its purpose and goal. Comments and extracts from these reports have been incorporated into this annual report.

Several recommendations were made as a result of the review. It was agreed that inputs should be given to reformulating and improving the clarity of the project logframes to capture the cross-cutting nature of some of the subprojects without making wholesale changes at the purpose and output level. In order to focus more on project impacts it was recommended that

a consultancy be commissioned to design a simple and user-friendly impact assessment framework (IAF) which would provide a list of indicators, bearing in mind the extent and timeliness of data requirements using cost-effective approaches. It was decided that inputs would be provided to develop an intervention model which draws lessons from the project's experiences at the micro (village) level and transfers it to the macro (district/state) level.

Therefore, a workshop was organised late 1996 to review the current logframes and reformulate these, paying special attention to the indicators of achievement, discuss the best approach to documenting and developing an intervention model and review the progress on designing an IAF.

Logframes are intended to provide a living planning and management tool for the project and, as part of that process, they are revised, updated periodically to improve their effectiveness for implementation, monitoring and management purposes. As a result of this workshop which included project staff, NGO representatives and consultants, discussions were held on the most appropriate amendments and design for a revised logframe. Logframes were previously produced for each subproject (see Table 1) and it was felt that a 'new' logframe format was required to best capture the project's current approach and reflect the cross-cutting nature of some of the subprojects. It was agreed that one single logframe to encapsulate all the three country-specific activities would be the most appropriate way forward for the project. Therefore, the existing logframes were reviewed and a single logframe was drawn up which is shown in Appendix 2. However, until this logframe is finalised at the workshop in January 1997, and agreed to by project management, the earlier logframes will continue to be used for reporting purposes. A summary of progress against outputs is given in Appendix 1.

Regional

The training programme continues to work with NGOs, government agencies and fishing communities in order to increase their ability to take up post-harvest interventions and also to raise the awareness of post-harvest issues within the fisheries sector. The project has organised several training programmes for government officers from the Department of Fisheries (DOF) and other government agencies, as well as for participants from the NGO sector. Government staff from Sri Lanka and two senior staff from an ODA-supported NGO in Bangladesh visited project sites in India to view the project's post-harvest activities and discuss the lessons that the project has learnt in working in this subsector.

Training at the community level has focused on increasing communication and leadership skills as well as basic fish handling and processing techniques. The 'train the trainers' programme continues to work with the core staff of two NGOs in developing a unit which will eventually carry out the training at the field level. This is seen as an essential step in working with the communities towards achieving sustainability. The focus has been on increasing their communication and leadership skills and being able to promote the social and economic development of the fishing communities and acquiring the technical capacity to teach basic fish handling and processing.

The project has also been involved in determining the possibilities of using street theatre as a cost-effective medium for promoting an awareness of post-harvest fisheries at the community level with the State Resource Centre (SRC). This is a government organisation working for adult and children's education and developing education material for the rural population. In association with the SRC the project has been giving training on the use of folk media/street theatre to our partner NGOs to produce courses in script writing and developing themes on post-harvest issues, in order that they can make use of this medium of communication at the village level. A few plays have been scripted on the use of drying racks and the need for saving.

India

The Indian component of the post-harvest fisheries project is the largest of the three country programmes. The focus continues to be on addressing post-harvest issues and supporting appropriate interventions to provide an opportunity to use existing fishery resources more effectively and provide increased incomes for coastal communities.

Fish Drying

The project has continued to provide support on the development and transfer of rack drying technology throughout the three eastern coastal states of Tamil Nadu, Andhra Pradesh and Orissa. The project has played an important role in explaining and demonstrating the benefits of using racks to government and non-government agencies and this has led to an increased awareness on using racks to improve the quality of dried fish. The uptake of rack drying by women's groups in Andhra Pradesh and Orissa reflects the wider acceptance and application of this method. Another interesting development has been the uptake by a private company in Orissa and entrepreneurs in southern Tamil Nadu who are marketing dried fish in the north eastern states of India and Kerala respectively. In these cases the market does appear to be willing to support a price differential but this will need to be carefully monitored over time.

The production and promotion of rack drying in the Kanyakumari district of Tamil Nadu is now being handled by the fisherwomen's NGO Santhidan. The problems that were previously faced when reliance was placed on one species have now been reduced by diversifying production into a wider range of dried fish species including snapper (*Leturinus sp*), lesser sardine (*Sardinella sirm*), triggerfish (*Balestu sp*) and anchovy (*Anchoviella sp*).

However, particular attention has to be given to marketing operations. This is crucially important for the sustainability of the NGO if it is going to enter into a capital intensive and high risk operation, where the collapse of the marketing system may threaten the survival of the NGO and marginalise the communities. The project is working very closely with ODA's research programme which has identified this as a major area for further in-depth research to identify market options and solutions.

Fish Smoking

The design of a smoking kiln has been developed participatively with women fish processors to address their technical, operational and financial requirements. The most important factor in the kiln's performance has been the reduction in firewood costs. The market acceptability of the product was good, with traders preferring to buy the kiln smoked products. A review carried out by the project's social and economic unit pointed out that where the project had used local women to demonstrate the kiln the uptake had been good. However, in those areas where the government was involved the acceptance was poor because of the inadequate extension capacity of government agencies. Also, the government had attached a subsidy element to the distribution of the kiln along with a credit facility and this has resulted in a lack of interest by some women who cannot avail of these facilities. The review pointed out that the major attraction of the kiln is the reduction in firewood consumption and smoking duration. Processors have also commented on the improved quality of the product as another positive factor.

Use of Ice by Fishing Communities

The concept and importance of ice is increasingly being recognised by the fisherfolk community and there is now a growing willingness to invest in boxes and ice. However recent trials being conducted by the project have shown that this is still very dependent on external factors, particularly the nature of fishing seasons, and on the needs and aspirations of the groups concerned. Fishermen assume rightly or wrongly, that any provision of craft and gear will automatically lead to an increase in incomes whereas for a post-harvest intervention, such as an ice box, they are much more cautious in their attitude, outlook and assessment of the financial risks which is based on their own fishing craft and gear and the quantity and type of fish they can harvest. However, the uptake of large numbers of ice boxes by fishermen which have been directly purchased without a subsidy from the private sector does suggest that there is an increasing demand for them and, as more fishworkers realise the benefits the activity will become increasingly more sustainable. On the other hand, the women fish traders operate at a very basic level of financial expenditure. Even the cost of an ice box is a relatively large capital outlay and it requires, at least initially, strong support in financial terms in order to make the intervention successful.

A number of designs are now available for artisanal fisherfolk for both onboard and onshore storage for fish transportation and storage. The concept of using 250 litre ice boxes as portable fish/ice storage boxes in remote villages has increased the accessibility of ice and reduced the need for distress sales by women fish vendors. These boxes have also provided a focus for women's groups to manage their resources on a shared basis which has benefited them through a mutual empowerment process. The project has been involved in designing a number of low cost ice boxes for the local catamaran fishing craft. Boxes have also been manufactured by local manufacturers in fibre reinforced plastic and marine plywood and the project is now conducting sea worthiness trials with local fishermen.

NGO Support and Government Links

This activity is aimed at creating a greater awareness of the needs to address issues related to their social and economic conditions if post-harvest interventions are to be effectively implemented. This approach is designed to develop linkages between fishing communities, government agencies and NGOs in order to develop the communities socially and economically and address the problems and needs of these vulnerable groups, particularly in gaining access to credit, appropriate technologies, transportation to market and improving their skills base in fish handling and processing.

The project continues to work closely with its partner NGOs with the focus being on strengthening their capacity to undertake activities in the post harvest fisheries sector on their own and ensuring that this is transferred to the community. These activities are slowly empowering and enhancing the management capacity of the community organisations as they have to liaise and form links with agencies located outside the village. In the case of the tricycle it has increased the visibility of the women petty fish traders within the fishing village community.

Fisherfolk have difficulties in accessing formal sources of credit due to various factors related to administrative procedures and transaction costs. The availability of credit and the conditions under which it is supplied to the small-scale fisheries sector will directly influence the ability of fisherfolk to take up post-harvest initiatives. Therefore, the project takes a very pro-active facilitation role in working with government and banking organisations to assist fisherfolk communities to access formal credit. Two workshops were held in Bhubaneswar, Orissa and Hyderabad, Andhra Pradesh respectively to disseminate the findings of the report on the use of credit for fisherfolk in Orissa and Andhra Pradesh. The participants of the workshop included representatives of the National Bank for Agriculture and Rural Development (NABARD), lead banks, Department of Fisheries (DOF) and other government agencies and NGOs working with marine fisherfolk. These two workshops brought together several key decision makers from the banking and fisheries sector as well as organizations working at the policy level.

The project continues to play a supporting role to the East Coast Fisherfolk Forum (ECFF) and the membership decided that the focus on post-harvest issues was too limited and its role has now been expanded to cover fisheries issues that affect the livelihood of fishing communities. At a subsequent meeting the forum arrived at a consensus to establish a three-tier system for its future operations; namely the formation of a fisherfolk, state level organisation called East Coast Fish Workers Union, the ECFF consisting of membership by NGOs working among fishing communities and an Advisory Committee consisting of organisations and individuals who are interested in addressing the issues of fisherfolk communities in a wider context and to influence policy changes within the government.

The project has continued to strengthen its links with various government agencies and the Government of Tamil Nadu has requested the project to participate in the Expert Committee which is preparing a report on Fisheries Development and Management for the State of Tamil Nadu. The committee met several times and members were involved in fact-finding studies to meet with representatives of fisherfolk organisations, non-government organisations and officials from the state and central governments. The report has now been submitted to the Central Government.

The project has also been actively involved with the Government of Andhra Pradesh in working with government officials in incorporating post-harvest activities into the 5-year plan being drawn-up by the AP government. All the states are in the process of finalising their 5-year plans for the fisheries sector which have to be approved at the Secretariat level and then sent to the Central Government for comments and for funding allocations. The next five-year plan starts in April 1997, and the plans for Tamil Nadu and Andhra Pradesh have already been sent to Delhi.

The project is working towards building up a much greater awareness of post-harvest fisheries and incorporating an element of post-harvest awareness into formal and non-formal government training programmes. Recently, the Tamil Nadu State Apex Fisheries Cooperative Federation Ltd requested the project to hold an awareness programme on post-harvest fisheries which was organised in two villages of Tamil Nadu. In addition, the District Rural Development Agency and Backward Classes Commission in AP have both adopted post-harvest issues as areas of action and they have provided credit and subsidy provisions for post-harvest interventions.

Marketing Development

Marketing development activities are being closely linked to the ODA Post Harvest Fisheries Research Programme's (ODA-PHFRP) inputs under ODA's Renewable Natural Resources Research Strategy (RNRSS). This was initiated in 1996 through a series of studies on the composition, structure and dynamics of fish marketing in India and end-user preference for the type of traditional and "value-added" products that could be produced and accessed by traditional fishing communities. The results of these strategic studies should be completed during 1997 and they will then be transferred and promoted through this project, and other target institutions, to implement the strategy by technology transfer and institutional strengthening.

BANGLADESH

The Bangladesh component is the second largest of the three country programmes. The project continues to support NGOs working with coastal fishing communities and in understanding the specific problems of set bagnet fishing communities.

Sustainable Income Enhancement in Small-Scale Fisheries Communities in Bangladesh

The artisanal communities of Bangladesh are amongst the poorest rural communities in Bangladesh. They are very prone to natural disasters and increasing fishing pressure is threatening supplies to the post-harvest sector. This activity aims at strengthening the capacity of seven NGOs working with small-scale artisanal fishing communities to address the needs of coastal fisherfolk by supporting and promoting alternative income generating opportunities, either in the post-harvest fisheries sector or in other non-fisheries activities, to enhance their capabilities to act as development agents within the coastal fishing communities.

The activity is virtually completed and seven NGOs succeeded in planning and managing a variety of income generating activities through the formation of both male and female groups amongst the coastal fishing communities. The initial stages were to initiate a savings programme with the communities that would generate savings and be used in the promotion of alternative income generating activities for both the men and women. Training has been an integral part of the project and the project has provided training to NGOs in community management issues, post harvest fisheries and monitoring and evaluation. The NGOs have used this training to increase awareness among group members about their problems and potential solutions, promote leadership capabilities and develop occupational skills. A variety of activities have been undertaken by group members in a number of different areas, covering both post-harvest fisheries and non-fisheries related topics. The capacity to replicate this intervention in other parts of the coastal areas depends in part on the ability of NGOs to access funds for implementing IGAs. A draft report has been prepared on this activity and the final report will be issued early next year for distribution and dissemination to government and NGOs.

Set Bagnet Fisheries

This fishery is a major contributor to the livelihood of coastal communities which are amongst the poorest sections of the population and it also provides a sizable proportion of the marine and brackishwater capture fishery production. Concern has also grown over the possible effects of Government legislation to outlaw set bagnets which are seen as destructive and therefore pose a threat to the sustainability of the fishery resource and upon which many coastal fisherfolk depend for a living.

The institutional models being developed require taking three distinct approaches based on the type of partner organisation involved through working with a mature NGO, a small local NGO and a community organisation. The first stage focused on enhancing the capacity of these partner organisations to work directly with the communities and on community level activities. The activities at the community level are progressing reasonably well despite the difficulties due to weather conditions and the political situation earlier in the year. However, progress in working at the institutional level with government agencies and NGOs to address the specific needs of set bagnet fishing communities has been much slower. The project has been liaising and working very closely with the Bay of Bengal Programme (BOBP) which is working with the Government of Bangladesh at the macro-policy level towards formulating policies and strategies regarding the management of the set bagnet fisheries. Project staff have co-operated in sharing ideas and exchanging information and local staff have continued to participate in a number of workshops with officers from the Department of Marine Fisheries. This has led to an exchange of ideas and experiences as a result of the free flow of information between the two projects.

SRI LANKA

This is the smallest of the three country programmes and the focus has been on continuing to work with itinerant petty fish traders who operate from the main fish markets in Colombo and Negombo.

Itinerant Fish Traders

The project has been focusing its inputs towards institutional building to increase the ability of the cycle traders to manage their own affairs and ensure sustainability. The traders come from a disparate background and have few social and economic links to each other apart from trading fish at the market. Also, the fish traders are generally poor, semi-literate people with little experience of operating and managing an organisation and have little time to meet and discuss the operation and development of the organisation, or monitor its progress. Communication is limited and this has restricted access which members have to the services of the association which is necessary for the association to develop in line with the needs of the group.

At a workshop held with the traders a number of suggestions were made to strengthen the areas of capacity-building, training and information dissemination. The project has worked closely with the membership to identify dynamic and capable traders who could be elected. The vote conducted during the annual general body meeting resulted in the election of a new set of office bearers. It was decided that the priority would be on increasing the membership of the association and ensuring wide member participation in its activities. The management board of the association has now introduced a welfare and death benefit scheme for its members. In an effort to give the traders a sense of belonging, an identity card has been designed and distributed amongst the members. All these activities are being funded largely by funds generated by the association.

The Hatton National Bank has started to grant self-employment loans to the members to buy bicycles and insulated ice boxes and several traders have upgraded from bicycles to motorcycles through improved access to formal credit.

Co-operative Development In Post-Harvest Fisheries

The project has continued to work closely with the Ministry of Fisheries and Aquatic Resources (MFAR) and also with the ADB-funded Fisheries Sector Development Programme, through which the project is linking its efforts into the wider fisheries development field.

The project is still in the early stages of development in designing appropriate ice boxes for itinerant cycle traders and onboard 22 foot craft. These boxes were participatorily designed on the basis of discussions held with individuals belonging to these two groups. In the case of itinerant traders the boxes are being tailored to suit the needs of rural and peri-urban marketing of fish by cycle and motorcycle traders. Trials are now being conducted at six locations. An instructional leaflet has been prepared in Sinhala on how to use the boxes and is being distributed with each box along with a short orientation course.

Preliminary results of the trials conducted have been encouraging. The boxes have enabled motorcycle traders to access distant markets, as the ice boxes store fish longer and the craft owners are to reduce distress sales. However, those traders who use bicycles find the box to be heavy and the cost of the box is also considered to be too high.

One problem that the project is likely to face in extending the use of the box is the expectation on the part of most fishing communities that the boxes will be provided with a subsidy. In almost all villages where the trials are going to be conducted the fishermen expect to be given a box at subsidised rates. This is partly due to using the MFAR as an institutional base to implement the trials and promote the use of ice boxes. Unfortunately, MFAR has a long history of providing subsidies for the technologies that it has promoted in the past. In order to test whether the boxes will be purchased at cost, the project has placed a few boxes for sale in the shops run by MFAR cooperatives, and a few fishermen have come forward to purchase the boxes outright.

The project during the past few months has been making arrangements for extension of the ice boxes. To this end the local office of the ODA-PHFP has been involved in the setting up of sub committees consisting of local fisheries inspectors and bank managers. It is expected that these committees will ensure greater coordination between banks and MFAR and would speed up the provision of loans given for various onshore activities including that of the ice boxes. The banks will be refinanced through the ADB funded Fisheries Sector Development Project with whom the project has maintained close links.

UPTAKE OF PROJECT OUTPUTS

Uptake

The project has now progressed a considerable way to developing appropriate intervention methodologies to address many post-harvest problems. In the villages where the project has worked these interventions have been well received and, in the main, have been adopted. These interventions, however, have not yet been widely institutionalised in NGOs and governmentJts, nor have the communities arrived at the point where they are fully able to understand post-harvest issues and adapt to them. The project is currently developing an intervention model in the form of a manual which will encapsulate the project's learnings for dissemination to organisations involved in the post-harvest fisheries sector.

Although many fisherfolk see post-harvest issues as of major importance it is often not considered to be their highest priority and other issues are of vital importance in these communities. Thus, they need to address and overcome these problems before they are able to take up opportunities in post-harvest practices and these usually relate to their immediate social and economic problems such as debt, limited cashflow, social obligations, and high risks associated with existing operations. In relation to this the project has often had to focus more on group formation and improved access to credit prior to the uptake of improved post-harvest techniques which is a slow process. The shift in focus of fisherfolk from a very short-term consumption-oriented work strategy to one of longer term investment, as required by many post-harvest interventions, has also not been easy to achieve. In addition there has, in the past, been some apathy on the part of government and NGOs to post-harvest changes, due in part to production-orientated policies and due to a lack of understanding on the possibilities of post-harvest activities. There have also been resource-related difficulties (the collapse of the seerfish fishery off Andhra Pradesh and the anchovy fishery in Tamil Nadu) and political problems (in Bangladesh and Sri Lanka) which have delayed implementation. In spite of these difficulties much useful work has been done to achieve the project outputs as stated.

With the decline in fish landings and the subsequent increase in price, the importance of ice is now being recognised by the artisanal fishing communities who are more willing to invest in insulated boxes and ice. In addition changes in attitudes to iced fish and to fish quality in general have hastened the change towards better kept fish. It was estimated that there are

1,500 ice boxes³ in use in India as a result of the intervention of the project. Improved ice use has also increased in Sri Lanka through the boxes provided to motorcycle and cycle traders. The fishing vessel operators have also expressed interest in improved ice use onboard vessels in Sri Lanka. However, women fish traders who operate at a very basic level of financial expenditure often find the cost of an insulated ice box is a large capital outlay and they will require, at least initially, strong support in financial terms in order to make the intervention successful.

The use of drying rack technology is also gaining wide acceptance along the Indian coast and it is estimated that there are 900³ drying racks in use due to the project's interventions. The Government of Orissa has been actively funding and promoting drying racks and two private companies in Orissa and Tamil Nadu have started production of dried fish using drying racks. The drying racks continue to be used by the womens' groups in southern Tamil Nadu who have diversified into drying a number of different species.

The improved fish smoking kiln that has been developed in Andhra Pradesh has been taken up by a small group of women with an existing demand for further kilns. Although this has been enthusiastically supported by the Andhra Pradesh state government the acceptance has been poor on account of the lack of extension and support that is required at the field level. There was also a subsidy and credit element that the government attached to the kilns which was not fully explained to the recipients, leading some of them to believe that the kilns were being distributed free. The institutional and administrative capacity of the various government agencies to provide extension support and assistance at the field level is limited and unless this is provided it may slow down the introduction of an improved technology.

There is increasing support for post-harvest issues from both the government and non-government sectors. The Government of Andhra Pradesh expressed its desire to raise the profile of post-harvest fishery in all its plans. Inputs from the project feature heavily in its next five year plan. The Government of Tamil Nadu requested the services of a project staff member to participate in the Expert Committee. Several government agencies have also allocated funds to support the uptake of improved fish drying, ice usage, fish smoking and fish containers. In Sri Lanka too, government enthusiasm for post-harvest issues has gone up. It has agreed to focus part of the ADB-funded Fisheries Sector Project on the post-harvest sector and to work with the project.

The apex body AFPRO in India has now adopted post-harvest as one of its key support areas and is relying on the project for support, guidance and training over the coming years and, in collaboration with Oxfam, is conducting a fisheries sector study in Andhra Pradesh. Santhidan (the coastal women's NGO in Tamil Nadu) has demonstrated its commitment and enthusiasm to working with the project as have other groups in India. Several NGO groups in Bangladesh have formed strong links with the project and are now in the process of forming a coastal fisheries network.

Replicability

The fishing communities have shown some capacity to replicate some of the improved post-harvest practices with little help from the project. The uptake of ice boxes by 1,000 fishermen in Andhra Pradesh and Orissa in the last year, purchased directly from the suppliers, is one example. There are still some technical problems with some of the designs of the ice boxes but this should not be an obstacle to uptake. The provision of ice at the beach level is becoming increasingly important and the use of ice is believed to be something which will have much wider application in the coming years and likely to be replicable throughout the region. The ice boxes developed for cycle traders at St John's market in Sri Lanka also have much wider application along the Sri Lanka coast and, possibly, in some parts of India. It is expected that this method of improved ice use will become more developed in the future if the problem of allowing itinerant traders to gain the benefits which group formation offers, can be overcome.

The drying of fish on the sand is widespread in the region although the use of racks to dry fish is now expanding along the coast. In some areas it has already been adapted to local conditions. In other areas it presents problems with land title, space, ownership and building materials and these issues need to be resolved before the techniques can be transferred. It is likely that the use of drying racks will be applicable in Sri Lanka and other parts of India.

It must be borne in mind, however, that whilst improved post-harvest practices are theoretically replicable in other areas, their uptake will depend on those practices being adapted to the problems, needs, aspirations and capacities of the groups concerned in those areas. This will require the extension agents in government and NGOs to gain the skills to assess these factors and to develop the practices to suit local circumstances. The extent to which the methods of working with NGOs and government departments are replicable needs to be explored. All of these institutions have a commitment to providing support to a very large number of coastal fisherfolk but, in the main, lack the capacity to do so. They will require continuous guidance and support for some time to come before this is sustainable. The work in Bangladesh with the range of support services being provided to NGOs working with different set bagnet communities has moved towards the development of a methodological approach which is still in its early stages but from which much can be learnt.

Sustainability

The sustainability of outputs from the project depends on many external factors outside the direct control of the project. In some cases subsidies have supported the uptake but there certainly appears to be support for the idea that both drying racks and improved ice use will continue, even in the absence of subsidies. Many now feel that improved use of ice has taken an irreversible step forward as a result of consumer pressure and resource shortages. Some of the women's groups using ice boxes are, however, at a delicate stage in their development and the next year will indicate the likely chances of this activity surviving independently. Some of the ice boxes are suffering from design problems, but this is being addressed by manufacturers as the private sector now recognises the potential of the fisheries sector as a viable market and worthy of investment.

The fish smoking ovens have been taken over by the women using them with considerable enthusiasm. One woman has already destroyed her traditional oven, sure in her mind that she will not return to the old smoking methods. The ovens, whilst quite complex in design, are built by local tinkers and are well within local capacity to repair and maintain.

The improved post-harvest practices, in many cases, appear to be increasing the communities' incomes. However, the extent of such increase is not yet fully defined and the proposed impact assessment framework will address this aspect by providing a listing of indicators, data requirements, and timing of information collection using cost-effective means. It is also important to assess the external factors which could influence the uptake of improved post-harvest practices. The increased income is initially being used to cover the additional investment cost of boxes, racks, ovens, etc. In the longer term some of the processors and vendors are using the money for improved education for their children, for buying livestock and for better housing. There is some evidence in certain project areas of increased incomes being used to reinvest in the productive capacity of the fishery by purchasing better gear and boats. This is clearly not sustainable but could also be a reflection on the limited alternative income generation avenues that are available for coastal fishing communities. In Bangladesh there has been considerable focus on increasing access to alternative income generating opportunities outside of the fisheries sector as a means of channelling surplus capital and labour into more sustainable activities. The lessons learnt from this approach may have application in India and Sri Lanka.

The project focus of working through both NGOs and government should increase the sustainability of the outputs after the project is completed. This will only occur, however, if the staff of these agencies fully understand the complexities of changing post-harvest practices, and if they are given the resources to implement these changes. The intervention model that the project is now developing will address these very points by focusing on a strategy to optimise the livelihood benefits of coastal fishing communities. However, many donor agencies are now withdrawing from southern India, and this may have repercussions within the NGO sector as funding levels decline.

Although the Governments of both India and Sri Lanka are moving towards recognition of the importance of post-harvest fisheries, the policies are not yet in place to ensure the sustainability of this focus nor to direct resources towards changing practices. However, any enthusiasm by government and non-government agencies to adopt post-harvest policies and practices must be equally matched by appropriate development of knowledge and skills in this area so that projects which are implemented take proper account of their social and economic context.

Further details of the summary of progress against outputs is given in Appendix 1 below:

Summary of Progress Against Outputs

Project Title ODA Bay of Bengal Post-Harvest Fisheries Project

Project Regional

Purpose : **To enhance the incomes and savings of artisanal fishing communities and petty fish traders**

REGIONAL

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>To strengthen the capacity of development agencies to assist target beneficiaries in community issues related to post harvest fisheries,</p>	<p>Two organisations involved in the artisanal fisheries sector show initiative in undertaking post harvest activity by March 1998.</p>	<p>During the current year partner NGOs in India succeeded in obtaining funding under the BPS (British Partnership Service). In one instance the funding has been used for the establishment of an alternate transport system for the artisanal fishing community, particularly petty fish traders. And in the second instance BPS has been approached for the establishment of a training centre. Funds will be released next year.</p> <p>The project has been able to facilitate greater coordination between government agencies to undertake post harvest activities. In AP the project has been able to bring the Backward Classes Commission and the DOF together to undertake the promotion of smoking bins. In TamilNadu, the Department of Social Welfare and the DOF have been promoting the use of the fish container by petty fish traders through provision of loans and subsidy.</p> <p>In Sri Lanka, the project has been able to secure office accommodation for the association of cycle traders at St Johns market besides accessing funding available with the ADB-funded Fisheries Sector Development Programme.</p>	<p>One problem faced by the Project, especially with respect to initiatives undertaken by the DOF/MFAR, Sri Lanka, is the expectation of subsidy on the part of the artisanal fishing community. For government departments have a long history of providing subsidies in the region and it has been difficult to change the attitudes of both the community and the governments on the question.</p>

REGIONAL

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Increase the ability of target groups and development agencies to address post-harvest through better understanding of technical and marketing aspects</p>	<p>Six target institutions able to devise their own technical innovations and market strategies by March 1988.</p>	<p>During the current year the two partner NGOs of the post-harvest fisheries project have undertaken activities aimed at either developing new products or accessing new markets. Santhidan, based in Nagercoil, Tamil Nadu, developed a new method of culling the bony trigger fish, which turned it into a dried product. A small quantity that was made was marketed in Kerala. Similarly, ROSA which operates at Nagapattinam, expanded the market for processors and petty fish traders by accessing new markets in Delhi and Kerala.</p> <p>The DOF, AP organised an exhibition of high quality fish products in Hyderabad. A large quantity of fish products was sold at this exhibition. Encouraged by the response, the department now plans to introduce fish stalls in all major exhibitions conducted in Hyderabad. In order to diversify its sources of supply the DOF has started a rudimentary network of producers; some of them are partner NGOs of the project.</p> <p>In Bangladesh, the project has been helping petty fish traders and processors from two slum area in Chittagong to form groups. The project proposes to conduct training exercises in better methods of fish handling and processing for members. Possible technical innovations will be devised for post-harvest problems faced by these communities during the current year.</p> <p>In Sri Lanka, the project has in close co-operation with the MFAR developed ice boxes for use onboard 22 foot craft and by motorcycle traders who operate in the rural areas, The process of designing the boxes has increased the profile of the post harvest questions within MFAR besides having enhanced the capacity of local manufacturers.</p>	<p>One of the problems faced by the project has been the fall in fish landings of most species. This has meant a reduction in quantity available for processing and a shift in the requirement towards ice boxes. The development costs of an ice box being what they are, most often partner institutions are not in a position to undertake development on their own. The project has had to necessarily fund such costs. In Orissa where there have been large landings a total of 450 racks were set up by processors using their own resources. Similarly, a private entrepreneur, Oriental Dried Fish Traders, has taken up rack drying in Orissa. Their product is now being sold in markets as far away as Assam and Tripura. This clearly indicates the commercial viability of the operation. In Bangladesh, there have been delays in implementation due to the uncertain political situation that prevailed during the last year. The project expects to have a few preliminary results by the end of 1999. In Sri Lanka, the design of the ice boxes will be standardised during the coming year and extension taken up by MFAR.</p>

REGIONAL

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>To strengthen the effectiveness of the fishing communities. NGOs and GOs to develop specific need-related skills.</p>	<p>Six target institutions able to conduct their own training programmes by March 1998.</p>	<p>The project has been continuing its trainers' training programme with its partner NGOs. An evaluation of this programme with Santhidan, a partner NGO working in Kanyakumari district, showed that the animators/trainers are currently in a position to carry out training exercises for the community on their own. The partner NGO ROSA has shown similar progress.</p> <p>The project has also been assisting DOF staff of AP and Orissa to acquire the skills needed for undertaking exercises in methods of fish handling and processing. This training programme is ongoing. It is expected that the DOF staff from these two states will be in a position to undertake training exercises in the post-harvest sector by the end of the project.</p> <p>The project initiated its activities in West Bengal with the conducting of a training exercise aimed at raising the awareness of NGOs working in the artisanal fisheries sector. Of the total of 6 NGOs who attended this workshop it is expected that at least 3 NOGs will indicate interest in the trainers' training programme.</p> <p>In Bangladesh, the project has completed its training exercises aimed at increasing the capacity of set bag net communities to undertake income-generating activities on their own. An evaluation of the training programme has shown that all partner Institutions have the capacity to conduct 1GAs on their own.</p> <p>In Sri Lanka, training exercises aimed at helping cycle traders to operate their own enterprises has resulted in the management of accounts being taken over by the traders. The project expects that the animators involved in the trainers' training exercises will be in a position to undertake post-harvest initiatives on their own by the end of the project.</p>	<p>The project expects that the animators involved in the trainers' training exercises will be in a position to undertake post-harvest initiatives on their own by end of project. However one of the difficulties faced by the project is that the trainers have not shown the requisite initiative for innovation. This has resulted in the adoption of practices that are not conducive to field situations. Consequently the project has changed the methodology adopted. One of the problems faced by the project in the implementation of its activities with the DOF has been the lack of time allocated for training exercises.</p> <p>The project has just Initiated work in West Bengal. While it is likely that the partner NGOs will have the requisite skill to handle post-harvest questions by EOP, their ability to handle training exercises on their own is questionable.</p> <p>In Bangladesh and Sri Lanka where the project's training activity has come to a close, It will be possible to make a preliminary assessment next year.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project
 Subproject : Improved Utilisation of Fish (IND 3A)
 Purpose : Development of improved dried fish products.

INDIA

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Infrastructure and management procedures for production of rack dried products operational;</p> <p>Marketing systems established;</p> <p>Project managed on a self-sustaining basis by partner communities and institutions</p>	<p>Production system able to produce 20 tonnes of rack dried fish products by end of March 1998;</p> <p>Organisation successfully markets rack dried products locally by end of project period;</p> <p>Partner organisations able to operate systems independently by end of project period,</p>	<p>NGO Santhidan has expanded its product base and produces a variety of dried fish species. This season 92 kgs of snapper, 200kgs of sea bream and 2.2 tonnes of anchovies have been dried.</p> <p>In Orissa, in response to demonstration racks set up by the government, fish processors have set up their own racks. A private trader, Messrs Oriental Dried Fish, has undertaken rack drying, clearly establishing its commercial viability,</p> <p>Products marketed locally within Tamil Nadu and Kerala. Santhidan attended the awareness programme and exhibition in Hyderabad and presented a paper. Oriental Dried Fish Company has now started in the large fish markets of Assam and Tripura where they have reportedly made large profits. At least two entrepreneurs have started trading in dried anchovies in Tamil Nadu. Santhidan has successfully organised women's groups on the production side. However, the organisation still requires support on marketing issues.</p> <p>The ODA-PHFRP has commissioned a study on the size, structure and composition of dried fish markets in the north-eastern states of India.</p>	<p>Marketing issues related to supply, consistency, packaging and price still need to be addressed.</p> <p>Drying rack technology is becoming established along the coast and the project is interacting with other interstate governmental agencies and NGOs to explain the benefits and undertake pilot-scale demonstrations.</p> <p>However, one factor that has been affecting the promotion of drying racks has been the fall in fish landings along the coast of India. Consequently much of the fish is being sold fresh.</p>

Summary of Progress Against Outputs

Project Title ODA Bay of Bengal Post-Harvest Fisheries Project
 Subproject Fish SMOKING (IND 3A)
 Purpose To improve the price and quality of smoked fish products using an improved smoking kiln in Andhra Pradesh.

INDIA

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Standardised smoking kiln developed and found acceptable to traditional processors;</p> <p>Market potential for improved smoked product at the end of July 1996.</p>	<p>5% in reduction of production costs over traditional kilns by July 1995;</p> <p>Two local markets accept improved smoked product at the end of July 1996.</p>	<p>Kiln designed in participation with women processors has reduced the production costs in excess of 5% due to reduction in firewood consumption;</p> <p>Market testing demonstrated the acceptability of the product in the local markets with selling price slightly higher than the local product (10-20%);</p> <p>The production, distribution and funding of the kilns has now been taken over by three government agencies; the Backward Classes Corporation, District Rural Development Agency and Department of Fisheries;</p> <p>Draft report of activities finalised. Paper was presented at the Fourth Asian Fisheries Forum.</p>	<p>Although the state government agencies have taken up the technology a subsidy and loan component has been attached to it. Also, the manner in which the distribution was handled has led many women processors to believe the kilns have been given to them free. This perception is further reinforced by the lack of any systematic effort to collect payment for the kilns. Other processors who have not received a kiln are, therefore, reluctant to pay the full cost.</p> <p>Discussions between the project and the government agencies have led to some improvements but this situation has highlighted the problems when the government agencies take over promotion and extension of a technology.</p> <p>East Godavari district was badly affected by a cyclone that crossed the coast. The activity has been temporarily_disrupted as a result.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project
 Subproject : Use of Ice by Fishing Communities (IND 4)
 Purpose : To promote the use of improved ice boxes among artisanal fisherfolk.

INDIA

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Low cost onshore ice stores and permanent ice boxes established;</p> <p>Low cost onboard ice boxes for navas and catamarans designed, standardised and extended</p>	<p>10 petty fish traders report the use of ice in two target villages by July 1995;</p> <p>2 types of onboard ice boxes ready and adopted through extension by the communities,</p>	<p>The women’s groups in Chandrabraga and Sahana (Orissa) continue to use the 250 litre ice boxes on a co-operative basis. The project is monitoring the situation. Preliminary results show that the women who use the ice boxes make an extra amount of Rs 10 - Rs 15 per day as they do not have to resort to distress sales.</p> <p>The NGOs ROSA and Santhidan are assessing the scope for using 50 litre ice boxes by petty fish traders in Tamil Nadu.</p> <p>Trials of onboard ice boxes for catamarans have been completed in Onssa and Tamil Nadu. Seaworthiness trials of boxes made using fibre reinforced plastic and marine plywood are being carried out in collaboration with the Apex Federation in Tamil Nadu. A report of the results is now under preparation.</p>	<p>The decline in fish landings has resulted in an increasing proportion of the catch being sold fresh. This has led to increased use of ice and insulated boxes. Private manufacturers are also beginning to express an interest in producing ice boxes for fishing communities.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project

Subproject : NGO Support/Government Links (IND 6)

Purpose : **To strengthen the ability of NGOs, GO and fishing communities to replicate and secure sustainable benefits from project activities.**

INDIA

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Additional sources of income developed through group action;</p> <p>Improved access to fish markets;</p> <p>Savings scheme initiated and strengthened;</p> <p>Access to institutional credit opened through savings scheme;</p> <p>GOs' interest to deal with post-harvest issues increased.</p>	<p>One pilot-scale activity implemented by one fisherfolk group by July 1995;</p> <p>15 fisherfolk using a fish market transport system by July 1995;</p> <p>10 new savings schemes operated by fisherfolk groups by July 1995;</p> <p>2 credit channels opened in July 1995;</p> <p>3 state GOs address post-harvest issues by December 1996.</p>	<p>Fisherfolk groups in Orissa are operating two pilot-scale activities on using ice boxes as a fish/ice storage system;</p> <p>A fish van hire scheme has been operated by Santhidan, two tricycle schemes are now in operation - one through the project and the other through the British Partnership Scheme;</p> <p>18 self-help groups have been mobilised by two partner NGOs and over 250 members have benefited from this savings scheme;</p> <p>Links have been established with NABARD in 8 villages associated with ROSA and COPDANET;</p> <p>The Tamil Nadu and Andhra Pradesh State Governments have incorporated post-harvest issues into their next five-year plans although these have yet to be approved.</p>	<p>There is considerable support from both GOs and NGOs for the promotion and uptake of post-harvest issues. However, skills in planning, implementing and monitoring post-harvest interventions are still weak (see INI 3 B).</p> <p>The project is working with both GOs and NGOs to bring them together and ensure complementarity between the micro and macro levels and the various disciplines required to tackle these issues at the grassroots level.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project

Subproject : Marketing Development Activities (IND 8)

Purpose : Target groups and development agencies manage to market their own fish products. _____

INDIA

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Reliable information on marketing systems for traditional fish products;</p> <p>Strong grassroot level organisation able to develop and manage the marketing system;</p> <p>Appropriate marketing strategies evolved,</p>	<p>5 institutions request further information by July 1995</p> <p>One grassroot level organisation able to develop and manage its own market systems by end of the project period;</p> <p>Strategies adopted by target communities by end of project period.</p>	<p>Report on study of dried fish markets in Orissa and Andhra Pradesh finalised, edited and ready for distribution by mid-November.</p> <p>Report on marketing development guidelines prepared in draft form and sent to NRI, U.K., and is now being finalised.</p> <p>Two partner NGOs have been establishing markets for dried fish products and pickles and are linking-up production with local wholesale traders. However, as their scale of operation is very small their bargaining power with the traders is limited,</p> <p>The project has developed links with the ODA Post-Harvest Fisheries Research programme. A research programme on the identification of a strategy for the maintenance of livelihoods in coastal fishing communities by developing and marketing new fish products based on traditional methods has been approved and implemented. The results of these studies will feed into the PHFP.</p>	<p>Links between the ODA research programme and ODA-PHFP are being strengthened and developed further. The major constraint at the moment is the absence of an appropriate understanding of the market and a strategy for penetration and feasibility of doing so.</p> <p>The research programme will be conducting a series of studies and devising a strategy which will be implemented by the ODA-PHFR In the meantime the project will focus on providing market information and developing awareness of the difficulties of entering into marketing activities.</p> <p>There is considerable concern over the capacity and ability of NGOs/ grassroot level organisations entering into marketing activities. They lack orientation as well as human/ financial resources. The project has focused on creating awareness of these difficulties that organisations face entering into markets. A book of guidelines for NGOs venturing into marketing is being finalised.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project
 Subproject : Sustainable Income Enhancement In Small-Scale Fishing Communities (BGD 10)
 Purpose : **To strengthen the capacity of NGOs working with coastal communities in promoting sustainable income enhancement in small-scale fisheries.**

BANGLADESH

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>NGOs capable of planning and managing income generating activities on their own;</p> <p>Income levels of fishing communities enhanced through initiation of sustainable sub-sector activities in the post-harvest sector.</p>	<p>At least 5 NGOs to prepare proposals by the end of 1994;</p> <p>At least 5 NGOs able to initiate activities in the field by the end of 1995;</p> <p>Each NGO able to form at least one stable group by May 1996;</p> <p>Each group able to increase its level of savings by at least 10% by May 1996;</p> <p>At least 50% recovery rate on loans taken by the community by May 1996;</p> <p>Increased knowledge and skills levels in managing income-generating activities by May 1996;</p> <p>At least one IGA initiated by each NGO by the end of May 1996.</p>	<p>Completed</p> <p>Seven NGOs have implemented a range of income-generating activities and other support services for the communities.</p> <p>All the NGOs were able to form and sustain at least two groups and most of these groups have managed to implement and sustain a good savings record with good recovery rates.</p> <p>Savings levels have increased and steadily grown since November 1995;</p> <p>Recovery rate has consistently been above 50%</p> <p>Both NGOs and groups have reportedly increased their skill levels in IGA development and management;</p> <p>By March 1996, 45 groups had started 14 different types of IGAs.</p>	<p>This project is almost complete with only a few training inputs still to be finished. A draft report has been completed and when finalised the results will be disseminated.</p> <p>Monitoring of the NGOs/groups should continue to ensure sustainability.</p>

Summary of Progress Against Outputs

Project Title : ODA Bay of Bengal Post-Harvest Fisheries Project
 Subproject : Set Bagnet Fisheries (BGD 11)
 Purpose : **To develop and implement models of institutional support for assisting set bagnet communities by addressing post-harvest concerns.**

BANGLADESH

Outputs	Indicators of Achievement	Summary of Progress	Comments
<p>Institutional models for addressing post-harvest fisheries issues in set bagnet communities developed;</p> <p>Capacity of government and NGOs to answer the specific needs of set bagnet communities enhanced;</p> <p>Project administration systems worked out.</p>	<p>3 models developed and field tested working through 3 different institutional frameworks (one medium sized NGO, one local NGO and one community group);</p> <p>Enhanced skill base of DOF and at least 5 NGOs working with set bagnet communities;</p> <p>Administrative and logistic support to achieve the concerned outputs and undertake the activities.</p>	<p>Models have been established in Cox's Bazar, Chittagong and Hatiya Island. Savings and loans groups exist in all three communities. A human resource development package is being drawn up which includes a module on post-harvest skills;</p> <p>Study on availability of access to formal third party credit completed in a draft form. This is currently being edited and will be disseminated when finalised.</p> <p>Workshop held with NGOs working with coastal communities to assess scope and feasibility of establishing a coastal fisheries network. Meeting held with Secretary of Ministry of Fishenes/ Livestock on involving government officials (ie coastal MPs) in the issues affecting coastal fishing communities.</p> <p>Project staff have very close links with the FAQ-funded project which is promoting people-orientated fisheries policy through the DOF;</p> <p>Project systems have to be revised following changes in administrative and operation procedures at the ODA fisheries office, Dhaka. A few changes have been made to the staff structure after the meeting with ODA programme director, Dhaka.</p>	<p>This project is still at an early stage, delays were caused at the beginning of the year because of the political situation in Bangladesh.</p>

Narrative Summary (NS)	Verifiable indicators (OVI)	Means of Verification (MOV)	important Assumptions
<p>Activities</p> <p>1.1 Identify potential project areas and conduct pre-feasibility study.</p> <p>1.2 Assess needs and priorities of AFC and PFT in selected areas.</p> <p>1.3 Explore and identify suitable technologies and options.</p> <p>1.4 Carry out socio-economic, institutional, marketing and environmental appraisal of technologies and options.</p> <p>1.5 Support formation of groups, as necessary, undertake participatory planning of pilot activities and support implementation.</p> <p>1.6 Carry out participatory evaluation of pilot activities and develop standard but flexible models for use in other areas.</p> <p>1.7 Promote planning and implementation of models in other areas, liaising with other agencies as needed.</p> <p>2.1 Identify suitable institutions (CBOs, NGOs, GOs) and access their technical and managerial capacity,</p>			<p>(Activity to Output):</p> <ol style="list-style-type: none"> 1. Natural disasters (eg cyclones) do not adversely affect ATC and PFTs. 2. NGOs with necessary managerial and financial capacity and integrity remain willing and able to work with the project in developing PHF. 3. Communities willing and able to form CBOs, when necessary; and these remain effective. 4. Communities, Gos and NGOs willing and able to cooperate in developing PHF. 5. The Project, Gos and NGOs able to retain experienced and trained staff. 6. Access to formal and informal sources of credit continues throughout project period. 7. Power supplies and transport system in project areas continue to operate effectively throughout the project. 8. ODA remains committed to the project and provides funds on time. 9. Staffing changes in ODA do not adversely affect the project. 10. Suitable qualified and experienced staff and consultants available when needed.

Narrative Summary (NS)	Verifiable indicators (OVI)	Means of Verification (MOV)	important Assumptions
<p>2.2 Assess capacity building needs of institutions (eg training: exposure visits) and key resource people/ trainers.</p>		2.2	
<p>2.3 Develop training modules, including training of trainers, implement training and evaluate.</p>		2.3	
<p>2.4 Plan, implement and evaluate exposure visits to other projects or agencies.</p>		2.4	
<p>2.5 Plan, implement and evaluate other capacity building events (eg. Seminars, workshops).</p>		2.5	
<p>2.6 Review and support continued process of social mobilisation by CBOs, monitor group maturity and develop exit strategies.</p>		2.6	
<p>3.1 Review experience of beneficiaries in gaining access to markets.</p>		3.1	
<p>3.2 Undertake market research to estimate market trends in project areas and beyond (volume, price, quality and segmentation).</p>		3.2	
<p>3.3 Develop marketing alternatives (channels, products, options) and examine potential links to production systems (backward linkages).</p>		3.3	
<p>3.4 Estimate economic returns to technologies and options, analyse risk and devise strategies, policies and coping mechanisms.</p>		3.4	
<p>3.5 Estimate economic returns to technologies and options, analyse risk and devise strategies, policies and coping mechanisms.</p>		3.5	

Narrative Summary (NS)	Verifiable indicators (OVI)	Means of Verification (MOV)	Important Assumptions
4.1 Review experience of AFC and PFT in gaining access to credit.		4.1	
4.2 Assess credit needs of CBOs in pilot areas and plan and implement programme with CBOs to strengthen their capacity effectively to manage savings and credit.		4.2	
4.3 Facilitate CBOs in making contact with and demands on banks and other financial service providers.		4.3	
4.4 Participatory monitoring of CBOs in using credit and support further as necessary.		4.4	
4.5 Extend support to credit programmes in other project areas.		4.5	
5.1 Establish dissemination strategy, including identification of potential users.		5.1	
5.2 Identify their information needs and produce communication materials.		5.2	
5.3 Different types of communications (eg leaflets, videos) distributed in appropriate languages to communities and agencies in IN, BD and SL.		5.3	
5.4 Conduct workshops, inhouse 'consultancies' and other events to disseminate project learning to these organisations.		5.4	
6.1 Identify potential NGOs and GOs to link to project AFC and PFT		6.1	

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions
<p>6.2 Identify common interests among these and facilitate and sustain dialogue and consultation (eg via existing and new forums).</p> <p>6.3 Maintain links with key NGOs and GOs (eg DADA and NABARD) and encourage them to focus on needs of AFC and PFT, including (8D) for nonfisheries IGs.</p> <p>6.4 Two forums held in IN, BD, SL bringing together CBOs, GOs, NGOs to address PHF issues by 31 March 1998.</p> <p>7.1 Field Manager and staff recruited and in post by end of project month 3.</p> <p>7.2 Office established and equipped by end PM3.</p> <p>7.3 Project implemented in line with annual workplans.</p> <p>7.4 Consultants hired and other resources procured, as necessary, for smooth project implementation.</p> <p>7.5 Monitoring system designed and implemented by end PY1 and monitoring reports produced on schedule.</p> <p>7.6 Periodically review government policies and macro-economic and legal frameworks for PHF.</p>		<p>6.2</p> <p>6.3</p> <p>6.4</p> <p>7.1</p> <p>7.2</p> <p>7.3</p> <p>7.4</p> <p>7.5</p> <p>7.6</p>	

Narrative Summary (NS)	Verifiable Indicators (OVi)	Means of Verification (MOV)	Important Assumptions
<p>7.7 Impact Assessment System designed and implemented by Social and Economical Unit (SEU) with outside support by end of February 1997.</p> <p>7.8 Project learning: ensure feedback of lessons learnt from MIAS into project planning.</p> <p>7.9 Plans for closure or extension of project beyond 31 March 1998 made by end of July 1997.</p>		<p>7.7</p> <p>7.6</p> <p>7.9</p>	

Appendix 3

List of Abbreviations

ADB	Asian Development Bank
AFC	Artisanal Fishing Communities
AFPRO	Action for Food Production
AP	Andhra Pradesh
BOBP	Bay of Bengal Programme
BPS	British Partnership Service
CBO	Community-based Organizations
DOF	Department of Fisheries
ECFF	East Coast Fisherfolk Forum
FAO	Food and Agriculture Organization of the United Nations
FAO-BOBP	FAO Bay of Bengal Programme
IAF	Impact Assessment Framework
IAS	Impact Assessment Systems
IGA	Income Generating Activity
MFAR	Ministry of Fisheries & Aquatic Resources
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute, U.K.
ODA	Overseas Development Administration
ODA-PHFP	ODA Post Harvest Fisheries Project
ODA-PHFRP	ODA Post Harvest Fisheries Research Programme
PFT	Petty Fish Traders
RNRRS	Renewable Natural Resources Research Strategy
SEU	Social and Economic Unit
SRC	State Resource Centre

Appendix H

CLEANER FISHERIES HARBOURS PROJECT (IMO)

ANNUAL REPORT 1996 & WORKPLAN 1997

Objective : The development objective of the pilot project is to promote participatory pollution mitigation by the various stakeholders connected with the operation of selected fishery harbours in the Maldives and Sri Lanka

The immediate objective of the pilot project is to create an awareness among the various stakeholders of the need for, benefits of and the methods of achieving a clean harbour environment and sanitary handling of fish landed at selected harbours in the Maldives and Sri Lanka.

Status March **1996** : In 1994 the third in the series of pilot projects supported by the International Maritime Organization (IMO) to promote cleaner fishery harbours, commenced in the Maldives and Sri Lanka, All project activities were coordinated and implemented by national agencies nominated by the respective governments with support from **BOBP**. In the Maldives the nominated agency was the Marine Research Section (MRS) of the Ministry of Fisheries and Agriculture (MOFA) and in Sri Lanka it was the National Institute of Fisheries Training (NIFT) of the Ministry of Fisheries and Aquatic Resources Development (MFARD). The project budget was US \$ 90,000

In Sri Lanka the location of the pilot project was changed from the Galle Harbour to the Negombo Harbour at the request of MFARD. Under contract, NARA undertook a baseline study to better understand and collect information on the activities in the fishery harbour, the types and levels of pollution, the sources of pollution and existing facilities for reception and disposal of wastes. The National Institute for Fisheries Training (NIFT), with the assistance of the District Fishery Extension Office, the staff of the Fisheries Training Centre in Negombo and the local fisheries cooperative society, conducted a knowledge, attitude & practice (KAP) study using focus groups among the various stakeholders.

In the Maldives the preparatory work for implementing the awareness campaign started with an inter-ministry meeting to facilitate better coordination and to apportion responsibility for inputs required to achieve a cleaner harbour environment. To augment this integrated approach MRS entered into an agreement with a local NGO, VESHI—Volunteers for Social Harmony and Improvement—which will actively involve itself with the awareness campaign. While the study (KAP) to determine the perception of the stakeholders was designed and scheduled for 1995, the national CLEAN-UP DAY, in September, was used to kick off the campaign. The campaign involved the public. Floating and submerged debris from Male harbour was removed, leaflets were distributed and billboards put up to convey the cleaner fishery harbour message.

In 1995, the project's counterpart staffer from NIFT left service, and given the preoccupation of the other staff, BOBP in consultation with MFARD contracted the Information Unit of the

National Aquatic Resources Agency (NARA) to continue the project activities in formulating and preparing the awareness building materials. NARA staff began preparations and the content of the awareness campaign in Sinhala was completed. However, there were problems in finding artists who could illustrate the materials, and the BOBP Consultant had to spend time working with NARA *staff* to select artists and brief them. Further, the security situation in the country and the non-availability of counterpart staff, due to other preoccupations, delayed the project considerably.

In the Maldives, the project made relatively better progress. Billboards were prepared and set up in Male and in a few selected fish landing sites in the outer atolls. The design and development of other campaign materials was completed by MRS utilizing the services of the NGO, VESHI. MOFA decided that the implementation of the awareness campaign will be handled by MRS and VESHI within the framework of the Small Island Development Programme of the Public Works Department and it was expected that efforts would be taken during 1996.

The IMO informed the BOBP that this would be the last of the pilot projects that they would be able to support, due to fund constraints. However, keeping in mind the importance of the activity to the region, and in order to share the learnings of the three pilot activities, the IMO made available a further allotment of US \$ 50,000 to develop a manual, a video supplement to the manual to promote cleaner fishery harbours and to hold a small sub-regional meeting to discuss the manual's recommendations.

Workplan 1996

- Completion of awareness campaigns in the Maldives and **Sri Lanka**.
- National Workshops in the Maldives and **Sri Lanka** to discuss the learnings of the pilot activities and to consider possible replication and extension through national efforts.
- Design, development and production of a manual for pollution mitigation and integrated management of fishery harbours.
- Design, development and production of a video film to supplement the manual and to promote cleaner fishery harbours.
- Sub-regional workshop to discuss the manual's recommendations and regional and national efforts in the future to promote cleaner fishery harbours.

Progress 1996

The development and production of awareness materials and the planning of the awareness campaigns in the Maldives and Sri Lanka progressed slowly due to various unavoidable reasons such as the security situation in Sri Lanka and other preoccupations of counterpart staff in both the countries. However, the development of awareness materials has been completed in Sri Lanka and the Maldives and production is in process and is expected to be completed early in the first quarter of 1997.

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In the Maldives the preparatory work for implementing the awareness campaign started with an inter-ministry meeting to facilitate better coordination and to apportion responsibility for inputs required to achieve a cleaner harbour environment. To augment this integrated approach MRS entered into an agreement with a local NGO, VESHI—Volunteers for Social Harmony and Improvement—which will actively involve itself with the awareness campaign. While the study (KAP) to determine the perception of the stakeholders was designed and scheduled for 1995, the national CLEAN-UP DAY, in September, was used to kick off the campaign. The campaign involved the public. Floating and submerged debris from Male harbour was removed, leaflets were distributed and billboards put up to convey the cleaner fishery harbour message.

In 1995, the project's counterpart staffer from NIFT left service, and given the preoccupation of the other staff, BOBP in consultation with MFARD contracted the Information Unit of the

National Aquatic Resources Agency (NARA) to continue the project activities in formulating and preparing the awareness building materials. NARA staff began preparations and the content of the awareness campaign in Sinhala was completed. However, there were problems in finding artists who could illustrate the materials, and the BOBP Consultant had to spend time working with NARA staff to select artists and brief them. Further, the security situation in the country and the non-availability of counterpart staff, due to other preoccupations, delayed the project considerably.

In the Maldives, the project made relatively better progress. Billboards were prepared and set up in Male and in a few selected fish landing sites in the outer atolls. The design and development of other campaign materials was completed by MRS utilizing the services of the NGO, VESHI. MOFA decided that the implementation of the awareness campaign will be handled by MRS and VESHI within the framework of the Small Island Development Programme of the Public Works Department and it was expected that efforts would be taken during 1996.

The IMO informed the BOBP that this would be the last of the pilot projects that they would be able to support, due to fund constraints. However, keeping in mind the importance of the activity to the region, and in order to share the learnings of the three pilot activities, the IMO made available a further allotment of US \$ 50,000 to develop a manual, a video supplement to the manual to promote cleaner fishery harbours and to hold a small sub-regional meeting to discuss the manual's recommendations.

Workplan 1996

- Completion of awareness campaigns in the Maldives and Sri Lanka.
- National Workshops in the Maldives and Sri Lanka to discuss the learnings of the pilot activities and to consider possible replication and extension through national efforts.
- Design, development and production of a manual for pollution mitigation and integrated management of fishery harbours.
- Design, development and production of a video film to supplement the manual and to promote cleaner fishery harbours.
- Sub-regional workshop to discuss the manual's recommendations and regional and national efforts in the future to promote cleaner fishery harbours.

Progress 1996

The development and production of awareness materials and the planning of the awareness campaigns in the Maldives and Sri Lanka progressed slowly due to various unavoidable reasons such as the security situation in Sri Lanka and other preoccupations of counterpart staff in both the countries. However, the development of awareness materials has been completed in Sri Lanka and the Maldives and production is in process and is expected to be completed early in the first quarter of 1997.

The National Workshops in the Maldives and Sri Lanka to bring together stakeholders and to discuss the learnings of the pilot activities were planned and will be executed during the first six months of 1997.

For the design, development and production of a manual for pollution mitigation and integrated management of fishery harbours, BOBP undertook efforts to discuss the contents with the counterparts and consulted a specialist on fishery harbours management, Mr J Sciortino. The efforts have resulted in clarification and fine-tuning of the objectives and a clear plan of development which will be executed during the first half of 1997. The discussions suggested that the video film and the sub-regional workshop could be dropped and the available funds be used more optimally to develop a good manual which could then be used to disseminate the learnings of the pilot activities and enable fishery harbour managers of the region to work towards cleaner fishery harbours.

Discussions were held with counterparts in Sri Lanka and Maldives and an indicative **workplan for 1997** was drawn up with a view to conclude and report on the activity by mid 1997.

Indicative Workplan for 1997

- Completion of production of awareness materials in Sri Lanka and Maldives.
- National Stakeholder Workshops in the Maldives and Sri Lanka to discuss the learnings of the pilot activities and to consider possible replication and extension through national efforts.
- Design, development and production of a manual for pollution mitigation and integrated management of fishery harbours, to disseminate the learnings of the pilot efforts in the region.
- Conclude and report on the project.

Appendix I

TERMS OF REFERENCE

JOINT EVALUATION MISSION BY DONOR GOVERNMENTS (Denmark and Japan) AND FAO

ON

BOBP Programme “Coastal Fisheries Management in the Bay of Bengal” GCP/RAS/150/DEN and GCP/RAS/151/JPN

BACKGROUND

The Bay of Bengal region, while quite diverse in socio-political and cultural terms, is unified by the similarity of tropical fishery ecosystems, predominant presence of small-scale fisherfolk, and often similar problems and opportunities.

The countries bordering the Bay of Bengal are Bangladesh, India (East Coast), Indonesia, (Provinces of Aceh, North Sumatra and Riau in Sumatra), Malaysia (Peninsular West Coast), Myanmar, Sri Lanka and Thailand (West Coast). The Maldives, while not in the Bay of Bengal, has a lot in common with India and Sri Lanka and is deemed to be one of the Bay of Bengal states from a fisheries point of view.

The fisheries of the region are dominated by the small-scale sector with respect to number of craft and employment. The entire fleet consists of some 300,000 units, the bulk of which are small traditional non-motorized boats and motorized craft. The total marine fish production in the Bay of Bengal is in the order of 2.7 million t/year. The general picture from the eighties is that the production curve was leveling off and in some areas turning downwards. (It is only in the Maldives where there is still a rising production trend.) This is so despite a continuous increase in the fishing effort through new craft and more efficient catching methods. Therefore, most of the fishery resources in the region are heavily exploited and if the fishing is allowed to continue unregulated, the situation will worsen and certain resources might be depleted with disastrous consequences for the fisherfolk. In some countries, this process is accelerated by the issue of subsidies and other incentives by the governments to fisherfolk to acquire new craft and gear.

The high pressure on the resources has also led to serious social conflicts among competing sub-sectors of the fisheries, mainly between the trawl and purse seine fisheries on one hand and the small-scale and traditional fisheries on the other. While the over-riding problem facing the fishing communities is the sustainability of the fishery resources, the policies, strategies and measures for their management are still in their infancy.

Another threat to the resources is environmental degradation. It is as yet difficult to quantify the problem but fish diseases and mortality caused by pollution have been observed locally in the vicinity of urban and industrial centers. Shellfish in particular, are being affected by pollutants in the water. Even more serious is the destruction and pollution of mangrove and backwater areas which are the nursery grounds for many fish and shrimp species. This is caused by many competing users of these areas: increasing populations, industries, farmers, tourists and fish and shrimp farmers.

Based on the above considerations, the BOBP programme Phase III was approved. BOBP is a multi-disciplinary umbrella programme providing technical assistance in the region since 1979. It is based in Madras, India. Participating countries are Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka and Thailand. The counterpart agencies are the Departments of Fisheries or equivalent in participating countries.

Phase I and Phase II consisted of several projects funded by different donors (SIDA, DANIDA, ODA of UK, UNDP, AGFUND, IMO, UNFPA) and the principal feature was development of methodology and technology for small-scale fisheries. The first phase was oriented towards technology, the second dealt primarily with extension, and the ongoing third phase is concerned with fisheries management.

Phase III started in May 1994 with funding from DANIDA (*GCP/RAS/150/DEN*) and Japan (*GCPIRAS/151 /JPN*), for a duration of five years. The two donors agreed to a total contribution of US\$ 1,500,000 each. DANIDA recently released to the programme also savings from Phase II project *GCP/RAS/1 18/DEN* in the amount of US\$ 250,000.

Member Countries continue their yearly cash contributions towards BOBP Information Service (*GCPIRAS/1 17/MUL*) in the range of US\$5,000- US\$ 20,000 each depending on the individual countries' resources. The United States Environmental Agency (EPA) has been contributing since November 1994 to the partial funding on a 50% cost-sharing basis (US\$ 84,000) of the post of Coastal Zone Management Advisor for two years. IMO contribution towards "Cleaner Fisheries Harbours" is concentrated in a few countries (India, Maldives, Sri Lanka and Thailand) and will come to an end this year. The ODA "Post Harvest Fisheries Project", which covers only Bangladesh, India, and Sri Lanka, is also in its 3rd phase, and is presently scheduled to end in March 1998.

The **development objective** of BOBP Phase III is sustainable development in coastal communities. This is a common objective of the participating countries but the mix of inputs required to achieve the objectives may vary from one country to another and also within the countries. The four principal inputs are:

- (i) fisheries management;
- (ii) economic diversification;
- (iii) infrastructure and social services; and
- (iv) environmental protection.

The economic diversification includes development of aquaculture and post-harvest fisheries.

This project is primarily concerned with the first issue (fisheries management) but will promote other inputs and co-ordinate its work with such efforts.

The immediate objective is:

Increased awareness and knowledge of the need, benefits and practices of fisheries management among institutions and people concerned at all levels and in all sectors of major relevance to marine fisheries and coastal fishing communities.

All the activities of the programme are to be implemented through the national institutions in the respective countries responsible for fisheries management and related subjects. BOBP will therefore be closely coordinated with and supplementary to any ongoing national efforts.

BOBP reports at the beginning of each calendar year to the Advisory Committee, consisting of representatives of participating countries, the donors, and the executing agency. The Committee also advises on the orientation and priorities for activities, provides guidelines and endorses annual work plans.

During 1994, the member countries' fishery agencies undertook detailed **Situation Analyses of the coastal fisheries** in their respective countries, in order to identify and prioritize problems that they would want to address with the assistance of the programme. The Situation Analyses submitted by the member countries were discussed at a regional workshop held in Madras in December 1994, and the proposed prioritized problems were submitted for the consideration of the Advisory Committee of the BOBP. Prior to the Situation Analyses Workshop, in conjunction with the appointment and briefing of the project staff at FAO HQs, a meeting was held in Rome to map out the strategies for this third phase of BOBP.

The project assisted and provided a **secretariat to the IOFC-BOBC Subgroup on Research Needs and Project Ideas for Coastal Fisheries and Aquaculture Development and Management in the Bay of Bengal Region**. The report of the Subgroup "Towards Sustainability" was completed and submitted to the 9th Session of the IOFC-BOBC held in Jakarta, Indonesia, in January 1995 in conjunction with 19th Advisory **Committee Meeting (ACM) of the BOBP**. The report describes the situation in fisheries and coastal aquaculture, identifies and prioritizes the problems and constraints, and proposes several project ideas which could be considered by the member countries and donors, with national and regional implementation configurations.

The 19th ACM of BOBP reviewed and ratified the problems that had been prioritized by the member countries in their Situational Analyses and approved the approaches and workplan proposed by BOBP. During the course of 1995 BOBP staff initiated preparatory activities in all seven member countries. Counterpart agencies and the allocated national staff responsible for the implementation of the project activities were trained and directly involved in stakeholder identification, stakeholder analysis and stakeholder perception analysis studies. The findings of

studies undertaken in the selected pilot areas have been used to design the communications and awareness building campaigns to start in the course of 1996.

Detailed workplans were thereafter drawn, endorsed by member countries at the 20th ACM of BOBP in March 1996, and activities are at various stages of initiation/implementation in all seven countries. Target operations have been agreed to as follows:

- (i) fisheries and non-fisheries options, alternative to detrimental fisheries in Bangladesh;
- (ii) alternative to existing trawler fishing fish in the states of Tamil Nadu and Orissa as well as aquaculture in the states of Andhra Pradesh and West Bengal, India;
- (iii) multi-resource use in model fishing village for Tapanuli Bay fisheries in Indonesia;
- (iv) integrated management of Pulau Payar Marine Park in Malaysia;
- (v) integrated reef resources management plan in the Maldives;
- (vi) management of ornamental fish fisheries in Sri Lanka;
- (vii) model community-based fisheries management system at Phang-Nga Bay in Thailand.

Most countries' development plans already include these projects, and national agents will implement them with catalytic technical, information, advisory inputs by BOBP, as required.

The results of the above projects will progressively complement BOBP regional activities towards:

- (i) skill gap analysis and training needs assessment;
- (ii) survey on values, perceptions and attitudes towards fisheries of stakeholders at all levels and including coastal aquaculture and post-harvest;
- (iii) development of adapted mass multi-media and multi-state communication channels and establishment of community learning centers for fisheries and aquaculture management;
- (iv) participatory coastal fisheries management (CFM) linkages in an Integrated Coastal Zone Management (ICZM) framework;
- (v) management and evaluation system for project implementation and impact assessment on stakeholders beneficiaries;
- (vi) information service.

The programme collaborates with other regional agencies, particularly INFOFISH, NACA and SEAFDEC.

This mid-term evaluation takes place in conformity with the requirements of the project document. Its timing was recommended at the 20th BOBP Advisory Committee meeting (Langkawi, Malaysia, March 1996).

PURPOSE AND SCOPE OF THE EVALUATION

Purpose of the Evaluation

The evaluation will examine experiences and results of the BOBP programme to date. Its findings and recommendations should help parties concerned to have a better insight into aspects requiring improvement as well as anticipated impact of results towards sustainability.

Scope of the Evaluation

The primary scope of the evaluation is to:

- assess the effectiveness of the programme in realizing its immediate objectives and the extent to which they have set the foundation for, achieving the long-term development objective;
- assess how adequately the immediate objectives of the programme are being attained and how effective they have been or are likely to be in helping to achieve the relevant development objective;
- review the efficiency and adequacy in implementation and management of the programme;
- identify the factors which may have facilitated or deterred the achievement of the programme's immediate and ultimate objective;
- assess the likely relevance and application of the knowledge gained by participating governments and institutions through the programme;
- determine the extent of effort and life span still necessary for the participating countries to attain self-sufficiency in planning, managing and monitoring development and management of small-scale fisheries.

In carrying out the evaluation, the following points should be addressed with particular emphasis:

- (a) Clarity, continuing priority and realism of the programme's development and immediate objectives, including specification of targets, identification of beneficiaries, linkages with other projects, and prospects of sustainability;
- (b) Quality, clarity and likely efficiency of design of the programme including:
 - any major changes which might have a bearing on the continued relevance of the programme;
 - clarity of specification of inputs, activities and outputs (quality, quantity and time frame);

- logical consistency between provision of inputs, execution of activities, production of outputs and progress towards achievement of objectives;
 - the managerial and institutional framework for implementation of the workplan.
- (c) Efficiency, problems and successes of the programme implementation, including:
- the managerial and institutional framework for implementation of the workplan.
 - quality and timeliness of input delivery;
 - managerial and work efficiency;
 - implementation difficulties;
 - realization of important prior obligations and assumptions;
 - adequacy of monitoring and reporting;
 - quality and quantity of administrative and technical support by FAO;
 - degree of involvement, co-operation, support and commitment by the governments and integration with other related projects;
 - extent and adequacy of FAO's support in terms of provision of all the requisite inputs.
- (d) Results of the programme, including:
- the managerial and institutional framework for implementation of the workplan.
 - a full and systematic statement of outputs produced (quantity and quality) as compared with workplans, including appropriateness of the location of activities, relevance of technical choices, services provided by the programme and output of trained manpower;
 - progress towards achievement of development and immediate objectives, including prospects for sustainability and the contribution to institution building in terms of technical and managerial capabilities of counterpart bodies;
 - any unplanned effects;
 - any significant elements that can be applied to improve the programme performance.

COMPOSITION, TIMING AND ITINERARY OF THE MISSION

Composition of the Mission

The mission will be composed of **one** representative of Danida, who should be leader, one representative of Japan, and one representative of FAO. **Each participant should have experience**

of coastal fisheries development, with particular emphasis on fisheries and coastal aquaculture management, in developing countries and in the context of-integrated coastal zone management.

The Government of each visited country is invited to associate itself with the mission's work.

Timing and Itinerary of the Mission

The evaluation mission should take place in April/May 1997. The duration of the mission will be 50 days.

The mission will travel to all participating countries to visit projects' sites, and **for consultations** with government representatives and project staff, FAO Representatives, Representatives of DANIDA and Japan, relevant bodies and institutions involved. The Programme Management will prepare and communicate the exact travel schedule They will thereafter spend one week at the Programme Headquarters for preparation of a complete draft report.

Two days should be spend for a joint briefing and debriefing to be held either at FAO Headquarters in Rome, or at the FAO Regional Office for Asia and the Pacific, or at the Programme Headquarters. The location will be determined once members are nominated on the basis of best cost and time effectiveness.

REPORTING

The mission leader will have the end responsibility for the final writing, editing and production of the report.

The report should follow the attached outline. The final version of the report should be delivered to FAO Headquarters within 10 days of debriefing for onforwarding to the concerned parties. The FAO member in the mission will be responsible for submitting the evaluation summary sheet during debriefing in Rome.

Appendix J

BOBP'S CATALYTIC ROLE IN AQUACULTURE MANAGEMENT: NURSING AND CARING FOR THE ENVIRONMENT

Introduction and Background

BOBP's Third Phase mandate and programme thrust in integrated coastal fisheries management is inevitably intertwined with coastal aquaculture. This is simply because integrated coastal fisheries management cannot be carried out without affecting coastal aquaculture, either directly or indirectly. The very concept of an integrated approach to coastal fisheries management implies the need to address all possible and relevant activities, influences (adverse or otherwise) which impinge on coastal fisheries. Further, coastal aquaculture is not only an attractive alternative to coastal capture fisheries, it can be employed as an approach to and tool of fisheries management. As a result of this close relationship, BOBP member countries have repeatedly requested the Programme to also incorporate coastal aquaculture in its work with member countries. Various other reasons can also be cited for it.

Aquaculture today is more severely scrutinised and criticised compared to, any other primary industry production practice. Even though aquaculture has a long history, dating back almost 4000 years ago, it is only recently that its modernisation has taken off with the successful closing of the life history and cycles of more and more species of fish (used generically here to include all aquatic organisms), and the improved understanding of the nutrition, feed and feeding requirements of such species and accordingly the formulation of artificial diets for them.

Aquaculture's present predicament and dilemma have been self-inflicted, especially shrimp aquaculture. What is even more disconcerting and dismal is that shrimp aquaculture has been equated and held as synonymous to aquaculture. The image of aquaculture held by the public, in particular environmental pressure groups and the largely faceless or anonymous public is that aquaculture is the villain of the environment. What was at one time the promise and hope of fisheries in supplementing the continuing declining supply from capture sources, culture fisheries or aquaculture is showing signs of stress, its carrying capacity breached. It has even lost some of its broad socioeconomic and commercial appeal.

Aquaculture's worsening image is also not helped by the visibly few or limited number of species under production. Although there are other species which can be cultured to produce food for the poor, especially those herbivorous species which feed low in the foodchain, aquaculture is clearly and visibly dominated by mainly shrimp, for no other reasons than its high profitability in contrast to these other under-utilised species. The seduction of huge profits from aquaculture as an investment was too overpowering.

Contrary to popular thinking, aquaculture, like all production systems faces tremendous pressures to increase efficiency to increase output per unit of input. There is nothing wrong in improving

efficiency. Here, efficiency refers to both technical and economic efficiency. It is when the pursuit of both the technical and economic efficiencies are pushed to the extreme or their limits, driven by greed and not tempered and are inflicted by responsible behaviour that the most damage and destruction to the industry.

Aquaculture's future is uncertain and being opposed because of the serious outbreaks of disease and the widespread degradation and impairment of the aquatic resource system and environment. Large tracts of virgin mangrove real estate and wetlands were irresponsibly appropriated and haphazardly converted into fish farms. In fact, even prime agricultural land was not spared. In the latter case, sea water was indiscriminately brought inland through all manner of land remodelling and water delivery. In the beginning, (widespread) aquaculture extensification and intensification were environmentally benign and seemingly harmless. Its economics were attractive, in fact more attractive than many agricultural enterprises. But as the carrying capacity of the aquatic resource system and environment was stretched, signs of environmental stress begin to show up.

First, there was the plateauing or levelling of productivity, followed by drastic decline in productivity. Then, minor outbreaks of diseases which were overcome by liberal doses of antibiotics and other chemo-therapeutics. This was to be followed by steadily spreading outbreak of the environmental ulcerative fish disease syndrome. The most recent economic blow was the widespread outbreak of all manner of shrimp diseases, bacterial and viral – with no let up until today.

A major lesson to be learned is that Nature cannot be pushed. It has its own way and time path. To address this issue, more aquaculture research and development (R&D) are needed to determine the carrying capacity of aquaculture.

Aquaculture can be a self-polluting industry. However, it is BOBP's view that aquaculture, including shrimp aquaculture can be a self-cleaning industry if proper crop sanitation and farm management, including regular repair and maintenance are observed and rigorously practised. When the Malaysian Prime Minister, Dr. Mahathir Mohamad, a recent recipient of the Jawaharlal Nehru Award for International Understanding for 1994, was asked why as a non-legal professional, he was able to do better as a politician, his immediate reply was that as a doctor, his job is to cure. To this, can be added, also to nurse. Towards this end, aquaculture simply has to do better to gain and/or regain every stakeholder group's confidence and support, especially environmentalists' support. After all, what is the human purpose of aquaculture?

Request for BOBP Assistance in Aquaculture

Given the severity of the present aquaculture problems, continuing or unresolved constraints to expanded fish production, notably from aquaculture means, abandoned and/or idle fish farms, not to mention the economic losses inflicted on the aquaculture industry, BOBP member countries have repeatedly requested BOBP which is a field programme to assist in addressing these issues and concerns to alleviate the problems and constraints confronting them as well as working out possible solutions.

As a general operating procedure for a field programme, BOBP not only attempts to respond but also anticipates and proacts to evolving or emerging trends and patterns of the industry's changing structure, conduct and performance. This is in spite of the present mandate of the Third Phase of BOBP which precludes any BOBP assistance in aquaculture because the Third Phase resources do not provide for them. This was raised at the 19th Advisory Committee Meeting of the BOBP in Jakarta in 1995 and was referred to the 9th Session of the Bay of Bengal Committee of the Indian Ocean Fishery Commission. The Committee endorsed and supported the re-incorporation of the aquaculture mandate into BOBP Third Phase and we quote:

“The Committee agreed that, in view of the importance of coastal aquaculture in the region, this topic should be included in the mandate of BOBP and that renewed effort should be made to secure funding.”

Stepping Up Search for Aquaculture Funds

Both the BOBP and BOBC Committees FAOIUN need to step up their individual and collective effort to attract donor interests and financial support to implement the additional mandate in aquaculture. This is especially because the present resources of the BOBP Third Phase are inadequate to do justice to the new tasks in aquaculture management.

Proposed Terms of Reference for BOBP Aquaculture Mandate

With the present resources and staff limitations, BOBP can only devote and provide expertise in Aquaculture Economics, including Farm Management Economics and Extension, and Stakeholder Analysis. To date, this in-house expertise has been provided on a case-by-case need basis. BOBP does not have any other in-house technical expertise in aquaculture except for economics and extension communication. Through Stakeholder Analysis, **BOBP** has also been instrumental in bringing to the discussion table different groups of stakeholders, active and passive or even disinterested or indifferent ones to begin the process of stakeholder consultation and perception analysis to forge a common ground and basis in developing a consensus on issues, problems and solution options.

Consistent with BOBP Third Phase mandate in fisheries management, the aquaculture mandate of BOBP would emphasize and focus on aquaculture management. This is simply because for any resource- and/or technology-based industry, clearly disciplined farm management input is needed to minimize system breakdown, disrepair and poor maintenance of the production system, and environmental impairment and degradation. The need for repair and maintenance becomes obvious and in the long run economical. Since the aquaculture industry itself has so far not been sufficiently disciplined and responsible to practise proper crop sanitation and farm management, it has actually brought on the present environmental woes on itself.

The green lobby naturally is doing its job to ensure that the resource use integrity of the environment is protected, and rightly so. In fact, the industry should acknowledge the role and contribution of the green lobby. As responsible producers and consumers, each one of us should not only be appreciative of our natural resource endowment but also be protective of it. Our foreparents were responsible stewards and trustees of the resources they were endowed with and relied on for their food and livelihood security.

BOBP would seek collaboration with other liked-minded agencies in meeting the need for aquaculture assistance in its member countries. Both ICLARM, NACA and SEAFDEC with their different expertise and comparative strengths in various areas of aquaculture disciplines at the international and regional level, and national institutes with expertise in aquaculture will be invited to collaborate with BOBP. It is BOBP's operating policy to avoid duplication of effort.

Possible regional **project ideas are as follows:**

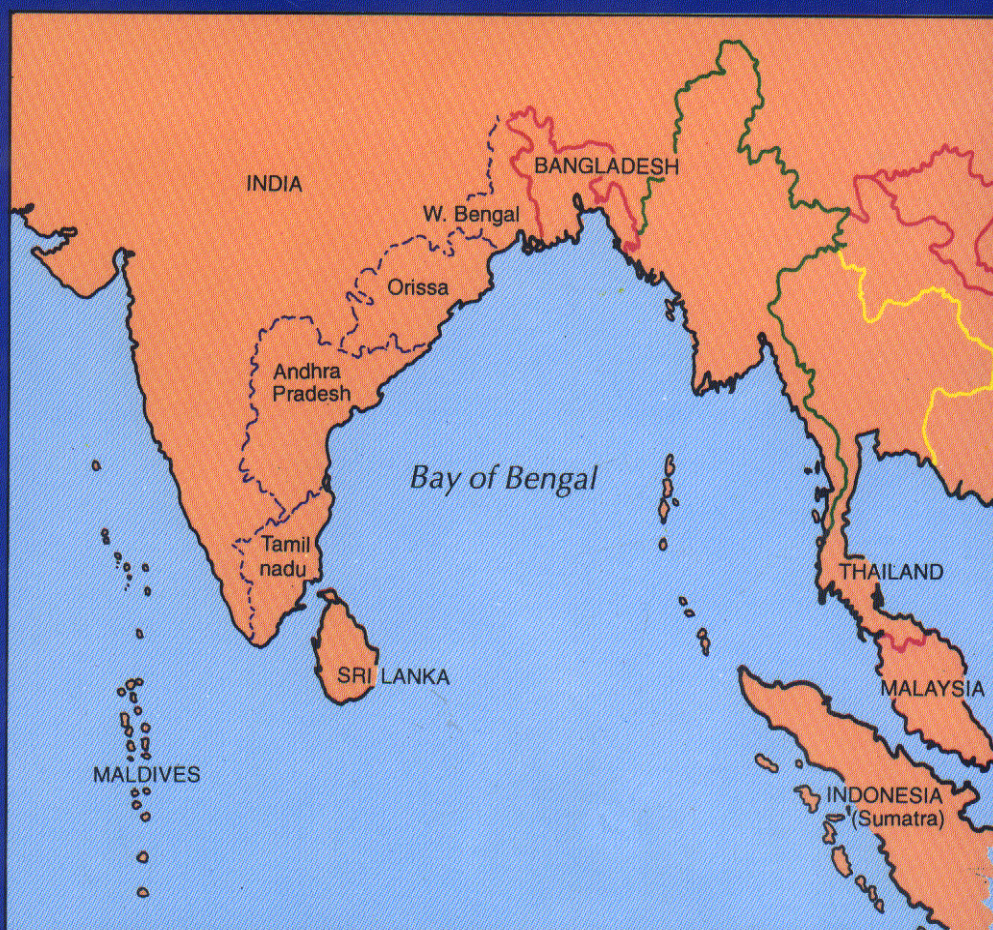
01. Integrative Research Approach to Determine the Carrying Capacity of Aquaculture
02. Aquaculture Farm Management Economics and Extension
03. Science- and Technology-Driven Aquaculture Extensification and Intensification (or Knowledge-Intensive Aquaculture)

Concluding Remarks

Even though aquaculture has a long history, it is only beginning in the mid-1970s that its development has rapidly and 'feverishly' been accelerated. Along with this rapid feverish acceleration of its development, in particular area expansion or extensification, intensification was similarly intoxicatedly stepped up. Because land and other inputs were undervalued, extensification and intensification were undoubtedly highly profitable and thus intoxicatedly pursued, to say the least. More image-damaging to aquaculture is the wide gulf between the large profit margins reaped by the owners of shrimp farms and the contrasting meagre wages paid to the labour of these shrimp farms. This stark **owner-management-labour contrasting** and contradictory dichotomy is further compounded from the limited or non-involvement of the members of the local community in shrimp farm employment where the farms are sited. More prominently, the local community was displaced from traditional land settlements where shrimp farms have taken over.

Aquaculture extensification and intensification came about with the advent of modern scientific and technological advances in closing the life cycle/history of more and more species, as well as in the improved understanding of the feed and feeding requirements and the formulation of artificial diets of aquatic organisms since the mid-1970s. To avoid making the same mistakes, science- and technology-driven extensification and intensification consistent with the integrity of the environmental carrying capacity would be pursued.

However, BOBP is faced with a dilemma. While the member countries see aquaculture, especially coastal aquaculture as a high priority and growing problem of the industry, BOBP could not respond to member countries' need for assistance. Coastal aquaculture is closely connected to our work in coastal fisheries management. That is to say, coastal fisheries management cannot be carried out without having to address coastal aquaculture management. BOBP presently cannot do justice to the latter without additional funds and/or additional expertise. The Advisory Committee is requested to advise and guide future action by BOBP in the area of aquaculture.



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