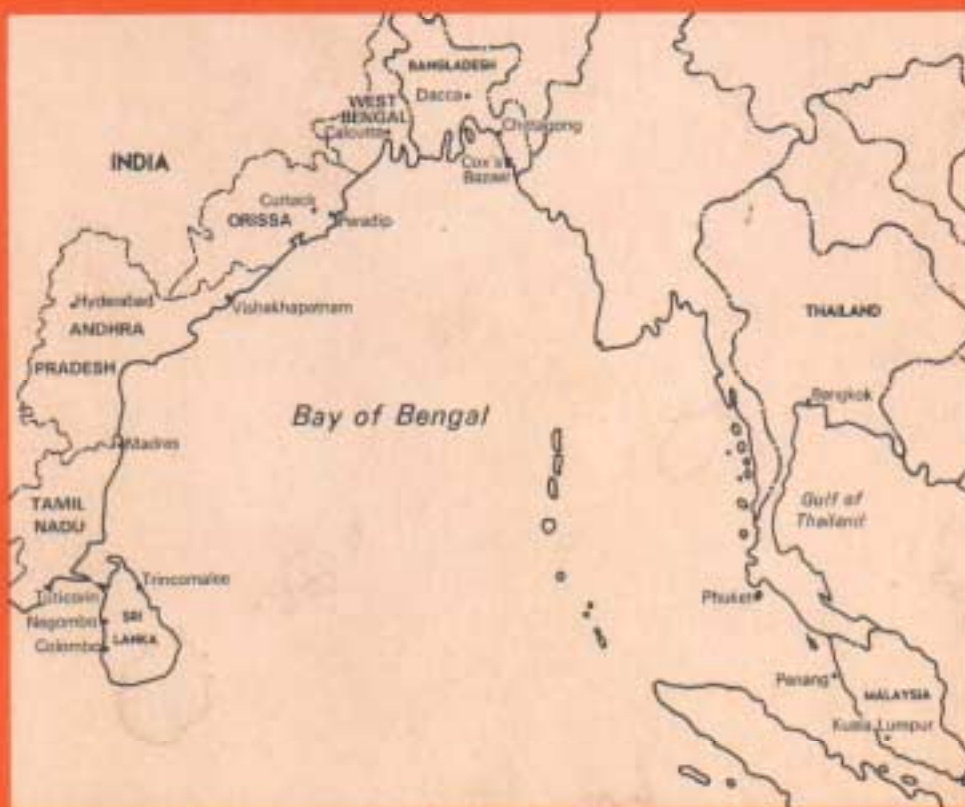


Report of the Sixth Meeting of the Advisory Committee

Colombo, Sri Lanka
1-5 December, 1981



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the Sixth Meeting
of the
Advisory Committee

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Executing Agency :
Food and Agriculture Organisation
of the United Nations

Funding Agency :
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Development of Small-Scale Fisheries in the Bay of Bengal
Madras, India, February 1982

PREFACE

This document is the report of the sixth meeting of the Advisory Committee of the Bay of Bengal Programme for Small-Scale Fisheries Development, referred to in brief as the Bay of Bengal Programme (BOBP). The meeting was hosted by the Government of Sri Lanka and held in Colombo, Sri Lanka, December 1-5, 1981.

The report records the deliberations and conclusions of the meeting and was approved by the Committee.

The report includes a summary of progress made by the Bay of Bengal Programme in 1981, the third year of operation. It therefore serves as a source of reference to officials of fisheries agencies of the countries concerned and might also interest other institutions and individuals engaged in small-scale fisheries development, particularly in the Bay of Bengal region.

The Bay of Bengal Programme, GCP/RAS/040/SWE, is a regional FAO programme funded by the Swedish International Development Authority (SIDA) and executed by the Food and Agriculture Organization of the United Nations (FAO). Five countries are members — Bangladesh, India, Malaysia, Sri Lanka and Thailand. The aims of the BOBP are to develop and demonstrate appropriate technologies and methodologies to improve the conditions of small-scale fisherfolk and to increase the supply of fish from the small sector in the member countries.

The BOBP's Advisory Committee is composed of representatives of the five member countries plus representatives of FAO and SIDA. The committee meets once a year. Earlier meetings were held in Colombo (1976), Madras (1977), Chittagong (1978), Phuket (1979) and Penang (1980).

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REPORT OF THE SIXTH MEETING OF THE ADVISORY COMMITTEE

Colombo, Sri Lanka, 1 - 5 December 1981

1. The meeting was convened at the Mount Lavinia Beach Hotel, Colombo. A list of the participants is attached as Appendix 1.
2. Mr. Mazlan Jusoh of Malaysia, representing the chairman of the Fifth Advisory Committee, called the meeting to order and requested Mr. Sunil Abeysundera, Deputy Minister of Fisheries, Sri Lanka, to inaugurate the session by lighting the traditional oil lamp and addressing the meeting.
3. Mr. Sunil Abeysundera noted that Sri Lanka had actively participated in the activities of the Bay of Bengal Programme since its inception and gave assurance of continued participation and fullest support in the future. Sri Lanka accorded high priority to fisheries development. The energy crisis was affecting the viability of fishing operations and it had become urgently necessary to find solutions to the problem. The Bay of Bengal Programme's strategy to develop and demonstrate appropriate technologies in several areas such as craft, gear and fish utilisation was valuable and relevant in this context, and significant advances had been achieved in the development of cheaper and more efficient gear for large-mesh driftnetting, experimental fishing for demersal species, inboard motorization of small craft and development of fuel-efficient beachlanding craft. He expressed his gratitude to SIDA for funding the Programme which was of special relevance to fisheries development in Third World Countries. He thanked FAO for the projects executed in Sri Lanka and other countries of the region and hoped that the new Committee for the Development and Management of Fisheries in the Bay of Bengal will establish close links with the Programme. He concluded by expressing the hope that the deliberations of the Committee will provide guidance and support for the Programme and by wishing the participants a pleasant stay in Sri Lanka.
4. Mr. Lars Augustinson, Deputy Chief, Agriculture Division, SIDA, Stockholm, recalled that he had been a member of the first mission to the Bay of Bengal region in 1974 which assessed the prospects and content of a small-scale fisheries development project. There had been some changes in the original concept such as the omission of fish utilization and the inclusion of coastal aquaculture. He noted that the Programme's achievements in the fields of fishing craft and gear technology and the approach to information were very imposing ; there were promising activities in coastal aquaculture and extension while community development activities were progressing slowly. It had been a pleasure for him to present the status of the Programme to the Fisheries Board last September in connection with the proposal to continue support to the Programme for the next two years. The interest of the Board had been very positive and the progress made had been well appreciated in the discussions, He stressed the increasing importance attached by the Board to efforts for community development in the field of fisheries-this concerns projects which would secure the prospects of a better future for the small-scale fishermen. He hoped that the Committee would provide guidance and make recommendations in this regard for improvement of the content and quality of the Programme. He concluded by conveying to the Committee greetings from Ms. Elsa Liljeberg who had been present at all previous meetings and had been a strong supporter of the Programme.
5. Mr. N. Kojima, Director of Operations, Department of Fisheries, FAO, Rome, thanked the Government of Sri Lanka for hosting the meeting and expressed his pleasure, that, following the evaluation of the BOBP by a joint review mission at the end of 1980, SIDA had agreed to continue its funding for a period of two years. He pinpointed five major issues to which the Committee might address itself in order to ensure the maximum results from the Programme in the remaining years. The first issue was to consider the adjustments needed to be made within the four main subject matters to secure the best possible progress during the next two years. Secondly, guidance of the Committee was necessary regarding the manner in which the technological improvements made by the Programme could be effectively translated into increased incomes for small-scale

fisherfolk. Thirdly, it was necessary to examine ways and means of disseminating effectively the experiences gained in one country to the others and to further promote technical cooperation between the respective countries. Fourthly, the relationship of the BOBP to the new inter-governmental Bay of Bengal Committee and the related UNDP project, should be examined. Fifthly, the follow-up required beyond 1983.

He stated that FAO would greatly appreciate the views of the Committee and its guidance in respect of these issues during the meeting and expressed the hope that a lasting result for the development of small-scale fisheries could be ensured, as an outcome of this Programme.

6. Following the proposal of Bangladesh, seconded by Thailand, the Committee unanimously elected Mr. Aloy Fernando, Additional Secretary, Ministry of Fisheries, Sri Lanka, as Chairman for the meeting.

7. The chairman thanked Mr. Mazlan Jusoh, the outgoing chairman, for presiding over the inauguration and the Committee for the honour done to him by selecting him chairman.

8. A drafting committee with representation from each participating country was appointed to facilitate the preparation of the report of the meeting.

9. The agenda was approved as proposed and is attached as Appendix 2.

Field Seminar

10. On the second day of the committee session, a field seminar was conducted in conjunction with a field trip to Negombo, a large fishing centre on the west coast of Sri Lanka, for the purpose of facilitating a detailed examination of the major BOBP project in the host country viz., "Demersal Fishing" and to provide information on the beachcraft development project. Facilities were provided for the committee members to view at first hand fish landings and marketing, the craft, gear and equipment used in the projects and to meet and discuss the project activities with fishermen, fisheries officials, BOBP staff and other concerned persons. A visit was also paid to a boatyard which is engaged in the large-scale manufacture of FRP fishing boats.

11. The demersal fishing project was commenced by BOBP at the request of the Ministry of Fisheries, following the resources survey by RV Dr Fridtjof Nansen, which showed the existence of a large stock of demersal fish. It was strongly supported by the Ministry which later on also provided substantial financing for the project. The activities undertaken were summarized and illustrated by a slide show. It was noted that bottom longlining demonstrated under the project had been adopted by some fishermen in Negombo during the off season for driftnetting and that the number was expected to increase next year. The modus operandi for wider application, BOBP's intention to experiment with trap fishing, commercial feasibility of the operations, cooperation of fishermen in the experimental fishing and the specifications of the fishing gear used, were among the subjects discussed.

12. Following a visual demonstration of the beachlanding craft SRL 11 and the FRP outrigger canoe (SRL/ORU) a new design SRL-12 was discussed with reference to a model. The *raison d'être* of these craft, their technical characteristics with special reference to sails and low powered engines, and their indicative capital and operating costs, were briefly discussed.

Progress Report

13. The Programme Director, in presenting the Progress report, noted that it deviated from reports presented at previous meetings in accordance with the recommendations made by committee members at the 5th meeting. The report was shorter and pointed out highlights of activities carried out in the intersessional period, as well as indicating the proposed scope of work for the coming year under each subject matter heading.

14. The work programme agreed on at the 5th meeting of the Advisory Committee had been adhered to with only minor modifications, and progress had, on the whole, been up to expectations. The Programme Director's Progress Report is attached as Appendix 3.

15. Slides were shown to illustrate further the background and progress achieved, after each summary presentation by the Programme Director in respect of specific subject matter areas, notably Fishing Gear and Methods, Fishing Craft Technology, Coastal Aquaculture and Extension Service.

16. FAO requested the delegations of participating countries to give their frank appraisal of activities undertaken in their countries and to inform the meeting of their plans for follow-up action as well as of possible constraints to effective follow-up.

Fishing Gear and Methods

17. Bangladesh considered the improvement of large-mesh gillnets a successful Programme activity and indicated its determination to follow-up with larger scale gear supply to fishermen, with the Programme's help, in order to firmly establish this promising gear in its fishery. The improvement of the set-bag net fishery, while showing promise, required additional Programme inputs, as did the pair trawling activity, which to date had not been fully conclusive. The factors that appear to inhibit success in the latter activity needed to be better identified in order to define detailed Programme inputs as remedial measures. The proposed pilot operation of simple, hand-operated net-making machines of Indian origin was very welcome and would meet with considerable interest in Bangladesh.

18. Malaysia, while noting that fishing gear improvements were not of a high priority in their fishery due to an acute problem of over-fishing of the available resources, indicated considerable interest in the pilot operation of hand-operated net-making machines.

19. SIDA was particularly interested in learning how the Programme activities and their emerging results were affecting ongoing or planned national programmes.

20. In discussing the Programme's activities in regard to high opening bottom trawls and pair trawling with small and medium sized boats, the Committee noted once again the problems and possible conflicts that this type of development could bring for the traditional small-scale fishermen. It agreed that their solution was a strictly national problem, depending on a multitude of factors to be considered. The existence of possible conflicts of interest between different groups of fishermen should however not prevent the Programme from pursuing its technical development work.

21. Sri Lanka expressed hopes of future success in the Programme-supported demersal fishing project. Ways and means had to be found to exploit the already identified but hitherto under-exploited demersal resources, and any success would be incorporated in national development plans for follow-up action. Such action would concentrate on facilitating the supply of the required fishing gear on a large scale and on consumer education to facilitate market acceptability of bottom fish at improved price levels. It was also planned to introduce a demersal fishing programme into the NORAD-supported Hambantota District Development Project, thus making use of results from Bay of Bengal Programme activities in the framework of a strictly national project. Sri Lanka also expressed interest in expanding the demersal fishing activity by trials and demonstrations with traps and bottom-set gillnets. There was considerable interest expressed in the Programme's proposed development of simple mechanical line and net hauling devices, as well as in a pilot study in Sri Lanka on the possibility of introducing Fish Aggregation Devices (FAD) under the Programme's auspices.

22. In reply to a question by Sri Lanka, the Programme Director and FAO indicated that the Programme should not get directly involved in fishery management issues, but should concentrate its inputs on technological development. Management issues would be dealt with by the new UNDP project starting in 1982 as a support unit to the Bay of Bengal Fisheries Committee, and there would obviously be close coordination and collaboration between the Programme and this project.

Fishing Craft Technology

23. It was noted with satisfaction that the Programme was close to its aim of developing, constructing and successfully demonstrating a number of technically and economically viable

beachlanding craft. These craft were particularly adapted to fishing and beachlanding conditions in India (Andhra Pradesh and Tamil Nadu) and Sri Lanka.

24. Resulting from a query by Bangladesh, the Programme Director reiterated the objective of these activities, which was to develop economically viable beachlanding craft as alternatives to the traditional craft used in the area. The need for this development arose from the particularly difficult physical, topographical conditions on the east coast of India and Sri Lanka where the provision of harbours or sheltered anchorages presented nearly insurmountable problems.

25. Sri Lanka emphasised the importance given to these activities also from the point of view of serving the needs of existing fishing communities along the coast and avoiding progressive movement of fishermen and their families to urban centres.

26. Malaysia, while noting that the result of these activities had little application along their western coast, felt that the craft developed could be of interest to the fishermen on their east coast.

27. Bangladesh agreed that in many areas the development of beachlanding facilities and special craft was of obvious importance, but emphasised that the Programme should continue to work on the improvement of existing traditional craft, and might also usefully extend its activities to the development of new types of craft for non-beachlanding conditions.

28. Sri Lanka indicated interest in the development of low energy use intermediate craft for use from harbours and sheltered anchorages to replace progressively the fleet of 28 ft. craft now in use. Investment financing from AsDB for such a replacement programme has already been arranged.

29. In the absence of India, FAO stated that development of a new generation of intermediate mechanised craft was also a matter of priority in India.

30. The advisability of the Programme's involvement in such development work was discussed at some length. The Committee reiterated its view that the Programme should concentrate on technological development work for the benefit of the small-scale fishermen; no rigid limitations should, however, be imposed in regard to the size of craft to which the Programme's development efforts should be applied.

31. Accordingly, involvement of the Programme in the craft development work required by Sri Lanka and India, including assistance to Sri Lanka in the evaluation of craft designed by third parties, was not ruled out, but it was noted that such work would require additional financial resources as well as firm commitments by the countries concerned to continue development support beyond the present life-time of the Programme.

32. In this connection, SIDA emphasised the need for a thorough understanding of future needs of the participating countries to assist in determining future Programme input requirements.

Coastal Aquaculture

33. Bangladesh reported satisfactory progress with the preliminary action at national level in respect of the Satkhira aquaculture project. In respect of other activities, it was suggested that in the light of experience in the Phang Nga aquaculture project which showed the importance of fish feed in cage culture of finfish, a study on the development and economics of fish feed would be a useful exercise.

34. Malaysia briefed the committee on the status of the Ban Merbok aquaculture project. Though some delays had been experienced, the physical facilities at Ban Merbok and Pulau Sayak had now been completed. Although it had been hitherto intended that the BOBP input should be utilized *inter alia* for shrimp hatchery management, Malaysia suggested instead that this component be diverted to acquire expertise for breeding of brackishwater finfishes and conducting a trial sea-weed culture, which was also relevant to the resettlement scheme for displaced small-scale marine fishermen.

35. Thailand gave the Committee a briefing, accompanied by a slide show, on the activities of the Phang Nga project in respect of both aquaculture demonstration and community development. In regard to sea-weed culture, Thailand also expressed interest since the present practice in Thailand of sea-weed collection from the wild was destructive and uneconomic, and expertise in this regard might be available from neighbouring countries such as Philippines, Indonesia and India. FAO referred to the Chinese experience where problems of marketing sea-weed for industrial use had been encountered. Malaysia stated that although preliminary analysis indicated the presence of a high quality gel content in Malaysian sea-weed, the marketing aspect had not been examined and suggested that BOBP might assist in the conduct of a market survey as a first step towards incorporation of a sea-weed component in the Ban Merbok project. Some delegates expressed their reservations in regard to the undertaking of new activities in view of the limitations on the Programme's resources.

36. The Programme Director suggested that the Malaysian proposal might be considered further in relation to the possibilities and availability of resources for implementing it on a regional basis.

37. In response to an inquiry from Sri Lanka, the Programme Director informed the Committee that the delay in filling the post of aquaculture specialist was due to the difficulty of identifying a practically oriented expert who fulfilled the BOBP's requirements, but that there was hope of getting the services of a suitable incumbent in the near future.

38. Sri Lanka expressed appreciation of the Programme's assistance in arranging a TCDC input for coastal aquaculture from Tamil Nadu and suggested the follow-up of this input by the establishment of a pilot project for shrimp/oyster farming. It was also suggested that the Programme could provide assistance in the formulation and promotion of a suitable project which might include *ad hoc* arrangements for utilizing TCDC inputs.

Extension Service

39. There was a lively discussion on this subject matter area which reflected the diverse opinions held by different participants regarding the concept of extension.

40. FAO referred to the positive experience in regional fisheries projects in other parts of the world, such as Africa, which aimed at the integrated development of fishing villages where some degree of success had been achieved when women oriented extension activities had been directly connected with fishing such as for instance, the better processing of fish. Information was sought from the committee members regarding their own experiences and their guidance about the Programme's role in this subject matter area.

41. SIDA stated that one of its main objectives in supporting the Programme had been the development of a better life for the small-scale fisherfolk of the region who were living under very adverse socio-economic conditions. The way in which this could be achieved was not clear but certainly it could not be achieved solely by technological development or by extension of such development without tackling the social factors which also constituted development bottlenecks as far as the small-scale fisherfolk were concerned. There were integrated community development projects in the fields of forestry and agriculture which were also targetted at poorer rural sectors and one way might be to consider the applicability of their methodologies to the small-scale fisheries sector. Information was requested on the national methodological approach in the member countries.

42. In response to FAO and SIDA, Sri Lanka described a village project at Matara under which common fish smoking facilities for the benefit of some 500 families were provided for the manufacture of maldivian fish during the glut season for skipjack. Malaysia referred to the FAO/CIDA Kuala Besut integrated small-scale fisheries project which had met with some success in aquaculture development but had encountered problems in regard to socio-organizational aspects. In the second phase of the project, it was proposed to use the model of some successful Integrated Agricultural Development Projects (IADP) in the field of agriculture, but it is not known whether this model would be applicable in a project where fishing is the focal activity; Thailand informed the Committee about a programme for the development of agriculture and fisheries in 216 poorer districts of Thailand with provision for providing essential basic infrastructural facilities.

43. Bangladesh considered that extension targetted at the women in fishing communities should be concerned with their role in regard to activities directly connected with fishing-such as improvements in fish handling, processing and marketing, aquaculture or net making. Social welfare per se is undertaken by various other agencies and it may not perhaps be possible for the Programme to become too deeply involved in this area. The Programme is currently conducting a survey in two Bangladesh fishing villages with a view to identifying the socio-economic activities needed for the development of the fishing families in these villages. Once these are identified, the Programme's role should be to provide assistance in training a band of extension workers. The function of these extension workers should be to act as catalytic agents to bring about improvements in the socio-economic conditions of the fishing families by various means. The Programme might, in addition, supplement the training by providing some of the inputs needed for promotion of fishery-connected extension activities.

44. Sri Lanka pointed out that in recent times a great deal of attention was being paid in the country to the welfare needs of the fisherfolk and the Welfare Division of the Ministry of Fisheries was involved in this area. In view of the involvement and capacity of national organizations it was considered that the Programme should confine itself to technology development for which similar national capacity was not available.

45. FAO pointed out that, in addition to technological development, it was essential to understand and take into account the effects of the introduction of these improvements on the fishing communities. Such effects could be sociological, socio-economic or even cultural and it is inadvisable to ignore such an essential part of the development process.

46. Summing up the discussion the Programme Director noted that although diverse views had been expressed, the discussion contained the concept of work related to social feasibility of the introduction of technological developments and assistance in setting up people-oriented extension services which were suggested as the first and second priorities for future work. There was a general consensus that the Programme should not involve itself in welfare activities.

Other topics

47. The Committee noted that deletion of the subject of fish utilization was in accordance with the principle of concentrating on priority areas and endorsed the suggestions made under this heading for future work.

48. In response to a question from FAO, Sri Lanka stated that its Institute of Fish Technology was engaged in work related to post-harvest technology including the development of new value added fish products out of low grade fish and agreed to make available the results of its work to other countries in the Bay of Bengal region.

Information Service

49. Following on the summary presentation of this item by the Programme Director, the Programme's Information Officer briefed the Committee on the rationale and target audiences of Programme publications- the technical reports and the newsletters. In response to a query from the Chairman, he stated that the reaction from the target audience to the newsletter had been even better than expected. There was also a heavy demand for the technical reports.

50. Sri Lanka stated that regular coverage was given by the *Fisherman* newspaper published in English, Sinhalese and Tamil by the Ministry of Fisheries, which reached a wide fisherfolk audience, to material contained in the *Bay of Bengal News*. It was suggested that the Programme should try to get such material into vernacular newspapers published in the respective countries which reach fisherfolk audiences.

51. In response to suggestions from Bangladesh, the Programme Director stated that it was necessary to see more impact of the Programme and to be very definite about the target audience before embarking on the production of a documentary film which was a costly venture. The Programme had assisted in the production of an extension leaflet in connection with the large-mesh driftnetting project in Sri Lanka but was not sure of its effect.

52. The Committee endorsed the activities proposed for 1982.

Project inputs

53. The Committee noted the status of project inputs during the reporting period.

Modus Operandi

54. The Programme Director suggested that TCDC could be facilitated if the initial contacts could be taken up between countries bilaterally at diplomatic level, with the Programme being involved in regard to funding arrangements when these contacts had produced a satisfactory outcome.

55. Sri Lanka stated that such action was being pursued between Sri Lanka and Thailand as a follow-up to the Thai TCDC Aquaculture mission to Sri Lanka in 1978. It was pointed out that TCDC could also provide an alternative where the Programme was unable to recruit experts, as in the case of aquaculture referred to in para 38.

56. In response to a question by Sri Lanka, the Programme Director stated that although the assistance by UN agencies for facilitating TCDC was expected to be marginal, the Programme's experience was that TCDC arrangements work well only if a major input is provided. Bangladesh was of the view that the Programme should not confine itself only to a remote role of catalytic funding for this purpose, and should more actively involve itself in promoting TCDC. Bangladesh also suggested that preference should be given to experts from the region in the matter of recruitment of consultants for the Programme.

The Bay of Bengal Committee (BOBC)

57. The Committee considered in some detail the relationships that would apply in the future between the new Bay of Bengal Fisheries Committee, meeting for the first time immediately after the Advisory Committee meeting, the Bay of Bengal Small-Scale Fisheries Development Project and the new UNDP-funded support project to the BOBC concerned primarily with fishery resources management in the Bay of Bengal area.

58. It was noted that the BOBC would become the overall intergovernmental coordinating body for all fisheries development and management activities in the Bay of Bengal, with a Support Programme consisting of the SIDA-funded small-scale fisheries development project and the new UNDP-funded resources management project. Only part of the sub-regional support needs are covered by these projects, and the BOBC will have to consider total requirements, identify gaps, and attempt to attract additional funding for specific projects to fill these gaps. In addition, BOBC will have some inputs from the Project for Tuna Management in the Pacific and Indian Ocean (funded by UNDP and Japan), the Regional Fish Marketing Information Project (funded by Norway) and the Regional Aquaculture Project (funded by UNDP and national IPF funds).

59. The Committee was unanimous in its view that the SIDA-funded BOBP should retain its distinct identity. It also felt that the Advisory Committee should continue in its present role, while attempting to meet in conjunction with a session of the BOBC whenever possible.

60. Sri Lanka expressed its strong support to the Support Programme for fisheries and stated that the efficiency of the small-scale fisheries development project depended on a closer relationship with the BOBC. It was also pointed out that the BOBC will have little meaning if it did not include small-scale fisheries which accounted for a major part of the fisheries in the sub-region. As a token of its support and in view of the desirability of having close physical links between the BOBC and the small-scale fisheries development project, Sri Lanka extended the offers made earlier at Kyoto (IPFC), Penang (5AC), and Rome (COFI) to host the UNDP project of the BOBC, to the small-scale fisheries development project as well. The Committee noted the offer with appreciation.

61. FAO indicated that a common management and administrative structure for the small-scale fisheries development project and the resources management project would be an advantage.

The two projects would however have to maintain their separate identities as far as implementation of their work plans was concerned.

62. SIDA felt that the support programme structure outlined in the course of the discussion was probably sufficiently flexible to allow rearrangement of priorities and formulation and implementation of sub-projects to fill identified gaps, but stressed its view that SIDA funding should be reserved for operational activities and should not be used to cover BOBC secretariat functions.

Looking beyond 1983

63. The Committee was strongly of the opinion that a termination of the BOBP at the end of 1983, would, to a large extent, negate the gains already achieved in favour of the small fishermen ; the Programme had just gained momentum and was now showing positive results, but so much remained to be done, that long-term support beyond 1983 was essential if lasting benefit is to accrue to the fishermen of the area.

64. The Committee unanimously supported the "Considerations for a second phase of BOBP" presented by the Programme Director and attached as Appendix 4. They agreed that this document should be considered as an adequate first step in formulating the details of a second phase and expressed the hope that it might assist SIDA in reaching an early decision in principle to continue support to the Programme beyond 1983. It was well understood and agreed that any decision on level of support and details of content of a second phase Programme would have to await the outcome of the impact review proposed to be undertaken in late 1982.

65. SIDA, while understanding the anxiety of the countries and the Programme to have an early indication of intent to continue funding support, was not in a position to provide such an indication, beyond stating that it continued to be interested in supporting the BOBP provided it assisted subject-oriented problem areas of general interest and contributing to improvement of conditions of the poorest sections of the populations.

66. The proposed impact review was welcomed by all members and the Programme Director was encouraged to initiate discussions with countries on an informal basis as soon as possible in preparation for the review proper. Draft terms of reference for the impact review were adopted by the Committee and are attached as Annexure 1.

Next Meeting

67. Before making definite recommendations in regard to the time and venue for the next meeting, the Committee wished to hear the views of the BOBC on its own future meeting schedule, in order to attempt the scheduling of joint meetings when possible.

68. The Committee felt however, that it would be advisable to adhere to yearly meetings for the Advisory Committee, and noted the Programme Director's proposal that, for practical reasons, such meetings, whenever possible, be held between mid and end January.

69. Following the accepted principle to hold Advisory Committee meetings on a rotational basis in participating countries, it was noted that the next meeting should be held in India.

70. In view of the absence of India from the meeting, this could not be further discussed. Bangladesh suggested that the next member country in line in the direction of rotation should be approached if one country found it impossible to extend an invitation to the committee for a subsequent meeting. Sri Lanka expressed its readiness to host the next meeting if any other country would not be in a position to do so. Both proposals were noted with appreciation by the Committee.

71. Considering the importance of trying to schedule future meetings jointly with sessions of the BOBC, the Committee concluded that a decision on both timing and venue of its next meeting had to be taken at the end of the BOBC meeting which would be attended by all Advisory Committee meeting members.

Adoption of Report

72. The above report was adopted by the Committee.

Concluding Remarks

73. At the concluding session, following the adoption of the report of the meeting, Mr. N. Kojima, on behalf of FAO, expressed gratification at the progress of the BOBP and the conduct of its Sixth Advisory Committee Meeting. The development effort for the benefit of small-scale fisherfolk was on the right track and SIDA's positive attitude towards funding of the Bay of Bengal Programme was appreciated. He also expressed deep gratitude to the government of Sri Lanka for hosting the meeting and for the excellent arrangements made.

74. Sentiments in appreciation of the hosting of the meeting and the excellent arrangements by Sri Lanka, the effective implementation of the Programme by FAO, and the funding support extended by SIDA, were expressed by Bangladesh, Malaysia and Thailand. The chairman was complimented on the manner in which he had conducted the proceedings.

75. On behalf of SIDA, Mr. L. Augustinson expressed satisfaction at the fruitful result of the discussions at the meeting. He thanked FAO for facilitating an open and frank discussion among the delegates of different countries and the staff of the Programme for its contribution to the discussion, and expressed his hope for successful development in the region in the future. He also thanked Sri Lanka for hosting the meeting and for the excellent arrangements and hospitality which enabled the meeting to be held in a friendly atmosphere.

76. On behalf of Sri Lanka, Mr. H. W. Jayawardene said that the Sixth Advisory Committee meeting was symbolic in many ways. It was in Sri Lanka that the Programme was born and it was a source of great satisfaction that it had developed to this stage. The meeting fostered co-operation and close ties within the region. Sri Lanka was determined to ensure the continuation of the Programme, and had offered host facilities for BOBP in this spirit. Sri Lanka thanked the BOBP staff for their perseverance and their dedicated implementation of the Programme, the FAO for its guidance, and SIDA for its generosity, and congratulated the chairman on his conduct of the meeting.

77. The chairman thanked the delegates in turn for their friendly cooperation and the give-and-take spirit they had displayed at every stage of the meeting and wished them a safe return home.

Annexure

BAY OF BENGAL PROGRAMME

AC6

Development of Small-Scale Fisheries

(GCP/RAS/040/SWE)

6th Advisory Committee Meeting, 1-5 December 1981. Colombo, Sri Lanka

IMPACT REVIEW:

Draft Terms of Reference

An impact review of the Programme's activities and inputs will be undertaken in late 1982 in accordance with the recommendation of the 1980 Review Mission.

The review will concentrate on two main aspects to facilitate a meaningful discussion in regard to future support for and the direction and scope of Programme content beyond 1983 :

- (i) Achievements of the Programme during its first four years of operation and the impact generated.
- (ii) Relevance and effect of Programme achievements in relation to the policies and programmes of the participating countries in small-scale fisheries.

Due to the short period under review, mainly qualitative indicators will be examined, including *inter alia*:

- Level of collaboration among participating countries in achieving a forum for exchange of experience and information ;
- Awareness among the public of the importance of fisheries and the degree of public support for fisheries development;
- Definite follow-up proposals by governments;
- Identification of investment possibilities;
- Training of counterparts and associated national personnel and their involvement in Programme activities ;
- Projects for long-term savings in cost of fishing operations;
- Adoption of Programme results by fishermen and their families.

Where applicable, quantitative indicators will also be examined, such as :

- Increased catch rates;
- Investment in new technology resulting from Programme activities;
- Budgetary provision by governments and local bodies for follow-up of Programme activities.

A consultant will be used to prepare a review document in consultation with participating governments, institutions, local bodies and concerned fishermen groups. This paper will serve as a discussion document for a meeting of representatives of participating countries to formulate definite conclusions on Programme achievements and impact and recommendations in regard to the scope and direction of future Programme inputs.

Appendix 1

BAY OF BENGAL PROGRAMME
Development of Small-Scale Fisheries

AC6/3 (Rev. 2)
(GCP/RAS/040/SWE)

6th Advisory Committee Meeting, 1-5 December 1987, Colombo, Sri Lanka

LIST OF PARTICIPANTS

Bangladesh

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Dr. M. Youssouf Ali	Additional Secretary Ministry of Fisheries & Livestock

Malaysia

Mr. Mazlan Jusoh	Senior Fisheries Officer Fisheries Division, Ministry of Agriculture
Ms. Badariah Mohd. Ali	Fisheries Officer (International) Fisheries Division, Ministry of Agriculture

Sri Lanka

Mr. A. Fernando	Additional Secretary Ministry of Fisheries
Mr. H. W. Jayawardene	Ambassador, Special Adviser, Law of the Sea Ministry of Foreign Affairs
Dr. S. K. O. Perera	Director Institute of Fish Technology Ministry of Fisheries
Mr. C. R. B. Fernando	Director Planning and Programming Ministry of Fisheries

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Appendix 2

BAY OF BENGAL PROGRAMME
Development of Small-Scale Fisheries

AC6/4 (Rev. 1)
(GCP/RAS/040/SWE)

6th Advisory Committee Meeting, 7 -5 December 1987. Colombo, Sri Lanka

ANNOTATED AGENDA (Provisional)

1. *Opening of the Meeting (Tue. 01/12 at 17.30)*
2. *Election of Chairman*
3. *Adoption of the Agenda and Arrangements for the Meeting*
4. *Field Seminar (Wed. 02/12 at 07.45)*

This seminar, which will be held in conjunction with a field trip to Negombo, has the purpose of facilitating a more detailed examination of one of the BOBP activities in the country hosting the meeting. The subject is "Demersal Fishing". Besides a presentation of the project the committee members will be given the opportunity of viewing gear, equipment and craft used in the project and discussing the various issues with fishermen, research/development officers and BOBP staff.

Examples of the beachcraft development in Sri Lanka will also be demonstrated at Negombo during the field trip.

5. *Progress Report (Thu. 03/12 at 08.30)*

The Programme's Progress Report for 1981 is presented in document AC6/6. The major features of the programme implementation and plans for the future are :

Fishing Gear and Methods: Steady progress with notable achievements in large-mesh drift-netting in Bangladesh and small boat trawling in Tamil Nadu. No major changes in the work programme are envisaged, but more emphasis will be given to training, primarily of counterparts engaged in BOBP work, plus dissemination of results for wider application.

Fishing Craft Technology: Significant advancement of beachcraft development in India and Sri Lanka. There will be a gradual change to increase emphasis on introduction/demonstration/production of newly developed craft. Top priority will be given to small beachlanding craft, sails and low powered engines.

Coastal Aquaculture: Acceleration of activities but output below expectations due to the delayed recruitment of an aquaculture specialist. With a new major project in Bangladesh and two smaller projects in India, the Programme will be engaged in a cross section of aquaculture techniques and methods and no further work or re-orientation is proposed.

Extension Services: Activities have been expanded with particular reference to family and women participation. These activities should be somewhat re-oriented. Apart from continuing in a small way with ongoing village/family/women projects, emphasis will be given to (a) support to the introduction of new technologies to ensure social feasibility (b) training of extension workers with emphasis on approach and communication skills.

Other Topics: (a) Deletion of fish utilization from the Programme as a consequence of the low priority given to this subject by the country representatives participating in the review mission. (b) Organization and conduct of training courses in fisheries stock assessment and statistics in cooperation with AsDB, SCSP and SEAFDEC.

Information Service: Launching of a newsletter and the organization of a photo exhibition. Slide presentations of BOBP work are planned for 1982.

Programme Delivery: The delivery in terms of expenditures is about 25% below target. Savings will be used in following years on high priority work as recommended by the committee.

The review mission which completed its work in December 1980 was of the opinion that the Programme was engaged in too many activities in relation to its resources and competence and recommended a focus on high priority and deletion of others. This was also the view of the Advisory Committee in its 5th meeting. Some of the low priority activities not meeting the criteria agreed upon in the 5th meeting have been deleted from the Programme but more could be done to this effect and specific suggestions from the committee are welcome.

6. *Modus Operandi* (Fri. 04/1 2 at 08.30)

In the 5th meeting a summary report of the possibilities for TCDC was presented. Subsequently, in July 1981, a complete working paper BOBP/WP/11 was issued soliciting comments from the cooperating agencies on subjects, ways and means for furtherance of TCDC in the region. To date there has been response from one country only.

The counterpart issue has been discussed in all previous AC meetings. A positive change has taken place over the years but there is still a long way to go until the ideal situation is achieved, i.e., that the BOBP becomes a counterpart of the national programmes.

In a few cases the Programme has, in cooperation with government agencies concerned, established more or less autonomous project units to implement the work. The pattern is that the government and BOBP pool their resources as to hardware and operational expenses and government officers are seconded to the project on an incentive basis for its duration. The experiences are very good and the main advantage is that many bureaucratic obstacles can be avoided.

The Programme engages a large number of individual fishermen and boat owners in its experimental work. The experience with this arrangement has been very positive. The number of days of operation is high, the feedback from the practitioners is invaluable for further development and the practice paves the way for early demonstration of results.

The Programme has had problems with the recruitment of consultants. These are two-fold. First, it is difficult to locate good expertise and ascertain that they are good. Secondly, it is difficult to have them recruited at the right time. There are two ways out of this impasse : Umbrella "when actually employed" (WAE) contracts with consultants, which means that they are hired intermittently by the Programme without going through the recruitment procedures each time. The other is to hire a "permanent" consultant for a year or so to be used for several projects in his particular discipline. The Programme has WAE contracts with a couple of consultants and is in the process of recruiting a fishing gear and methods consultant for one year.

Comments, views and suggestions from the committee on the above features and other ways and means for effective implementation of the Programme are solicited.

7. *The Bay of Bengal Committee (BOBC)*

The new BOBC is holding its first session immediately after the 6th AC meeting. The BOBC is a sub-committee of the Indian Ocean Fisheries Commission (IOFC) and its functions are those of the IOFC for the Bay of Bengal area only. Operational arrangements of the Committee will be determined during the first session.

As usual support to the BOBC, UNDP will provide funding for a support project in the field of fishery resource monitoring. It will probably consist of expertise in stock assessment and statistics and have a duration of five years starting 1982.

The present BOBP is also of course, although not formally, a support project in the field of small-scale fisheries. It is therefore proposed in the UNDP project that it should be integrated with the existing BOBP.

It is expected that the BOBC will meet annually and that the progress of its support projects will be a standard item on the agenda. It therefore seems logical that AC meetings, while maintaining their identity, should in future be held as special sessions of the BOBC meetings. Similarly it is expected that Tripartite reviews of the UNDP project will also be held as separate sessions at the BOBC meetings.

The committee may wish to make specific recommendations on these matters.

8. looking beyond 1983

SIDA has generously agreed to provide funds for the Programme through 1983.

The Review that was undertaken in November/December 1980 resulted in a general endorsement of the work and progress of the Programme. It was pointed out however that it was too early at that time to assess any long lasting achievements and that most of the work was of such nature that it would require a much wider time frame. Therefore, the review suggested that the Programme should continue beyond 1983.

To facilitate a decision to this effect and to determine the future orientation of the Programme's work it was suggested that an impact review be undertaken towards the end of 1982 for discussion at the 7th AC meeting. The Committee may wish to propose terms of reference and other arrangements for the review.

It is a long and cumbersome process to get projects approved and operational because of various formalities and different deadlines of the parties concerned. It is therefore suggested that already at this session some preliminary discussion about a second phase of the BOBP is taken up to identify suitable contents and features and to determine appropriate approaches to the funding agency and governments.

A document AC6/7 (Considerations for a 2nd phase of BOBP) has been prepared to facilitate the discussion.

9. Next Meeting

Decision or recommendation to be made in the light of discussions under agenda item 7.

10. Other matters

11. Adoption of report (Sat. 05/12 at 14.00)

Appendix 3

BAY OF BENGAL PROGRAMME

AC6/6

Development of Small-Scale Fisheries

(GCP/RAS/040/SWE)

6th Advisory Committee Meeting, 1-5 December 1981, Colombo, Sri Lanka

PROGRESS REPORT - 1981

Introduction

1. At its 5th meeting, "the Committee recommended that the Secretariat review the form of the meeting and the type of proceedings so far followed".
2. In reviewing the matter it was felt that perhaps too many details, mainly of a technical nature, had been presented and this had a tendency to side track the discussion to matters albeit interesting but perhaps not the most important. Accordingly, this progress report only highlights the achievements and problems. Details of particular activities can be found in the quarterly progress reports and BOBP Reports and Working Papers.
3. Another deficiency, it was felt, was the overlap in discussions between "progress report" and "work programme"; it would be better to structure the discussions by subject matter. Therefore, this report contains ideas and suggestions for future work under each subject matter heading. This is to be seen, as in previous years, as a preliminary framework of suitable projects and activities subject to the views of the Committee, budget approval by SIDA and counterpart support.
4. During the reporting period, the UNDP-funded project Small-Scale Fisheries Promotion in South Asia (RAS/77/044) was an integral part of BOBP. The project consisted of a Fisheries Adviser, an Associate Expert (Economist) and consultants. The major contributions of this project have been a Costs and Earnings Study of fishing units and introduction of beachlanding craft in Kerala plus the preparation of aquaculture projects in Bangladesh and India (Andhra Pradesh, Tamil Nadu), the latter together with TCDC input from Indonesia and Thailand.
5. The programme of work as recommended by the Committee and the Review Mission has been closely followed. The only deviations, or rather delays, in implementation have been caused by problems in recruiting staff and consultants which is beyond the direct control of the Programme.

Fishing Gear and Methods

6. This subject covers all matters related to fishing gear (design and material), methods, and fishing aids (fish finders, haulers and other equipment). Work is in progress in varying degrees under the following titles:

BOB/FAD — Fish Aggregating Devices

BOB/LCE — Low Cost Echosounder

BOB/BCF — Beach Craft Fishing

BOB/LNH — Line and Net Haulers

BOB/CIN — Cottage Industry Net-making

BGD/LMD — Large Mesh Driftnets

BGD/SBN — Set Bagnets

BGD/TBT -Two Boat Trawling

IN D/TBT — Two Boat Trawling

IN D/KAF — Kattumaram Fishing

SRL/DEF — Demersal Fishing

7. The improvement of *large-mesh driftnets in Bangladesh* has continued to produce positive results. The initial findings (BOBP/WP/5) were confirmed during the 1980/81 season (BOBP/WP/12). The nets of thinner twine cost 40% less and catch more fish. The operators of the boats on which the trials were undertaken have become convinced about the superiority of the nets. For the 1981-82 fishing season 5 fishing boats from different communities have been issued with the nets of thinner twine as a further step in demonstrating the advantages of these nets. Substantial savings can be made by the individual fishermen and the country as a whole by using nets of the thinner twine. In order to accelerate the use of this type of twine, meetings between manufacturers, importers and fishermen have been planned and will be organised at the end of the current fishing season.

8. The *set bagnet fishery of Bangladesh* is one of the most important sub-sectors of the small-scale fisheries in the country. During the 1980-81 fishing season set bagnets made of polyethylene (PE), which cost 20% less than the usual construction material (nylon), were tried out in commercial fishing. Initially the fishermen were sceptical when the trials started. However, after a full season of fishing the fishermen with whom the Programme cooperated were convinced that the nets of the new material were not in any way inferior to those made of nylon. Other ways of improving the efficiency of these nets include the rigging and design of the nets. In order to facilitate further work of improving the set bagnets, a study tour was organised for six fishermen and two assistant fishing technologists to Maharashtra, India where a similar but somewhat more advanced fishery exists. The tour was an eye opener for some of the fishermen who on their return to Bangladesh started to construct new nets of modified design. The use of these nets was started in November at the time of the preparation of this report. Trials of nets with improved rigging and different design have had to be postponed because of the difficulties in locating a suitable consultant to direct and supervise the work.

9. The fishing trials with *two-boat high opening bottom trawls in Bangladesh* during the 1980-81 season clearly indicated that such fishing is not commercially viable (BOBP/WP/13) for reasons of insufficient power of the boats (strong currents prevail in the area), low price of the bottom fish caught and high cost of fuel and ice. It may however be possible that trawling could be employed in combination with large-mesh driftnetting and trials to this effect have been planned and are ongoing since November 1981.

10. The *two-boat trawling experiments in India* off Madras and Mallipattinam early in the year were disappointing from a commercial point of view. The trials were discontinued in May and activities have since been concentrated in the Tuticorin area. The major work has consisted of first, introduction of a high opening fish-cum-shrimp trawl, secondly, demonstration of rigging, construction and operation of the nets, and thirdly, improved handling and operation of the fishing gear by introduction of novel deck machinery i.e. a three drum winch, gantry and a net drum. Prototype constructions of the latter have been made at Tuticorin and sold to fishermen at cost. The new equipment, which does not cost significantly more than the traditional equipment used on the trawlers at present considerably simplifies the net handling and makes it more effective, safe and comfortable for the crew.

11. The new arrangements are applicable to the existing shrimp trawler fleet but would be of even higher value to new boats. Substantial benefits can be derived from the development work undertaken but these benefits will mainly accrue to the upper segment of the small-scale sector i.e. the owners and crew members of mechanised boats. Efforts will be made to transfer this activity to the specialised institutes in India such as CIFT and CIFNET for further demonstration and extension work.

12. The *demersal fishing trials in Sri Lanka* continued till May on the west coast and till July on the east coast, using chartered 3½ tonners. The fishing method was longlining. A full year trial period on the east coast with operational base at Kalkudah did not produce any positive results with regard to commercial viability of longlining. The catch rates were nearly all the time far below what is required for commercial feasibility. On the west coast however, the boats operating from Negombo produced commercial catch rates more frequently and several private fishing boats took up the activity during the November-May fishing season. During the current fishing season assistance will be extended to the fishermen in Negombo. Experiments earlier in the year with monofilament lines and wide gap hooks indicated their superiority. This type of lines and hooks will therefore be issued to the fishermen at cost and results of the fishing monitored by research assistants from the Ministry of Fisheries.

13. On the whole, the demersal fishing project has been disappointing from the commercial point of view, but even the negative results are of course important for further planning of fisheries development. Another fishing method which will be tried out from early 1982 is trap fishing. A suitable boat will be chartered and a consultant recruited to direct and supervise the work.

14. Besides continuation of the above activities the following projects are contemplated for implementation during 1982-83.

15. *Training courses* for counterparts in BOBP projects and other fishing technologists. Preliminary plans are to conduct a first course in basic skills for the entire region and thereafter sub-regional courses to cater for particular needs.

16. *Physical trials with fish aggregating devices*: A review has just been completed and will be issued as a working paper shortly. Instead of starting up a new activity perhaps a better approach is to first study the ongoing FAO supported trials in the Maldives.

17. *Beachcraft fishing*: Two newly designed beachlanding craft powered by diesel engines and sails are under construction for fishing trials employing two-boat high opening trawls, encircling nets, large-mesh driftnets, etc. The purpose is to try out active and more advanced fishing methods from small beach based craft. The special features of these craft are their beachlanding capability, low powered engine with high gearbox reduction (5:1) and sails as additional power source. The trials are expected to commence from Madras early 1982.

18. *Cottage industry netmaking*: This activity which has been on the programme from the start of BOBP has been revived after having been almost closed in the absence of a suitable intermediate technology machine for hand braiding of nets. Such a machine has been recently discovered in India. Plans are being made to procure this machine for installation in Bangladesh in connection with the fishing gear experiment work undertaken from Chittagong.

19. *Kattumaram fishing*: An effort is planned to explore the possibilities of increasing the catch of shrimp by the kattumarams by improving the gear or by introducing new types of gear.

Fishing Craft Technology

20. This subject comprises all matters concerning fishing craft i.e. design, construction (methods, material) powering (oars, sails, engines) and landing facilities as they relate to beachcraft. Ongoing activities come under the following headings:

BOB/ENG — Engine Installations

BOB/BBC — Buoyancy Block Craft

BOB/SAL — Sail Improvement

BOB/ALU — Aluminium Construction

BOB/BHD — Beach Hauling Devices

BGD/MCC — Motorization of Country Craft

IND/KAT — Kattumaram Improvement

IND/BCD — Beachcraft Development

IND/050 — Fishing Craft Development (RAS/77/044)

SRL/BCD — Beachcraft Development

SRL/IBM — Inboard Motorization

SRL/ORU — Oru Replacement

21. The highest priority has been given to the development of suitable beachlanding craft for *India and Sri Lanka*. Several boats have been built and tested during the year. The construction and testing programme has been greatly facilitated by the excellent cooperation extended by the Tamil Nadu Fisheries Corporation in making their boatyard at Royapuram available to the BOBP. Arrangements have been made for construction of craft in different materials, wood, plywood, fibreglass and aluminium. The boatyard workers have been trained in the use of modern tools imported by BOBP. This has considerably speeded up the production of boats and equipment. The beachcraft development programme has consisted of the following components during the year.

22. The 23 ft. beachlanding craft IND-13 has been tested under commercial conditions for one year from Uppada, a village near Kakinada in Andhra Pradesh. The trials have demonstrated the technical and economic feasibility of this type of craft. Its earnings have been much higher than those of the traditional Navas with which they are compared; the rate of return is also higher despite the higher investment. The boat has become very popular with the fishermen since it is more comfortable to operate, safer in going through the surf and more versatile on the fishing grounds.

23. Two craft of the *IND-11* type (buoyancy block craft) were constructed and put out for long-term commercial testing in September. These craft are being operated from Madras.

24. In connection with the fishing craft development project funded by the UNDP project RAS/77/044 four new craft were built, tested and put out for commercial testing. One type *IND-17* is a non-powered boat for rowing and sailing while the other *IND-78* is a motorised craft similar to but 3 ft. longer than the *IND-73* used in Uppada. The reason for making it longer was experience gained from the trials in Uppada.

25. An 8 metre long beachable fishing craft *SRL-11* was constructed at Madras, shipped to Sri Lanka and put out for commercial testing. The boat is fitted with a 12.5 hp aircooled diesel engine with a 3:1 reduction gear and is equipped with sails (mainsail, genoa and jib). The boat has the same capacity as the 3½ tonner as far as complement of nets is concerned. The speed attained under engine power or sail power is somewhat lower than that of the 3½ tonner but if combined, equally high or higher under favourable wind conditions. The capital cost of this craft is lower than that of the 3½ tonner and the operating costs are considerably lower. The boat was successfully tested under difficult surf conditions and the initial commercial fishing trials have been very encouraging. A second generation of the above boat *SRL-12* is already under construction. Two boats are expected to be completed before the end of the reporting period. These boats are similar to the *SRL-77* but 0.5 metre longer and fitted with larger sails and higher reduction gear to achieve maximum thrust. These boats are to be used in connection with the beachcraft fishing trials mentioned in the previous section.

26. Based on the experience of *IND-13* in Uppada and the longer version *IND-18* built for Kerala, a new type *IND-20*, about 27 ft. long, has been designed and a mould constructed in fibreglass for eventual production in larger numbers. The government of Andhra Pradesh is interested in issuing this craft to fishermen under a credit scheme supported by the World Bank.

27. Towards the end of the reporting period a new type of buoyancy block craft (BBC) with additional use of *PVC* piping has been constructed. This craft promises to be among the simplest and cheapest that can be built and might be a suitable upgraded alternative to the kattumarams.

28. The *main problem* in reaching a final solution for *beachlanding craft* has been the *engine installation* and particularly the stern gear arrangement. Very severe sand abrasion problems have been encountered during the trials. Different solutions to this problem have been experimented with and although improvements have been made it is too early to say that the final solution has been found. The *water-tight box* which contains the engine is also a complicated piece of equipment. Efforts have been made to simplify it and thereby reduce the costs. Late in the reporting period experiments were started in which the engine was put in a simplified box on top of the craft. This is only applicable to the smallest beachlanding craft with a low free board. The particular craft on which this has been tried is the *BBC/PVC* type mentioned above.

29. The *power unit* used in all the craft, except for the *SRL -11* is a 5 hp engine manufactured in India. The power is on the low side for crossing the surf. Furthermore, the engines are not marinized and they have been kept running only by very careful monitoring, maintenance and remedial repairs. Two other engines of about 8 hp have been identified as suitable alternatives and will be tested in new craft in the near future.

30. *Another problem* encountered during this development work is the *handling of the craft on the beach*. Already the first prototype craft *IND-11* and *IND-13* with a length of 23 ft. were difficult to handle on steep beaches without a mechanical device. The extended version *IND-18* which is about 26 ft. long is still manageable provided the beach is not too steep. However, a boat of the size and weight of *SRL - 11*, 27 ft. with a larger beam, heavier engine etc., cannot be routinely hauled up and down the beach. The craft has the advantage of being able to come up to the beach for unloading but it is unrealistic to think of drawing it up manually on to the beach every day. If this is to be done, mechanical hauling devices are required.

31. All the beachlanding craft designed and built so far are equipped with sails. Most of the sails have been imported from Hong Kong and are made of terylene. This may of course be an unacceptable procedure in commercial production of boats but certainly the most expedient for prototype production. In order to identify the possibilities of improving sailing rigs and materials for sails, a consultant was engaged at the end of the reporting period. The expected outcome is that selected locally manufactured materials will be used to make prototype sails for testing on new as well as traditional craft. The sailing performance on *SRL-11* in particular, shows that there is scope for equipping fishing boats with effective sails in the future.

32. The trials with *long-tail engines on traditional "Chandi" boats in Bangladesh* are showing promising results. The data collected during the first six months of operation indicate that the motorized boat earns twice as much as a non-motorized one. Operators of boats in the area where the trials are conducted have expressed interest in purchasing engines. In order to further demonstrate this type of motorization, BOBP has ordered four more engines which may be sold at cost to interested parties. Furthermore, a draft project proposal to introduce 50 such units has been prepared by the Bangladesh Fisheries Development Corporation. Although the trials indicate economic viability, care has to be exercised in a large-scale introduction to ensure that adequate spare parts and facilities for maintenance and repair are available.

33. The *efforts to improve the traditional craft in India and Sri Lanka* i.e. the Kattumarams and the Orus have not produced any significant results and the prospects for substantial impact are not very good. The testing of pressure treated kattumaram logs is going on in India but even if the results are positive the benefits will be marginal. The GRP versions of craft similar to the Oru in Sri Lanka have not caught on but some further trials will be undertaken before abandoning the attempt.

34. With regard to the *future work programme during 1982-83*, it is envisaged that more emphasis will be put on demonstration, introduction and assistance in production of newly developed craft. The range of experimental work will be somewhat smaller than it has been during the past two years. Priority will be given to the smaller sizes of craft since these are accessible to the Programme's target population. However significant impact could also be achieved by providing assistance in the design of somewhat larger craft such as replacements for the 3½ tonners in Sri Lanka. In addition to the beachable type *SRL -11* mentioned 'above', a harbour based version of a similar craft would probably be of immediate interest for introduction

under one of the loan schemes supported by international development banks. For such specific purposes it may be possible to enlist additional funding support from those development banks or agencies supporting the investment programmes.

Coastal Aquaculture

35. By coastal aquaculture is meant the farming of fish and crustacea in brackishwaters. The following projects/activities are in progress :

BGD/CAC — Coastal Aquaculture, Bangladesh

IND/AAP — Aquaculture, Andhra Pradesh

IND/ATN — Aquaculture, Tamil Nadu

MAL/CAC — Coastal Aquaculture, Malaysia

SRL/CAC — Coastal Aquaculture, Sri Lanka

THA/ACD — Aquaculture Demonstration, Thailand

36. The progress of projects and activities in the field of coastal aquaculture has been hampered by the absence of an aquaculture specialist. Thanks to the input from the UNDP funded project RAS/77/044, preparation of projects has been undertaken for Bangladesh (shrimp-cum-paddy culture) and facilitated in the states of Andhra Pradesh (shrimp farming in ponds) and Tamil Nadu (pen culture) in India. The preparatory work in Andhra Pradesh and Tamil Nadu was undertaken by TCDC missions from Indonesia and Thailand respectively.

37. Otherwise the main thrust has been devoted to the *aquaculture demonstration project in Thailand*. The introduction of cockle culture has proved to be an economic success. The cage culture of sea bass and grouper has also caught on and private and cooperative farms are being set up. However the trials and experiments on cage culture undertaken by the project have not as yet demonstrated economic viability. This is to a very large extent dependent on the price of the trash fish, used for feeding. Except in situations where families can obtain the trash fish at low cost or produce it themselves the profitability of cage culture is still doubtful. The feasibility and viability of mussel and oyster culture have not yet been established and experiments will continue.

38. The community development work and the women activities under this project can be considered successful. Water supplies have been provided for two villages, jetties for two villages and women have been trained in the production of high quality shrimp paste.

39. A consultation with participants from all BOBP countries plus Indonesia and the Philippines took place in February in connection with the Phang Nga project. Aquaculture techniques and community development were discussed. A summary report is attached to this report as Annexure I.

40. A draft terminal report was prepared by the South China Sea Programme at the end of the first phase of the Phang Nga project which ended 30 September 1981. In the future BOBP will implement the project directly without the services of SCSP. It has been agreed that the demonstration project at Phang Nga will be extended by one year and expanded to the Satul Province where a project will be implemented at a village called Ban Bakan Koei.

41. The construction of the pond complex at *Ban Merbok* and the hatchery building at Pulau Sayak have been completed at the end of the reporting period. The objective of the project which was to build a pilot pond complex to be handed over to fish farmers for operation has been changed. It is now to serve as a demonstration and training centre for extension workers and fish farmers not only in the Ban Merbok area but in Malaysia as a whole. A master fish farmer from Indonesia and a hatchery technology expert from Thailand are under recruitment to take up their work early 1982.

42. The *work during 1982 and 1983* is envisaged as consolidation of the above activities without starting up any further projects. The Programme contains an interesting cross section

of different types of aquaculture activities and these should be sufficient to serve as examples of possible techniques for application in the region. During 1982 it is envisaged that a technical consultation will be convened in one of the participating countries in direct connection with one of the above mentioned projects.

Extension Service

43. Under this heading fall all projects and activities involving multi-disciplinary work with large components of social inputs primarily directed towards fisherfolk families. The following projects/activities are in progress :

BGD/VPI — Village Project Identification, Bangladesh

IND/CVD — Coastal Village Development, India

IND/VPI — Village Project Identification, India

IND/XOR — Extension Orissa

IND/XWB — Extension West Bengal

SRL/EXT — Extension Training, Sri Lanka

SRL/WOM -Women Resources Survey, Sri Lanka

The work undertaken in the field of extension services during the year is characterised by a search for a suitable formula to follow in future years. The progress can be itemised as follows :

44. Two *activities* which were started up in earlier years have been *cancelled*: Extension Services Establishment in West Bengal and the Extension Training Project in Sri Lanka. Both these projects were cancelled because of lack of support from the governments concerned.

45. Grass roots level development work has continued under the *coastal village development* project in Adirampattinam, Tamil Nadu, India. The project aims at mobilization of the villagers, without large assistance inputs in the form of funds and equipment. Notable progress has been made with regard to the issue of credits to women engaged in marketing and with the organisation of villagers in groups to defend their rights and obtain benefits available from Government and other sources. Voluntary organisations have been engaged to assist in the village work. Based on the experience from Adirampattinam short workshops have been held to discuss possibilities and limitations of development models in which officers from the Directorate of Fisheries have participated.

46. The *extension officers from Orissa were trained* in fishing gear technology and related matters during 8 weeks in Sri Lanka. This was the second batch of trainees bringing the number of officers trained to 16. Identification of follow-up training in Orissa was started at the very end of the reporting period.

47. *Surveys of fishing villages* with particular reference to the role of women have been undertaken in Sri Lanka, India, Bangladesh. The purpose of these surveys has been to identify possible assistance activities to improve the condition of coastal fishing families. The quality of the different surveys varies greatly since they have been undertaken by different persons/organisations applying different techniques. As to the outcome, the common result is that the prospects for viable assistance projects aiming at improving incomes by supplementary activities — fishery - related or otherwise — are not bright. Net making is one activity which is feasible in some areas; two small projects have been started in the villages surveyed in India and Bangladesh.

48. A *consultation-cum-workshop on development of activities for improvement of coastal families* was conducted in Dacca. All countries except India were represented in the workshop. The purpose was to define the problems of coastal fishing families with particular reference to women, discuss possible solutions and to develop specific ideas for assistance projects and programmes. A summary report of the consultation is attached as Annexure 2 to this report.

49. In implementing the above programme considerable experience has been gained through the close examination of particular situations in the surveys and through cooperation and discussions with a large number of people at different levels and in different organisations. A better understanding of the prevailing problems has been acquired. The main conclusion is that there is very little that an international agency like BOBP can do directly for betterment of the conditions of fisherfolk other than introduction of improved (increased productivity at reduced costs) fishery technology. The integrated pilot projects often talked about as a suitable vehicle for small-scale fisheries development are bound to have a very low benefit cost ratio. It is rather doubtful whether such pilot projects are replicable elsewhere in the region since the situations differ so much not only from one country to another but even within a country from one village to another. One positive aspect of such pilot projects however might be their value as a training ground for extension workers and others concerned.

50. The major inputs needed in the majority of villages are public facilities and services (provision of which is outside the terms of reference of the BOBP) and mobilization of the human resources. The latter is a formidable long-term task, the prospects of which are closely related to the over-all development of a country. This work, which can be labelled as extension, must be carried out at grass roots level by nationals of the country concerned. BOBP can assist only in a small way in establishing suitable systems for the work and in providing training for operators of the system.

51. The work undertaken to date has helped to create in fisheries administrations a better awareness of and an interest in the nature and extent of village problems. The most concrete example is the establishment of a special women extension officer post in the Directorate of Fisheries, Tamil Nadu. The Welfare division of the Sri Lanka Ministry of Fisheries is also showing an active interest in the promotion of women oriented activities. Another positive development which has been observed recently is a more frequent dialogue between government and voluntary organisations, which is at least partly attributable to the work of BOBP.

52. Following from the above assessment, it is suggested that the Programme somewhat re-orient its efforts in the field of extension services. Highest priority will be given to work related to the social feasibility of introduction of new technology developed by BOBP and others, i.e. introduction of beachlanding craft, improved fishing gear, etc.

53. The second priority will be assigned to establishment of extension services and training of extension staff. The BOBP input would be mainly concerned with advice in setting up suitable people-oriented extension services and training officers at medium and high level in this connection. It must be noted that the extent of success of this type of work depends largely on the commitment of the governments concerned and that as agreed in earlier Advisory Committee meetings, activities will not be taken up unless there is firm counterpart support.

54. The third priority will be given to village pilot projects. The ongoing village projects will continue but will be transferred as far as possible to national management with BOBP present only in the background. New village projects will only be taken up in cases where the prospects of lasting benefit to the target group are bright and clear.

Other Topics

55. This heading covers projects and activities which cannot be related to any of the above major subject matter areas. The project/activities which have been on the work Programme during 1981 are :

IND/FFH — Fresh Fish Handling

IND/FDT — Fish Drying Technology

IND/MAR — Fish marketing training courses

BOB/RES — Fishery Resources

BOB/TRS — Training in Resource Assessment and Statistics

IND/KE — Project Preparation, Kerala (RAS/77/044)

SAS/CES — Costs and Earnings Study, Kerala (RAS/77/044)

IND/PFD — Perspectives of Fisheries Development Study, Kerala (RAS/77/044)

56. Representatives of the participating countries gave a very low priority to the subject of *Fish Utilization* in their consultation with the Review Mission at the end of 1980. At that time the fish utilization expert post was vacant and FAO was searching for a suitable incumbent. Because of the low priority accorded to the subject and the real difficulties in locating a suitable expert it was decided to delete the subject of fish utilization from the programme. The two ongoing activities — the fresh fish handling project in Orissa and the fish drying project in Andhra Pradesh — were terminated during the year. These projects did not operate satisfactorily partly for technical reasons and partly because of inadequate counterpart support.

57. A thorough evaluation was undertaken of the two *training courses* in fish marketing conducted in Madras 1979 and Hyderabad 1980. It is believed that the evaluation will provide valuable information for the planning and conduct of similar training courses in the future. The evaluation will be issued as a working paper.

58. In the field of fishery resources, BOBP cooperated with the AsDB, SCSP and SEAFDEC in conducting two regional *training courses in fisheries stock assessment and statistics*. The courses were of 6 weeks duration and trainees from all BOBP countries participated. Full time lecturers and guest lecturers were funded by BOBP. Two *fellowships* were provided for training in *EEZ Fisheries Management*.

59. The three Kerala activities concerning costs and earnings study, project preparation, and perspectives study have been implemented under the RAS/77/044 project while supervision and *ad hoc* input were provided by BOBP.

60. For the future, activities related to fishery resources will be taken up under the new UNDP project RAS/81/051. This project is scheduled to commence early 1982.

61. The RAS/77/044 project with the main functions of assessment of problems and needs in small-scale fisheries and project preparation will be terminated at the end of 1981. Some of these functions are essential as integral parts of the Bay of Bengal Programme and it is therefore suggested that the *project preparation* activities continue under BOBP. This refers to projects as follow-up of BOBP technical activities e.g. investment projects for beachlanding craft and also concerns projects not directly related to BOBP work. With the knowledge and experience accumulated within the BOBP, it is felt that staff should be available more than hitherto to participate in project preparation, planning and evaluation in the participating countries.

62. In regard to training, the Programme has in the past supported *ad hoc* training activities, sometimes in subjects not directly related to the other work of the Programme. It is suggested that in future the support of study tours, training courses, seminars etc. be limited to subjects, and as far as possible persons, directly related to the work of BOBP.

Information Service

63. It has been a very busy and productive year for the information service. The two highlights are the launching of a newsletter — *Bay of Bengal News* — and a Photo Exhibition "Glimpses into small-scale fisheries in the Bay of Bengal".

64. Four issues of the *newsletter* have been produced, each containing special sections on the BOBP, Bangladesh, Tamil Nadu and Sri Lanka. The newsletter has been very well received as a popular presentation on BOBP work and a promoter of small-scale fisheries development.

65. The *photo exhibition* consists of about 100 photographs illustrating different small-scale fisheries activities in the Bay of Bengal i.e. fishing craft, fishing gear and methods, fish utilisation, community life and, as a special section, BOBP activities. The exhibition was inaugurated on World Food Day, 16 October, in Madras and was open for four days. It will be held in Colombo 4-7 December in connection with the regional Bay of Bengal fisheries meetings.

66. The *media coverage* of BOBP activities was good. *New York Times* featured BOBP's work on beach craft development early in the year. *Fishing News International* has run several stories about BOBP work. In the regional press, particularly in India, all major events such as conducting a consultation, launching a new fishing craft or receiving a TCDC mission, have been well covered in the press.

67. The main *documentation* work undertaken during the year has been the preparation of bibliographies on a few subjects and drafts of updated general descriptions of fisheries in the maritime states of India. These general descriptions were originally prepared under the RAS/77/044 and the preceding project RAS/74/031. These documents have proved to be very useful and need updating.

68. Four *reports* and four *working papers* have been issued in 1981 ; they are listed in Table 1. The production of reports and working papers is far behind schedule. This is partly because of the heavy work-load of the information service but also because the priorities of the experts' work have been on implementing activities rather than on preparing reports. However, the backlog has reached a level which should not be increased; at the end of the year there are about a dozen publications to be finalised.

69. The *major new activities* for 1982 will be the preparation of a slide show on BOBP in general plus specialist shows on the various subject matter areas — the latter to be used in consultations of technical expertise and also for training purposes. The production of a pictorial brochure using the photographs of the photo exhibition is also contemplated.

Project Inputs

70. The financial inputs available to BOBP for 1981 including savings from previous years have been utilised to the order of 75%. The savings refer mainly to the personnel component and contractual services. Details are given in Table 2. The large savings in cost of personnel are explained by the deletion of the fish utilization post and the fact that the aquaculture specialist post has been vacant the whole year; FAO has not been able to recruit a suitable incumbent. The savings in 1981 will be used during 1982 and 1983 for high priority work as recommended by the Committee.

71. The professional staff assigned to the Programme during the year is the same as at the end of 1980 (Table 3). Requests were made for new associate experts in the field of fishing technology and aquaculture but did not materialise. The associate expert in fishing technology, who is a marine biologist was reassigned after his first year as Fishery Biologist (Ass. Exp) and will mainly work on matters of concern to the new UNDP project RAS/81/051.

72. The consultants engaged during the year are listed in Table 4. Two problems have been encountered in the recruitment of consultants; it is increasingly difficult to identify good consultants up to the standard required for the work and there are always delays in their recruitment. For the future, efforts will therefore be made to engage a smaller number of long-term consultants to be used as far as possible for different projects and also under "when actually employed" contracts.

73. Three TCDC consultancy missions have supplemented the personnel inputs by the kind assistance of India, Indonesia and Thailand (See Table 4).

74. Programme staff have, as in previous years, travelled extensively in connection with the planning, execution, and monitoring of the many projects. The average number of days on duty travel by international staff was 104 with a low of 61 and a high of 194.

75. The Programme has continued to cooperate with national organisations, institutions and individuals for implementation of the work. Table 5 gives some details. Notable are the many fishermen groups and grassroots level organisations.

76. The major items of equipment, materials and supplies have been used in projects relating to fishing gear and methods and fishing craft technology and engineering.

77. The training component of the Programme has also not been fully utilised this year but nevertheless at a higher rate than in previous years. Two regional and one national consultations have been conducted. Study tours have been organised of which 7 have been international involving 22 persons and 4 have been national tours of 97 persons. Two fellowships for EEZ management have been granted. There has been one national training course for women in Thailand, a regional stock assessment/statistics course co-sponsored by AsDB, SCSP and SEAFDEC, and two persons have been sponsored to participate in a pen/cage fish culture course. The details are given in Table 6.

78. The counterpart input, as far as personnel is concerned, has improved during the year. None of the major activities has had any serious setbacks due to lack of counterparts. The counterpart input in monetary terms varies with country and type of activity. The major inputs during the year have been for the Programme's headquarters, two-boat trawling and boat building facilities in Tamil Nadu, the Ban Merbok project in Malaysia and the Phang Nga project in Thailand.

Table 1

1981	PUBLICATIONS	(GCP/RAS/040/SWE)
<i>Reports</i>		
BOBP/REP/4	— Role of Women in Small-Scale Fisheries in the Bay of Bengal. Madras, India, October 1980	
BOBP/REP/10.2	— Report of the Consultation on Stock Assessment for Small-Scale Fisheries in the Bay of Bengal. Chittagong, Bangladesh, 16-21 June 1980. Volume 2: Papers. Madras, India, October 1980.	
BOBP/REP/11	— Report of the Fifth Meeting of the Advisory Committee. Penang, Malaysia, 4-7 November 1980. Madras, India, January 1981.	
BOBP/REP/12	— Report of the Training Course for Fish Marketing Personnel of Andhra Pradesh, Hyderabad, India, 11-26 November 1980. Madras, India, September 1981.	
<i>Working Papers</i>		
BOBP/WP/2	— Inventory of Kattumarams and their Fishing Gear in Andhra Pradesh and Tamil Nadu. T R Menon, Madras, India, October 1980.	
BOBP/WP/11	— The Possibilities for Technical Cooperation between Developing Countries (TCDC) in Fisheries. E H Nichols, Madras, India, August 1981.	
BOBP/WP/12	— Trials in Bangladesh of Large-Mesh Driftnets of Light Construction. G Pajot, T K Das, Madras, India, October 1981.	
BOBP/WP/13	— Trials of Two-Boat Bottom Trawling in Bangladesh. G Pajot, J Crockett, Madras, India, October 1981.	
<i>Newsletters</i>		
January	Bay of Bengal News	
May		
September		
December		

Table 2
1981 — BUDGET AND ESTIMATED EXPENDITURE - GCP/RAS/040/SWE

(U.S. \$)

Codes	Object of Expenditure	Expenditure 1979/180	Budgets 1981	Expenditure* upto 31-10-81	Estimated expenditure	
					up to 31-12-81	Estimated Balance 31-12-81
10	Personnel Services	939,124	900,400	500,977	600,000	300,400
20	Duty Travel	197,027	130,000	122,349	147,000	117,000
30	Contractual Services	103,920	250,000	78,051	127,000	123,000
40	General Operating Expenses	93,048	80,000	56,619	78,000	2,000
50	Supplies and materials	150,685	180,000	139,380	151,000	29,000
60	Furniture and Equipment	148,204	110,000	43,891	84,000	26,000
80	Fellowships, grants and contributions	99,201	150,000	74,727	121,000	29,000
	Sub-total	1,731,209	1,800,400	1,015,994	1,308,000	492,400
90	Project servicing cost	242,369	252,056	142,239	252,056	—
	Grand Total	1,973,578	2,052,456	1,158,233	1,560,056	492,400

* As per FAO financial statement, October 1981

Table 3
1981 — PROFESSIONAL STAFF-GCP/RAS/040/SWE

S.No.	Post	Name of Incumbent (Nationality)	Date of (month/year)	
			Arrival	Departure
International Staff				
1.	Programme Director	Engvall, L.O. (Sweden)	11/78	
2.	Development Adviser	Pietersz, V. L.C. (Sri Lanka)	1/79	
3.	Fishing Technologist	Pajot, G. (France)	1/79	
4.	Fishing Craft Specialist	Ravikumar, R. (India)	9/79	
5.	Fisheries Engineer	Overa, A. (Norway)	9/80	
6.	Sociologist (Women Officer)	Patchanee (Ms) N. (Thailand)	8/80	
7.	Fishing Technologist (Ass. Expert)	Bergstrom, M. (Sweden)	10/80	10/81
8.	Extension Sociologist (Ass. Expert)	Blase, F.W. (Netherlands)	12/79	
9.	Socio- Economist (Ass. Expert)	Drewes, (Ms) E. (Germany FR)	10/80	
10.	Economist (Ass. Expert)	Tietze, U. (Germany FR)	10/80	
National Staff				
11.	Information Officer	Madhu, S.R. (India)	10/79	
12.	Administrative Officer	Sivaraman, N. (India)	4/79	
13.	Project Officer-Bangladesh	Kashem, A. (Bangladesh)	11/79	
14.	Project Officer-Sri Lanka	Perera, B.W. (Sri Lanka)	8/79	9/81

Table 4
1981 – CONSULTANTS-GCP/RAS/040/SWE

S.No.	Name	Nationality	Project	M/M
(a) International Consultants				
1.	Crockett, J.	U.K.	BG D/TBT	3.0
2.	Gowing, G.P.	Australia	IND/BCD SRL/BCD	1.75
3.	Rabanal, H.R.	Philippines	IND/ATN	0.5
4.	George, J.P.	France	SRL/DEF	3.0
5.	Raja, B.T.A.	India	BOB/TRS	2.25
6.	Jenkinson, T.E.	U.K.	BGD/SBN	2.0
7.	Eddie, G.	U.K.	BOB/INF	1.25
8.	Day, C.	U.K.	BOB/INF	0.75
9.	Mc Killop, J.	U.K.	BOB/SAL	1.0
10.	Miller, H.	U.K.	BOB/INF	2.0
11.	Feldman, S. (Ms)	U.S.A.	BGD/VPI	3.0
12.	Kurien, J	India	BOB/TRS	0.25
13.	Teutscher, F. (FAO)	Netherlands	IND/FDT	1.0
14.	Lisac, H (FAO)	Yugoslavia	IND/VFU	1.0
(b) TCDC Consultants				
1.	Samsi Soleh	Indonesia	IND/AAP	1.5
2.	Siregar, S	Indonesia	IND/AAP	1.5
3.	Mortono	Indonesia	IND/AAP	1.5
4.	Franklin, T.	India	SRL/CAC	8.0
5.	Soundara Raj, R.	India	SRL/CAC	8.0
6.	Saraya Anant	Thailand	IND/ATN	1.0
7.	Chalayondeja Kasemsant	Thailand	IND/ATN	1.0
(c) National Consultants				
1.	De Bruin, G.H.P.	Sri Lanka	SRL/DEF	9.0
2.	Ramamoorthy, P.V.	India	IND/TBT	6.0
3.	Husasin Shahid	Bangladesh	BOB/WOMC	0.75
4.	Yunus, M.	Bangladesh	BOB/WOMC	0.75

Table 5

**1981 — NATIONAL COOPERATING ORGANISATIONS/INSTITUTIONS/
INDIVIDUALS (GCP/RAS/040/SWE)**

S.No.	Name of Organisation	Project	Service
1.	Fishermen group, Tamil Nadu	BOB/FAD	Monitoring of indigenous fish aggregating devices
2.	Caritas/Kalidaha, Bangladesh	BGD/LMD BGD/TBT	Conduct of fishing trials
3.	Fishermen groups (9), Bangladesh	BGD/LMD BGD/SBN	Conduct of fishing trials
4.	Swedish Free Mission, Bangladesh	BGD/TBT	Conduct of fishing trials
5.	Fishermen groups (6), Tamil Nadu	IND/TBT	Testing of trawls and deck machinery
6.	Fishermen groups (3), Sri Lanka	SRL/DEF	Conduct of fishing trials
7.	Youth Fisheries Training Project, Sri Lanka	SRL/DEF	Conduct of demersal fishing trials
8.	Lion Trawler Industries, Sri Lanka	SRL/DEF	Conduct of bottom longlining trials
9.	Bangladesh Fisheries Development Corporation (BFDC)	BGD/MCC IND/KAT	Monitoring of trials with long tail engines
10.	Forest Research Laboratory, Bangalore	IND/KAT	Monitoring of trials with pressure treated logs
11.	Fishermen groups (5), Tamil Nadu and Andhra Pradesh	IND/BCD	Testing of beachlanding craft
12.	Fishermen groups (3), Sri Lanka	SRL/BCD	Testing of beachable craft and Oru replacement
13.	Tamil Nadu Fisheries Development Corporation	BOB/BBY	Boatbuilding facilities, Royapuram
14.	Md. Yunus, Bangladesh	BOB/WOMC	Consultation, filmstrips, audio-visual materials
15.	Caritas/Kalidaha, Bangladesh	BGD/VPI	Village survey and net making
16.	CVDP (Coastal Village Development Programme), Tamil Nadu	IND/CVD	Problem identification, mobilisation of fishermen, training government counter-part officers
17.	WWF (Working Women's Forum), Tamil Nadu	IND/CVD	Small credit distribution and collection in cooperation with nationalised banks
18.	Programme for Community Organisation, India	IND/VPI	Assistance in village level work
19.	Women's Bureau, Sri Lanka	SRL/WOM	Survey of fishing communities and the role of women's involvement
20.	Lanka Mahila Samiti, Sri Lanka	SRL/WOM	Planning of activities for development of coastal fishing families
21.	Youth Fisheries Training Centre, Negombo	IND/XOR	Training of fisheries extension officers from India
22.	Rajalaxmi Fishermen Coop. Soc. Balasore	IND/FFH	Testing of fish boxes

Table 6

1981 -TRAINING ACTIVITIES-GCP/RAS/040/SWE

S.No.	Subject	Dates/ Duration	Venue	Number of Participants				
				BGD	IND	MAL	SRL	THA
1.	<i>Consultations/Seminars etc.</i>							
1.1*	Regional consultation on the study of implementation and objectives of an operational small-scale fisheries development project	11-13 Feb.	Phang Nga	2	2	2	2	6
1.2	Consultation-cum-workshop on the development activities for improvement of coastal fishing families	27 Oct - 06 Nov.	Dacca Bangladesh	6	—	2	4	2
1.3	Workshop: New Development Models	29-30 Oct.	Madras, India	—	5	—	—	—
2.	<i>Study Tours</i>							
2.1	Small-scale fishing operations	2 months	Sri Lanka	—	9	—	—	—
2.2	Small-scale fishing operations at Veraval	3 weeks	India	—	1	—	—	—
2.3	Handicrafts	1 week	Philippines	—	—	—	—	3
2.4	Set bagnet fishery of Maharashtra	4 weeks	India	9	—	—	—	—
2.5	Aquaculture development	2 weeks	Thailand/ Indonesia	—	—	6	—	—
2.6	Beach craft trials	2-3 weeks	India	—	—	—	3	—
2.7	Improved deck machinery	1 week	India	—	1	—	—	—
2.8	Aquaculture development - 6 Thailand provinces	1 week	Thailand	—	—	—	—	54
2.9	Small-scale fisheries development	1 week	India	—	—	—	1	—
2.10	Aquaculture development- 6 Thailand provinces	1 week	Thailand	—	—	—	—	40
2.11	Fish processing	1 week	Japan	—	—	—	—	3
2.12	Aluminium welding at BHEL — Trichy	2 weeks	India	—	2	—	—	—
3.	<i>Fellowships</i>							
3.1	EEZ management course -Halifax	3 months	Canada	—	1	—	1	—
4.	<i>Training Courses</i>							
4.1	Handicraft training for women	1 week	Ban Sam Chong Thailand	—	—	—	—	30
4.2**	Regional training courses in stock assessment and fishery statistics	6 weeks	Samutprakarn Thailand	6	7	6	4	18
4.3	Training in small-scale cage and pen culture for finfish	3 weeks	Philippines/ Hongkong	—	—	—	—	2

* Also two participants each from Indonesia and Philippines.

** In cooperation with AsDB, SCSP and SEAFDEC.

6th Advisory Committee Meeting, 1-5 December 1981, Colombo, Sri Lanka

**SUMMARY REPORT OF THE CONSULTATION ON THE
“AQUACULTURE DEMONSTRATION FOR SMALL-SCALE FISHERIES
DEVELOPMENT” PROJECT. PHANG NGA. THAILAND, 11-13 FEBRUARY 1981.**

1. The Consultation was held at the Phang Nga Resort Hotel, Phang Nga, Thailand, 11-13 February 1981. Representatives of the five BOBP countries, plus Indonesia and the Philippines and staff of BOBP and SCSP participated in the consultation.
2. The Consultation was in the nature of a case study of the Phang Nga Aquaculture Project to enable the participants to observe the project activities, exchange their knowledge and experiences in small-scale fisheries development and to present constructive suggestions for further improvement.
3. The programme followed was to visit the various project villages, visits being preceded by a briefing and followed by discussions on the activities observed. The villages visited were Sam Chong, Ko Khiam, Bang Pat, Ko Mai Pai and Ko Pan Yi at which activities related to the three components of the project, namely aquafarming, community development and women activities were observed. At Sam Chong the training in improvement of shrimp paste quality (women activity) and fish cage culture (aquafarming) were observed: at Ko Khiam, fish cage culture (aquafarming) and drinking water supply by means of concrete lined well, storage tank and windmill pump (community development) ; at Bang Pat reinforced concrete tank for storage of rain water (community development) ; at Ko Mai Pai training in handicraft (women activity) and cockle culture (aquafarming) and at Ko Pan Yi, fish cage culture (aquafarming).
4. The cockle culture has already acted as a catalyst to generate follow-up action. The successful culture of cockle by a village group in a small 320 m² plot has been directly responsible for a 1.8 million baht grant from the provincial government to seed larger areas in Phang Nga bay.
5. The species used for fish cage culture are sea bass and grouper. Initially the fish seed was supplied by the Department's brackishwater fishery stations in the south but subsequently the villagers learned to collect sea bass and grouper fry from natural sources in the bay. If cage culture develops on a large-scale as a sequel to the demonstration project, the fry would have to be supplied by state or privately managed hatcheries. Village level hatcheries are not considered feasible — induced or natural spawning of marine species in hatcheries is much more difficult than in the case of freshwater species and Phang Nga is not a particularly good area for a hatchery. On the other hand, village level nurseries for sea bass fry are feasible.
6. The operation of the cages had not yet been carried out over a sufficiently long period to enable a detailed economic study but the preliminary indications are that their operation will be economically viable. Initially a six cage raft cost 19377 baht but this was later reduced to some extent by using discarded polyfoam floats from the tin mines instead of plastic containers—besides the nets, the floats form one of the major cost components. It may be possible to effect a further reduction of about 25% by making greater use of locally available materials. It was suggested that while sea bass could grow to 2 to 3 kg in 2 to 3 years, it would be more profitable to raise them only for 6 months when they weigh about 600 gms, at which size they sell for 40 to 50 baht/kg in the Phuket area.
7. If there is extensive application of fish cage culture in the area, marketing is recognized as a potential problem that must be looked into.
8. When introducing aquafarming, the importance of gaining the fishermen's confidence by demonstrating the tangible benefits to be gained was emphasized. In the initial six-fishermen

groups set up to operate the cages, personal problems arose as usually only one or two persons did most of the work. These problems were solved by turning over the cage operation to an individual or small family group.

9. The need to tackle community development problems and to diversify project activities emerged from the original socio-economic survey and project identification which showed that the most pressing needs were supply of drinking water, alternative sources of income and occupations for women.

10. Problems encountered in construction of the water tank in Bang Pat included the difficulty of transporting construction material in small boats especially during the SW-monsoon season and the partial failure of the efforts to get the villager to contribute their labour. Only 8 villagers provided free labour and 4 labourers had to be hired to finish the tank. Future maintenance and repair of the tank will be a problem and it was suggested that a small charge be levied for the water supplied, to provide for this.

11. The plans to construct small family sized solar stills under the project for producing fresh water were described. The stills are inexpensive to build and can be easily operated by each family. It is planned to work through the local schools to train teachers and students to construct and operate the solar stills.

12. The main activities undertaken for the women are fish processing and handicrafts-these activities cater generally to two age groups; the older women being more involved in processing and the younger in handicrafts. Processing relates mainly to improving the quality of shrimp paste and the making of other products e.g. fish sausages, shrimp biscuits. It was considered necessary to introduce handicrafts, as the raw material for shrimp paste (Acetes) is limited and seasonal and hence an alternative source of income is required.

13. In the case of processing, the cost of production of the improved shrimp paste is higher due to the longer period of fermentation and added ingredients but it is expected that it can be sold at a price which is 2½ times more than the price of the traditional paste. Training in processing was provided at the village level.

14. In the case of handicrafts the activity was limited to cotton twine macrame work and leaf and palm frond weaving. Training was provided at two levels-training of teachers in Bangkok and village level training to groups of women. The Department of Local Production provided staff and facilities for training.

15. In the discussion it was suggested that shell craft, which is already an industry in Phuket, could be included. It was also suggested that since these handicraft products are meant primarily for tourists, there should be more effort to produce articles for the local market.

16. An activity which can be best practised on a family basis is seen to be aquaculture, particularly cage culture. Initially, training in aquafarming techniques was given in the project only to men but later women were also involved- e.g. some women were included in the training course on the management of a village level nursery for fish fry. More extensive involvement of family groups is planned for the future.

17. The project has provided a small amount of seed money to purchase materials to make handicraft products. The provincial government is expected to provide working capital for starting improved shrimp paste production on a larger scale. A coordinated effort by various government agencies and the provision of credit is necessary to expand the activities.

18. An effective extension service would be the best answer to spread these techniques to other villages where conditions are favourable. One suggestion for following up the work of the project was for the Fisheries Department to survey the other villages in the area, select those that could adopt a specific type of aquaculture, disseminate information on what has been accomplished, and start a training programme for village leaders in the appropriate technology. As one means to carry out such work, the Department of Fisheries now plans to establish a Marine Extension Service through a UNDP supported project.

19. A number of participants suggested that the demonstration project conduct when appropriate, studies on the economic viability of each major activity and prepare project proposals for banks or other credit programmes.

6th Advisory Committee Meeting, 7-5 December 1981, Colombo, Sri Lanka

**SUMMARY REPORT OF THE CONSULTATION-CUM-WORKSHOP
ON DEVELOPMENT OF ACTIVITIES FOR IMPROVEMENT OF COASTAL
FISHING FAMILIES. DACCA, BANGLADESH, OCT. 27 - NOV. 6, 1981.**

The aim of the workshop was to develop practical ideas for the improvement of coastal fishing families in the BOBP member countries. There were 23 participants, including "resource persons" (visiting experts) and BOBP staff.

The workshop adopted a participatory approach: all participants took an active part in the discussion and assisted each other in arriving at solutions to problems. Dynamic learning methods such as group work, discussions, field trips and case studies were employed.

The workshop consisted of three phases. In the first, it tried to analyse the problems faced by small-scale fishing families/communities by sharing experiences and studying data gathered from surveys and case studies. The organisational set-up in each country and its limitations were also discussed. In the second, the participants looked into the different strategies and techniques that some organisations have adopted to help solve the problems of rural folk. This was an important input and helped participants formulate clearer ideas to develop their own programmes in phase three of the workshop. An important activity before phase three was to develop project guidelines for these programmes.

Through discussion of several issues during the workshop the group agreed that to bring about a better standard of living for small-scale fisherfolk, the country fisheries development programme should include :

1. Activities to improve fishing technologies
2. Betterment of other income-earning activities
 - 2.1 Improvement of already existing activities
 - 2.2 introduction of new activities
3. Activities to improve the quality of life — e.g. health, nutrition.

It is essential that all these activities are synchronised and closely related. More important, they should take into consideration the conditions peculiar to each community. All the activities should ensure the betterment of the family as a whole.

The workshop was mainly concerned with items 2 and 3, with which women are involved to a greater extent. It was felt that a project designed only for women or which singles out women from their families, is not realistic. Its approach should be "family oriented" and emphasize those activities in which women are mainly involved.

The participants emphatically agreed that women have been generally disadvantaged by political and economic circumstances and religious and cultural values. But a project should aim at improving the living conditions of the whole family rather than at ameliorating the conditions of women alone. In the process, the family can best fulfil its development potential only if women are given equal opportunities in all respects.

Discussion and exchange of ideas among participants plus field trip observations led to a consensus on the following points as being essential to the successful implementation of projects.

1. Strengthening of cooperation and coordination between government and non-government organisations to ensure effective utilisation of resources and facilities.
2. Effective organisation of the target groups to ensure their involvement in planning, implementation and evaluation at all levels.
3. Training of fisheries extension workers, supervisors and target groups in both skills and methods.
4. Regular assessment of problems and needs and continuous support at all levels through effective supervision.

The participants from each country then developed project ideas with all these points in mind.

Bangladesh : An integrated pilot project for training extension officers — both in extension methods and in technology — was suggested for implementation in two fishing villages (Jaldia and Mohra). The team suggested that a committee of government and non-government agencies should formulate detailed guidelines for the pilot project. The executing agency for the project should be the Marine Fisheries Department, Chittagong, of the Ministry of Fisheries and Live-stock.

Malaysia : The nation-wide aquaculture demonstration-cum-training project — which envisages training of fishermen from all over the country at Ban Merbok — may take another three years to reach the training stage. The Malaysian participants therefore proposed organisation of a pilot course in three villages near Ban Merbok which will incorporate both technical training and community development programmes, not only for fishermen but for fishing families as a whole. The help of other departments, like KEMAS (a government community development organisation) will be enlisted.

Thailand : The participants decided to develop project ideas to continue the BOBP sponsored Phang Nga aquaculture demonstration project. Since technical development activities in Phang Nga have proved to be successful, the participants drew up a proposal to extend them to all the potential beneficiaries in Phang Nga Bay. Activities to provide alternative sources of income for family members will also be continued along with aquaculture. A provincial level meeting will be initiated to secure cooperation from other agencies in credit schemes, community development, health etc. Extension training is also planned for project officers at Phang Nga and at Satul for local fisheries officials.

Sri Lanka: The participants felt that lack of training and proper orientation at different levels and the dearth of accurate and up-to-date socio-economic data are major constraints in planning and implementing the right projects. Four activities were proposed in this context: three workshops for fishery extension officers at different levels and a project to establish guidelines for socio-economic surveys of fishing communities.

6th Advisory Committee Meeting, 7-5 December 1981, Colombo, Sri Lanka

CONSIDERATIONS FOR A SECOND PHASE OF BOBP

This document has been prepared for the purpose of facilitating discussion about the second phase of the BOBP for small-scale fisheries development. It is not meant to be a project proposal but is an attempt to delineate the principal issues which have to be considered and agreed upon by the parties concerned before the preparation of a project proposal.

The Need

Numerous studies, surveys, evaluations, assessments, etc., have resulted in recommendations to improve the socio-economic conditions of the small-scale fisher-folk. The extent to which the fisherfolk are worse off than other sectors of the population is not clear, but there seems to be a consensus that their condition is usually more depressed than that of farmers and other poorer sectors. Apart from the poverty level, other reasons for paying attention to the fisherfolk, are that (i) the sector is labour intensive, (ii) it exploits a renewable resource and (iii) it provides much-needed animal protein.

In general therefore, there is a need and justification for assistance. But the sector is diverse and the needs as well as prospects vary a lot from one sub-sector to another, and penetration of the characteristics is necessary to facilitate development in the right direction.

Remedies

What can be done to satisfy the need to improve the socio-economic conditions of fisherfolk? If we look at any given situation there is a multitude of problems — big and small. There might be cases in which the solution of a single problem can bring about a substantial improvement but usually more than one problem has to be tackled at the same time. Whatever the situation, the four basic remedial inputs available are political, social, financial and technological.

(a) By *political* inputs is meant the organisation of people and the mobilisation of human resources for the purpose of securing collective benefits such as, for instance, public amenities or individual benefits such as higher prices for the produce. In order to obtain these benefits, organisations or groups, be they cooperatives, associations or unions usually have to act as pressure groups and exert "majority power" to defend or obtain their rights.

(b) By *social* inputs is meant public facilities and services such as roads, landing facilities, water supply, schools, medical care, etc. These inputs will usually lead directly to social uplift and may also indirectly increase incomes by facilitating economic activity.

(c) By *financial* inputs is meant credit and associated financial incentives primarily to augment the means of production but also to provide basic needs at times of economic difficulty. In recent times the practice has grown up of spending large amounts of money as subsidies for purchase of the means of production as well as for houses and other basic needs. Subsidies may be of value in introducing or promoting certain technologies or methodologies but blanket subsidies do not lead to development and financial inputs are too often used for welfare instead of sustained development.

(d) By *technological* input is meant technical development of the tools of economic activity to make them more effective, less costly or more safe and comfortable for the practitioners. Increased efficiency and lower costs will lead to better incomes which in turn will certainly help to improve socio-economic conditions, though the degree of improvement will depend on the spending pattern of the beneficiaries.

Each small-scale fisheries situation in the region will need a different mix of the above inputs. Furthermore, in each situation, several public and private sector agencies and sometimes international agencies are engaged in development work aiming at the improvement of socio-economic conditions. What everyone is aiming at is an integrated development process but the different agencies cannot individually achieve this. They all have their own contribution to make and it is very important that their respective roles are clearly defined. The BOBP is one of the agencies involved.

BOBP Scope of Work

To what extent can a "BOBP" satisfy the above input requirements?

(a) An agency like BOBP should not be engaged in political inputs even though these are distinct from politics *per se*. The original BOBP document included work in the field of strengthening fishery cooperatives. The Advisory Committee amended this for the reason that this type of work is a national responsibility. Besides being a sensitive area, the work is not appropriate for an international agency. Most of it has to be undertaken at the grassroots level for long periods with an intimate knowledge of language and customs as an essential qualification for the workers. A possible role however could be education and training of middle to high level officers in the administrations regarding the methodology for mobilization of human resources.

(b) The social inputs are perhaps the inputs that are most needed. The responsibility for such work usually lies with departments other than fisheries in the government set up. This is one reason why an international agency supporting fisheries should not be engaged in this type of work. Another reason is that FAO/BOBP's function is to provide technical assistance, while in the field of social facilities and services the main requirement is finance.

(c) The financial inputs are also crucial for the development process but there are specialised agencies, national and international, for providing credit. This therefore, should not be the role of a technical assistance agency.

(d) Technology development is the speciality of FAO and the main function of the present BOBP. It should therefore logically constitute the main scope of work. FAO is not unique in extending technical assistance in fisheries but is perhaps the most competent agency. The scope should not include only technology development itself but also the application of the developments i.e. demonstration and extension of the improved or newly developed technologies and methods. The principal technical disciplines to which efforts could be devoted are (i) fishing gear and methods, (ii) fishing craft technology, (iii) coastal aquaculture and (iv) post harvest technology i.e. processing and marketing.

BOBP's experience, however, suggests that the subject of post harvest technology should be dealt with in a different way from the others for the following reasons:

Improved processing practices usually increase the cost of production and while quality is improved, a higher price is not realized for the product in the short term. If and when it is realized, it is the traders or the middlemen and not the producer who reap the benefits in the first place. Marketing is closely linked with the political and social organizations in society (middlemen) and attempts to improve it must also tackle the organisational aspects. Minor improvements can probably be achieved by technical inputs in handling and distribution of fish but this again usually benefits the traders and the middleman rather than the primary target group of fisherfolk.

It is therefore suggested that the scope of the work should be confined to technology development in the fields of fishing gear and methods, fishing craft technology and coastal aquaculture.

The Regional Approach

The experience of the ongoing BOBP demonstrates that the regional approach to technology development is feasible. Unlike most of the political and social problems the technical problems are common to many countries and can be tackled on a regional basis. Although there might be a need for a BOBP type of operation in each country it would be wasteful to tackle all the

problems separately in each country. The beachlanding craft are a good example. The regional approach with projects and activities implemented largely by the countries themselves but supported by short term technical expertise from the regional programme leads more quickly to self reliance and considerable savings can be effected in the costs of international expertise. The ideal end-product would be a regional set up for administration and information which will provide a forum for regional cooperation, while the actual day to day work is carried out by the national institutes of the member countries. It will however take a long time before this consummation is reached in the Bay of Bengal region and the international assistance effort should not be given up until that stage has been reached.

Nature of Work

The nature of work would be essentially similar to that of the present Bay of Bengal Programme. The highest priority should be given to physical experimental work and trials with boats, gear, fish farming, etc., to solve particular problems of crucial importance and preferably of regional relevance. The type of work will automatically provide in-service training to staff and the results will be used as examples for wider application. High priority should also be given to more basic training of technologists so that the counterpart staff is equipped with the diversified knowledge required to attain self-reliance. The third priority should be given to advisory services and dissemination of information. The priority rating given above is more in terms of allocation of inputs rather than of importance.

Objectives

To sum up the previous sections, the objective of the project would be somewhat as follows:

To contribute to the socio-economic betterment of small-scale fisherfolk in the countries bordering the Bay of Bengal, by providing support for development of appropriate production technology, leading to increased productivity, reduced costs, and greater, safety and comfort for the practitioners, through experiments and trials, training of staff. and provision of advisory and information services.

output

The expected outputs of the project would be :

- (a) *improved productivity*, through
 - more effective gear
 - diversification of methods
 - higher mobility of craft (engines, sails)
 - extended fishing seasons
 - better fish farm engineering
 - improved fish farm management
- (b) *Reduced cost of operation*, through
 - fishing units of appropriate size
 - low cost equipment and gear
 - energy saving propulsion
- (c) *Higher prices*, through
 - selective gear and methods
 - improved handling and preservation of catch
 - selective culture in ponds, pens, cages, etc.
- (d) *Higher safety and comfort* (marine fisheries) through
 - means of propulsion (engine/or sail)
 - easy handling of gear and operation of craft
 - protection against the elements

Input

The minimum input requirement to deliver a meaningful output as outlined above is one subject matter expert in each discipline. However, the subjects are complex and consideration should be given to the utilisation of two experts for each subject matter area. This would, in addition to providing more manpower, also ensure continuity and wider technical coverage. By having two experts in each subject the use of consultants could be reduced. Although in theory, consultants are useful instruments, they are in practice very difficult to mobilize due to recruitment/clearance procedures and the uncertainty about the competence of consultants recruited for the first time. While the number of consultant man-months could be reduced by using two experts in each subject, some provision will still be required for specialists in certain aspects of the above field or for dealing with unforeseen problems that may turn up.

In addition to the subject matter experts, consultative staff in the disciplines of sociology and economics are required. It is also possible that some of this input could be provided by the use of national counterpart staff or national consultants.

Regarding the budget, relatively high inputs should be provided for equipment, supplies and materials, contractual services and training.

A possible additional input which has not been utilised under the present BOBP is supplementary bilateral funding for specific activities undertaken in individual countries. For instance, if a certain fishing gear activity requires a considerable input which cannot be provided or justified under the regional budget, there should be possibilities of obtaining supplementary funds either from the bilateral SIDA programme in the country concerned or from the country programmes of UNDP and other agencies.

In the present BOBP, the government input has not been specified except in very general terms. In a follow-up project also it is probably not desirable to stipulate a clearly defined input from each government since this will also automatically tie up the regional funds as matching contributions, thereby considerably reducing the operational freedom enjoyed by the regional project. One of the main advantages of the regional funds moreover is that they can be utilized in addition to the national funds without being limited by certain government regulations.

Organization

A follow-up of the BOBP would be a support unit under the Bay of Bengal Committee. It would be one module together with others such as the resource monitoring project. It is also suggested that the project should be similarly reviewed yearly as is now being done in the Advisory Committee meeting.

The project should be located in the same place as other modules of the BOBC in order to simplify administration, avoid confusion and facilitate cross disciplinary exchange of information and cooperation. This should be decided upon by the BOBC.

Regarding the working arrangements with the cooperating agencies, clearer guidelines on agreements than those in force under the present BOBP are desirable particularly in respect of the liaison and counterpart staff.

Time Frame

The BOBC and its support programmes should be seen as a permanent setup. The priorities will of course vary as will the ratio between the input from external sources and that from the countries of the region. For a very long time to come however, the BOBC's work will be entirely dependent on support from development agencies.

Another phase of BOBP should, because of the nature of the work and the disadvantaged countries of the region, have an open ended duration with evaluations, say, every three years, in addition to the yearly reviews.

Publications of the Bay of Bengal Programme (BOBP)

Development of Small-Scale Fisheries (GCP/RAS/040/SWE)

Reports (BOBPIREPI. . . .)

1. **Report of the First Meeting of the Advisory Committee.**
Colombo, Sri Lanka, 28-29 October 1976.
(Published as Appendix 1 of IOFC/DEV/78/44.1, FAO, Rome, 1978)
2. **Report of the Second Meeting of the Advisory Committee.**
Madras, India, 29-30 June 1977.
(Published as Appendix 2 of IOFC/DEV/78/44.1, FAO, Rome, 1978)
3. **Report of the Third Meeting of the Advisory Committee.**
Chittagong, Bangladesh, 1-10 November 1978. Colombo, Sri Lanka, 1978.
(Reissued Madras, India, September 1980)
4. **Role of Women in Small-Scale Fisheries of the Bay of Bengal.**
Madras, India, October 1980.
5. **Report of the Workshop on Social Feasibility in Small-Scale Fisheries Development.**
Madras, India, 3-8 September 1979. Madras, India, April 1980.
6. **Report of the Workshop on Extension Service Requirements in Small-Scale Fisheries.**
Colombo, Sri Lanka, 8-12 October 1979. Madras, India, June 1980.
7. **Report of the Fourth Meeting of the Advisory Committee.**
Phuket, Thailand, 27-30 November 1979. Madras, India, February 1980.
8. **Pre-feasibility Study of a Floating Fish Receiving and Distribution Unit for Dubla Char,**
Bangladesh. G. Eddie, M. T. Nathan. Madras, India, April 1980.
9. **Report of the Training Course for Fish Marketing Personnel of Tamil Nadu.**
Madras, India, 3-14 December 1979. Madras, India, September 1980.
- 10.1 **Report of the Consultation on Stock Assessment for Small-Scale Fisheries in the**
Bay of Bengal. Chittagong, Bangladesh, 16-21 June, 1980.
Volume 1: Proceedings. Madras, India, September 1980.
- 10.2 **Report of the Consultation on Stock Assessment for Small-Scale Fisheries in the**
Bay of Bengal. Chittagong, Bangladesh, 16-21 June 1980.
Volume 2: Papers. Madras, India, October 1980.
11. **Report of the Fifth Meeting of the Advisory Committee.** Penang, Malaysia,
4-7 November 1980. Madras, India, January 1981.
12. **Report of the Training Course for Fish Marketing Personnel of Andhra Pradesh.**
Hyderabad, India, 11-26 November 1980. Madras, India, September 1981.
13. **Report of the Sixth Meeting of the Advisory Committee.** Colombo, Sri Lanka,
1-5 December 1981. Madras, India, February 1982.

Working Papers (BOBPI WPI. . . .)

1. **Investment Reduction and Increase in Service Life of Kattumaram Logs.**
R. Balan. Madras, India, February 1980.
2. **Inventory of Kattumarams and their Fishing Gear in Andhra Pradesh and Tamil Nadu.**
T. R. Menon. Madras, India, October 1980.

3. Improvement of Large-Mesh Driftnets for Small-Scale Fisheries in Sri Lanka,
G. Pajot. Madras, June 1980.
4. Inboard Motorisation of Small G.R.P. Boats in Sri Lanka.
Madras, India, September 1980.
5. Improvement of Large-Mesh Driftnets for Small-Scale Fisheries in Bangladesh.
G. Pajot. Madras, India, September 1980.
6. Fishing Trials with Bottom-Set Longlines in Sri Lanka.
G. Pajot, K. T. Weerasooriya. Madras, India, September 1980.
7. Technical Trials of Beachcraft Prototypes in India.
ϕ Gulbrandsen, G. P. Gowing, R. Ravikumar. Madras, India, October 1980.
8. Current Knowledge of Fisheries Resources in the Shelf Area of the Bay of Bengal.
B. T. Antony Raja. Madras, India, September 1980.
9. Boatbuilding Materials for Small-Scale Fisheries in India.
Madras, India, October 1980.
10. Fishing Trials with High-Opening Bottom Trawls in Tamil Nadu, India.
G. Pajot, John Crockett. Madras, India, October 1980.
11. The Possibilities for Technical Cooperation between Developing Countries (TCDC) in
Fisheries. E. H. Nichols. Madras, India, August 1981.
12. Trials in Bangladesh of Large-Mesh Driftnets of Light Construction.
G. Pajot, T. K. Das. Madras, India, October 1981.
13. Trials of Two-Boat Bottom Trawling in Bangladesh.
G. Pajot, J. Crockett. Madras, India, October 1981.
14. Three Fishing Villages in Tamil Nadu.
Edeltraud Drewes. Madras, India, February 1982.

Miscellaneous Papers (BOBPIMIS/)

1. Fishermen's Cooperatives in Kerala : A Critique.
John Kurien. Madras, India, October 1980.

Newsletters:

1. *Bay of Bengal News*. January 1981, May 1981, September 1981, December 1981.