

Report of the Training Course for Fish Marketing Personnel of Andhra Pradesh

Hyderabad, India

11 - 26 November, 1980



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Development of Small-Scale Fisheries in the Bay of Bengal
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PREFACE

This document is the report of a two-week training course held in November 1980 for some 20 officials of Andhra Pradesh State in South India who are concerned with fish marketing. The course was organised jointly by the Directorate of Fisheries, Andhra Pradesh and the Bay of Bengal Programme in cooperation with the Administrative Staff College of India, Hyderabad.

The report outlines the rationale, preparation and conduct of the course. It discusses the structure of the business game, the principal method of instruction, and details the "marketing strategies" for the game adopted by each group of participants. It analyses the work submitted by them, the knowledge they gained from the course and their reactions to various course components.

The report may be found useful by small-scale fisheries planners, by people engaged in fish marketing and by organisers of similar training courses and workshops.

The training course was an activity of the Bay of Bengal Programme for the Development of Small-Scale Fisheries, referred to in brief as the Bay of Bengal Programme. Its main aims are to develop and demonstrate technologies and methodologies to improve the conditions of small-scale fisherfolk and the supply of fish from the small-scale sector in five countries bordering the Bay of Bengal — Bangladesh, India, Malaysia, Sri Lanka and Thailand. The Programme is executed by the Food and Agriculture Organisation of the United Nations and funded by the Swedish International Development Authority.

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1. INTRODUCTION

The training course for fish marketing personnel of Andhra Pradesh was held at the Administrative Staff College of India in Hyderabad from November 11 to 26. Participants were some 20 officials from the Andhra Pradesh Fisheries Corporation and the Department of Fisheries—several middle-level and some junior officers. Most of the participants were concerned in some way or the other with fish marketing.

Since the background and work experience of the participants was heterogeneous, the course covered a wide range : it aimed at upgrading not merely the management and accounting skills of the participants but also their knowledge of fish handling, of the role of the fisheries sector in the State's economy, of socio-economic patterns in fisheries and so on. It was also considered necessary to apply this knowledge during the course to existing conditions in Andhra Pradesh so that the course could be practically relevant and useful.

To attain these aims, experts both within and outside the region, besides people actually engaged in fish marketing, were drafted as lecturers. The teaching method included both active forms of learning—such as discussions and group learning — and passive, receptive forms, such as films and lectures.

For 'active' forms of learning, the most appropriate training tool was believed to be the Business Management Game for the Marketing of Fish, developed by the White Fish Authority, United Kingdom. The effectiveness of the business game in a course conducted by BOBP in 1979 (for fish marketing personnel of Tamil Nadu) was an important factor in its favour.

Two consultants from the White Fish Authority, U.K.— Mr. Keith Haywood and Mr. Ron Nicholson—were recruited for the conduct of the business game. The lecturers included Mr. H. Lisac of FAO Rome; Dr. V. Abraham and Dr. S. R. Reddy from Andhra University, Waltair; Dr. U. K. Srivastava from the Indian Institute of Management, Ahmedabad; Mr. A. Nordheim from FAO Rome. Executives from the Directorate of Fisheries, the Andhra Pradesh Fisheries Corporation, the Administrative Staff College of India and the Marine Products Export Development Authority (MPEDA) also gave talks.

The course was inaugurated on November 11 by Mr. G. K. Rao, the State's Secretary for Fisheries, who gave a talk on "Development of fish marketing in India: prospects and problems". Mr. S. Banerjee, Director of Fisheries, discussed "Fisheries in Andhra Pradesh — resources and utilisation." Mr. M. Kanda, managing director of the Andhra Pradesh Fisheries Corporation (APC), also spoke. The course concluded on November 26 with the distribution of certificates to participants by Mr. N. B. Rao, Minister for Small-Scale Industries and Fisheries.

The chapters that follow contain basic information about the participants, details and analysis of the course they underwent and their response to it.

2. COURSE CURRICULUM

The training course was meant to improve existing knowledge and develop new *know/edge* about :

- Techniques of management, marketing and accounting.
- Problems and prospects of fisheries and fish marketing in Andhra Pradesh.
- Marketing strategy and accounting system of the Andhra Pradesh Fisheries Corporation.

Lectures, slides, films and learning materials were used for the purpose.

The course also tried to develop the vocational *skills* of the participants, such as

- filling in profit and loss statements, cash summary records and balance sheets;
- analysing market research data etc.

The business game was the main tool for sharpening these skills.

While professional knowledge and vocational skills are essential, a marketing organisation cannot succeed unless its employees cultivate the right attitude about its objectives and responsibilities. At the training course, the work of the APFC was therefore discussed in the light of its objectives and responsibilities.

Finally, what the participants learnt by way of new knowledge and vocational skills was tried and tested through practical application at the course itself. An existing project proposal — a fish marketing development strategy for Andhra Pradesh recommended a few years ago by a team of experts that conducted a feasibility study- was “implemented” by the participants themselves, then debated and dissected by them.

The programme of the training course is detailed in Appendix 2.

2.2 Subjects

A number of subjects were covered at the Hyderabad training course. The table below shows the time taken up by each subject.

Table 1
Allocation of subjects and time

Main subject	Subsidiary subject	Time	
		Hours spent on it	Relative share of total training time
1) Features of corporate marketing organisations	— marketing strategy of the Andhra Pradesh Fisheries Corporation (APFC) (1.1)	1	
	— accounting system of APFC (1.2)	1½	
	-fish marketing in India and future role of corporation-type marketing organisations (1.3)	1	
		<u>3½</u>	5%
2) Andhra Pradesh fisheries	— sociological, economic and technical aspects of fisheries development in A.P. (current fish marketing problems, socio-economic patterns, indebtedness and marketing margins) (2.1)	4	
	— game : implementation of a fish marketing development project in A.P. on the basis of a feasibility study (2.2)	9	
	— round table discussion on problems and prospects of A.P. fisheries (2.3)	2½	
		<u>15½</u>	22%

Table 1 (Contd.)

Main subject	Subsidiary subject	Time	
		Hours spent on it	Relative share of total training time
3) Fish marketing: management and accounting tools and techniques	— organisation and management of fisheries planning/policies (3.1) :		
	* organisational and management objectives in Indian fisheries (3.1 .1)	1	
	* case study : methods and results of organisation and management of fisheries policies/planning in “Marokko” (3.1.2)	1½	
	* management information and performance criteria (3.1.3)	3	
	— accounting (3.2) :		
	* accounting I : functions of trading organisations and accounting, working capital, purchases, sales, profit and loss account (3.2.1)	2	
	* accounting II : sources and employment of cash, balance sheet, product costs (3.2.2)	1	
	— marketing research (3.3)	29	
	— price and price policies (3.4)	2	
	— processing cost (3.5)	1	
	(theoretical part)	14	19%
	— business game (3.6) :		
	* introduction, setting up period (3.6.1)	2	
	* period I (3.6.2)	8	
	* period II (3.6.3)	6	
	* period III (3.6.4)	5½	
	* period IV (3.6.5)	3	
	* final discussion (3.6.6)	2	
	(practical part)	26½	37%
	—	40½	56%
4) Fish handling	— quality control (4.1)	½	
	— fish handling and distribution (4.2)	2	
	— equipment and facilities for fish marketing (4.3)	3	
5) Opening session/ registration/ introduction		5½	8%
		3	4%
6) Closing session/ issue of certificates/ summary		3	4%
Total working hours of the training course		71	99%

Note: (1) In this table only the actual working hours are mentioned. All kinds of breaks are excluded.

(2) The figures have been approximated to the nearest whole number. That is why the total percentage is only 99% and not 100%.

The table shows that a good part of the training course — more than half of the time — was devoted to marketing management and accounting tools and techniques. In order to develop systematic knowledge as well as practical skills and abilities. The latter was imparted with the help of a business game which alone took up slightly more than one-third of the total time of the training course.

Also, the characteristics of fish marketing in Andhra Pradesh, as also the organisational structure and infrastructure, were taken into account in a quantitatively sufficient manner: more than one-fourth of the total training time was spent on it. Finally, a considerable share of the time (8 per cent) was devoted to technological aspects of fish marketing -fish handling and marketing facilities.

3. ABOUT THE PARTICIPANTS

3.1 Age and duty station

Twenty participants, all males, took part in the training course. Their average age was 32. More than half of them (12) were bachelors. Seven of them were APFC trainees and had not been allotted permanent duty stations yet. The other 13 came from various centres. Six came from inland cities like Hyderabad, Secunderabad and Nizamabad and seven from coastal towns like Kakinada, Vijayawada, Nellore, Visakhapatnam, Eluru and Chirala, situated all along the Andhra Pradesh coastline. Thus all major APFC activity centres were represented in the course.

3.2 Education

The level of education of the participants can be described as very high. Fourteen held masters' degrees, nine of them in business administration. Others were masters' degree holders in marine sciences, marine biology, fisheries science, food technology, etc. The rest of the students held a bachelor's degree or a diploma, three of them in fisheries science, engineering, etc., two in economics. Only one participant did not hold a university degree.

As for the training course subjects, most participants — particularly the seven APFC trainees — had already had a high level of specialized education.

3.3 Job titles, professional experiences and prior opinions

Job titles: The participants came from two institutions: the Directorate of Fisheries and the Andhra Pradesh Fisheries Corporation. Their titles are listed below:

Table 2
Job titles of participants

Directorate of Fisheries	No. of Participants		APFC
Economic Investigator	1	1	Deputy General Manager
Asst. Director of Fisheries	1	2	Senior Marketing Officer
Marketing Officer	1	4	Marketing Officer
Inspector of Fisheries	2	1	Asst. Marketing Officer
		7	Trainee Marketing Officer
	5	15	
	20		

As the table shows, the training course participants represented different ranks of the hierarchy, from the medium to the high level. Nearly all of them were connected with marketing.

Professional experiences: Out of 20 participants, 11 had already had practical experience in fish marketing. Their earlier work had related to setting up procurement centres and fish sale booths, organising transport of fish, organising fishermen's cooperative societies, looking after sales organisations, coordinating and supervising marketing units, dry fish processing, etc.

This experience was derived from one or more of the following ways :

- upbringing in a fishing village
- experience in marketing freshwater fish
- work in fish culture
- participation in a survey of fish marketing
- project work on inland marketing of fish and prawns.

Five had no practical experience in fish marketing at all.

The professional experiences of the 20 participants varying greatly, there was no indication that the future work would be similar for all of the participants.

Prior opinions and expectations: Asked which skills or knowledge related to fish marketing services they hoped to obtain from the training course, the participants cited a wide range of subjects, as follows :

— local marketing organisations	fresh fish procurement and sale by APFC; selection of sites for new procurement centres.
— bettering nutrition	improving nutrition with the help of fish products.
— socio-economic aspects of marketing	preparation of integrated fisheries projects; improvement of living conditions of fishermen; managing a fair price for both fishermen and consumers; price policies in fish marketing.
— hygienic aspects	techniques of hygienic marketing of fish.
— promotion aspects	popularisation of fish, specially in rural areas.
— fish handling/marketing facilities	handling transport, packing methods, dry fish processing, storage.
— fish technology	adequacy of fishing craft and gear, freshwater and brackishwater aquaculture; type of fish available in A. P. waters.
— general knowledge of marketing tools and techniques	organisational management, dealing with competitors in the market, techniques of decision-making, maximisation of returns, minimisation of costs, etc.
— market research	consumer demands for fish.

The participants' answers and their expectations show that the decision of the training course to cover a wide range of subjects was justified. They wanted even a wider range of issues-such as fishing technology (including boats and gear), processing, nutritional aspects, and stock assessment-to be covered. Future courses may usefully include some inputs about regional processing methods and nutritional aspects of fish marketing. But subjects like fishing craft and gear and stock assessment require a much longer course, and they are not essential for a fish marketing course.

4. CONDUCT OF TRAINING COURSE

4.1 Information about fisheries and fish marketing in A.P.

The information provided by the training course on fisheries and fish marketing in Andhra Pradesh can be classified thus :

- sociological, economic and technical aspects of fisheries
- fish marketing in Andhra Pradesh, with special reference to a corporate marketing organisation (APFC).

Both categories were covered by Mr. K. B. Rao, Secretary for Fisheries, in his inaugural speech on “Development of fish marketing in India — problems and prospects.” Mr. Rao emphasised the importance of fisheries as a source of jobs and incomes for some one million fishermen living in about 2000 Indian villages, and the role of fisheries as a protein supplier and foreign exchange earner.

About the functions of the corporation-type marketing organisation (APFC), Mr. Rao said that the APFC should try to improve the incomes of fishermen, help create jobs in the fisheries sector, provide food for lower income groups, especially in rural areas, and reduce the role of middlemen and moneylenders in marketing.

A lecture by Director of Fisheries S. Banerjee on “Resources and utilisation of fish in Andhra Pradesh” outlined geographic, climatic and biological factors of marine and inland fisheries in Andhra Pradesh. Introduction of motorised fishing vessels and trawlers and the construction of fishing harbours were reviewed. Processing and preservation facilities were described, as also communications and marketing channels. The importance of the APFC, which tried to improve the living conditions of fishermen, was stressed. Mr. Banerjee presented a summary of the assets and activities of the APFC — such as boat-building, prawn freezing, maintaining ice and cold storage plants, and trawlers. An ambitious project proposal, which envisages procurement of fish at 80 centres and its distribution from 78 urban centres, is under the Government of India’s consideration.

While the introductory lecture served as a general overview of the problems, the lecture on fisheries in Andhra Pradesh dealt with such aspects as resources, fishing craft and gear, processing, marketing, training, infrastructure, etc., in detail. However, it related almost entirely to the present status and future plans of mechanised fisheries; and did not deal with small-scale fisheries. Only the development of a motorized beachlanding craft by the BOBP was cited in the context of small-scale fisheries.

Another lecture that analysed the marketing side (“Current fish marketing problems”) covered aspects of small-scale fisheries. This lecture laid its main emphasis on the problems confronting APFC. Later on too, the APFC’s marketing strategy to overcome these problems was highlighted. An additional lecture about the APFC accounting system explained the organisational structure and accounting methods of APFC.

The training course’s “regional discussion” ended with two detailed lectures on the socio-economic conditions of small-scale fishermen. These covered a whole gamut of subjects: the rate of literacy among fisherfolk, their occupational distribution, housing, sanitary conditions, infrastructure, social structure, consumption patterns, income and expenditure levels, size of families, magnitude of debt burden, assets of fishermen, role of institutional agencies in financing fishermen, reasons for their failure, marketing margins, craft and gear used, role of cooperatives, etc.

4.2 Information concerning marketing and accounting — before and during business game

This information, which was useful for the business game, covered nearly one-fifth of the total time spent on the course. This information can be categorized thus: (a) organisation and management of fisheries planning policies (b) accounting (c) market research (d) pricing and price policies (e) processing costs.

The lectures were supposed to deliver the necessary marketing management and accounting knowledge. Their relationship with the business game was dual. They contributed the initial knowledge necessary for participants to play the business game — accounting I and II, organisational and management objectives I and II. Other information was meant to follow up on the experiences and skills gained in the business game and underscore the relationship between different elements (such as pricing, market research, processing costs).

The two lectures on organisation and management of fisheries planning/policies were meant to demonstrate the importance of objectives for planning and to show how objectives can be transferred into practice. For this purpose one formal lecture was arranged and one case study was presented. One more lecture was delivered on the same subject to generalise the experiences acquired during the business game.

4.3 Simulating practice: the business game

4.3.1 *Structure of business game*

For the conduct of the business game the participants of the training course were divided into four teams of identical size and status- to represent four marketing corporations competing with each other. Among other things the teams were expected to improve the finances of the corporations, then in a bad shape, through executive decisions on the purchase, storage, processing, transport and sale of fish and prawns.

For orientation about the business game, participants were given manuals ('Participants' Manual') that supplied data on the assets and liabilities of their corporation, its financial status (indicated by a profit and loss statement and a balance sheet), its labour force, the capacities of various plants run by the corporation (ice making, fish drying, fish freezing, cold storage), its fleet of vehicles and boxes for the transport of fish. The amount of fish the corporation could use in the game (one part of it was secured by contract, the other part could be bought in auction), the species of fish (restricted in the game to two, ground fish and shell fish), and the prices of fish purchased by contract were also indicated. Furthermore, the manual contained geographic and market information from which the participants could learn something about the present exploitation of the existing markets, their saturation, the advantages and constraints of the opening of new markets, etc.

The game spread over four periods. Each period started with the purchase of new fish and ended with its sale, storage or wastage. During each period of the business game each team had to make the same type of decisions while the conditions under which they had to decide changed from period to period. Prior to the start of the game, the teams had to decide on the objectives of their corporation. They were allowed to choose as many objectives as they liked among the following :

- profit maximisation
- cost minimisation
- maximising market share
- providing food for lower income groups
- providing employment.

The teams had been told that discussions on the attainment of objectives would take place at the end of the game in order to ascertain the degree of success of each corporation. Another decision to be made prior to the start of the business game -during the so called "setting up period" of the game- was to decide on whether or not an inland city and/or a rural wholesale market with cold storage facilities should be opened. That question was an important indicator of the team's ("corporation's") marketing strategy and had also be closely related with the objectives of the team. To make a decision on new markets, marketing forecasts had to be studied. Data on transportation links, on distances from the coast, on other competing markets (meat), and on the composition and incomes of the population had to be analysed. Another decision that had to be made before the game started concerned loans to be obtained as well as vehicles and boxes to be purchased.

During each period of the game, every team had to decide on the following questions :

- How much fish should be bought at the auction ? The team had to give its answer by filling form 1 -the Fish Availability Report.
- How many new personnel, skilled and unskilled, should the corporation recruit? How many should it retrench ? The team had to deal with form 2 -the Personnel Report.
- How should the fish be distributed, bearing in mind the number of vehicles and ice boxes available, the capacity of each vehicle, and mandatory requirements on ice-fish ratio for the transportation of fresh fish? The distribution report had to be used.
- What would be the marketing strategy for this period? Which were the best sales outlets? The Marketing Report had to be filled in.

At the conclusion of each period, the “chairman” or leader of each team summarized the marketing activities of his team, trying to judge how far its objectives could be achieved. This self-evaluation was then critically assessed by the members of the other teams.

4.3.2 Initial marketing strategies

- Choice of management objectives :

Initially the four teams chose the following objectives :

Table 3
Objectives of the corporations

Objectives	I	II	III	IV
Maximise profit			X	
Minimise cost	X	X	X	
Maximise market share		X	X	X
Provide food for lower income groups	X	X	X	
Provide employment	X	X	X	
Ensure survival	X			
Earn foreign exchange		X		
Redistribute incomes		X		
Contribute to regional development		X		
Improve quality of fish		X		
Increase gross national product		X		

The table shows nearly all teams agreeing about the need for providing food for lower income groups, for providing employment, for minimising cost and maximising marketing share. Maximisation of profit was mentioned by only one team. The choice of just one objective by team IV was due to a misunderstanding.

The teams had to decide on initial marketing strategies according to their objectives. Before doing this they had to analyse the status of the corporation they took over from the previous management. The financial situation was indicated by the corporation's profit and loss statements and the balance sheet. The team had to learn from these documents about the failures of the previous management and develop an adequate strategy to correct these failures.

From the statement of the current physical and financial status of the company, some details could be picked up about the reasons for the bad condition of the corporation. It was obvious that the capacities of the plants (ice making plant, freezing plant, drying -salting plant) had not been used sufficiently. So the overheads, being fixed costs, had been relatively too high. In addition to this the freezing plant employed too many personnel.

Furthermore there was a considerable waste of fish. Regarding prices, the price for dried and salted fish was far too low to cover the costs, the fixed costs being rather high.

A solution that would avoid dismissing personnel and lower the share of the fixed costs and the capacities of the plants was to develop new markets and increase the production. In order to do this **it** was necessary to spend more money on sales promotibn. This was the main thing to **be** learnt by the participants.

Of the four teams, three decided to open additional inland city and rural wholesale markets with cold storage facilities. Only one corporation (III) restricted its activities to the coastal city and did **not** learn from the failures of the previous management. The other three had to decide about **the** siting of their new markets, taking into account the relative advantages and disadvantages of the different sites in the context of such factors as road and rail connections to the coastal city, and competing markets (for example for meat), density of population, average income, sales potential as well as preferences for different types of fish products in the new site.

— Selection of sites :

Participants were given data indicating income groups, preferences for different types of fish products, and demand forecasts at the various sites that could be chosen as additional fish markets. After analysing the data the three teams chose the following sites :

Table 4
Sites chosen for additional markets

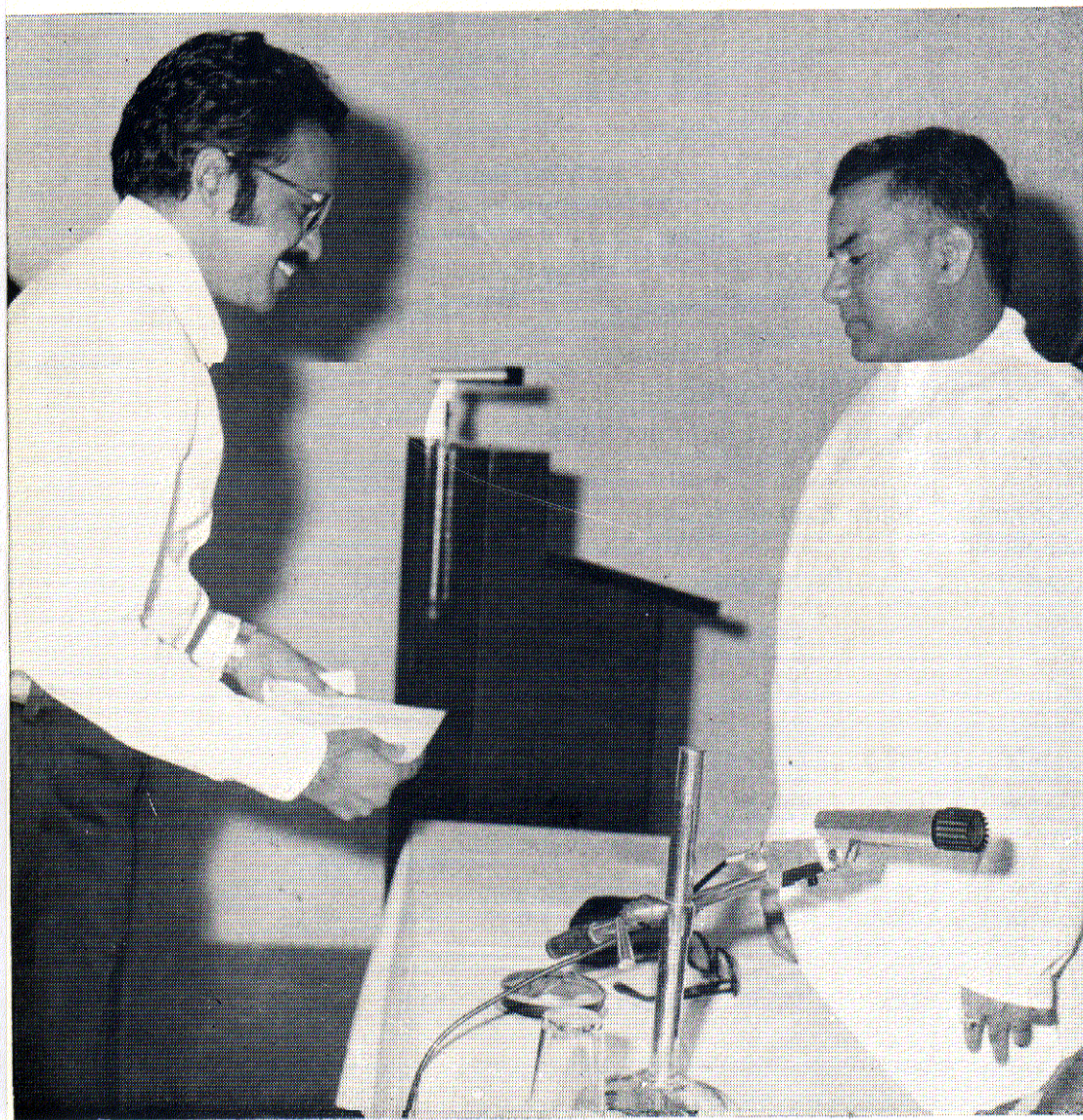
Site			Team I	Team II	Team IV
City site	3	3	3
Rural site	E	E	C

It is worth noting that all the three teams chose sites that were really in need of fish — not just sites with high sales potential. The city site 3 chosen by three teams was actually the one with the lowest sales potential in the context of prevailing prices. This can be seen from the sales potential table below. (The sales potential is calculated by multiplying the average income per period by the number of people belonging to a certain income group.) However, the amount of fish to be sold at the various city sites was the same.

Table 5
Sales potential of fish at different sites

Income group	Average income per period (Rs.)	Fish sales potential within 2 km of city sites			Fish sales potential within 5 km of rural sites		
		(Rs. in lakhs)			(Rs. in lakhs)		
		Site			Site		
		1	2	3	C	D	E
A	3500	192.5	175	148.75	10.5	8.4	14
B	1200	122.4	122.4	127.2	24	20.4	23.4
C	450	58.5	63	65.7	27	27.9	25.2
D	150	12.6	19.5	21	7.5	7.8	8.25
Total sales potential of sites (Rs. in lakhs)		386	379.9	362.65	69.0	64.5	70.85

Fish Marketing Training Course at Hyderabad: Some Glimpses



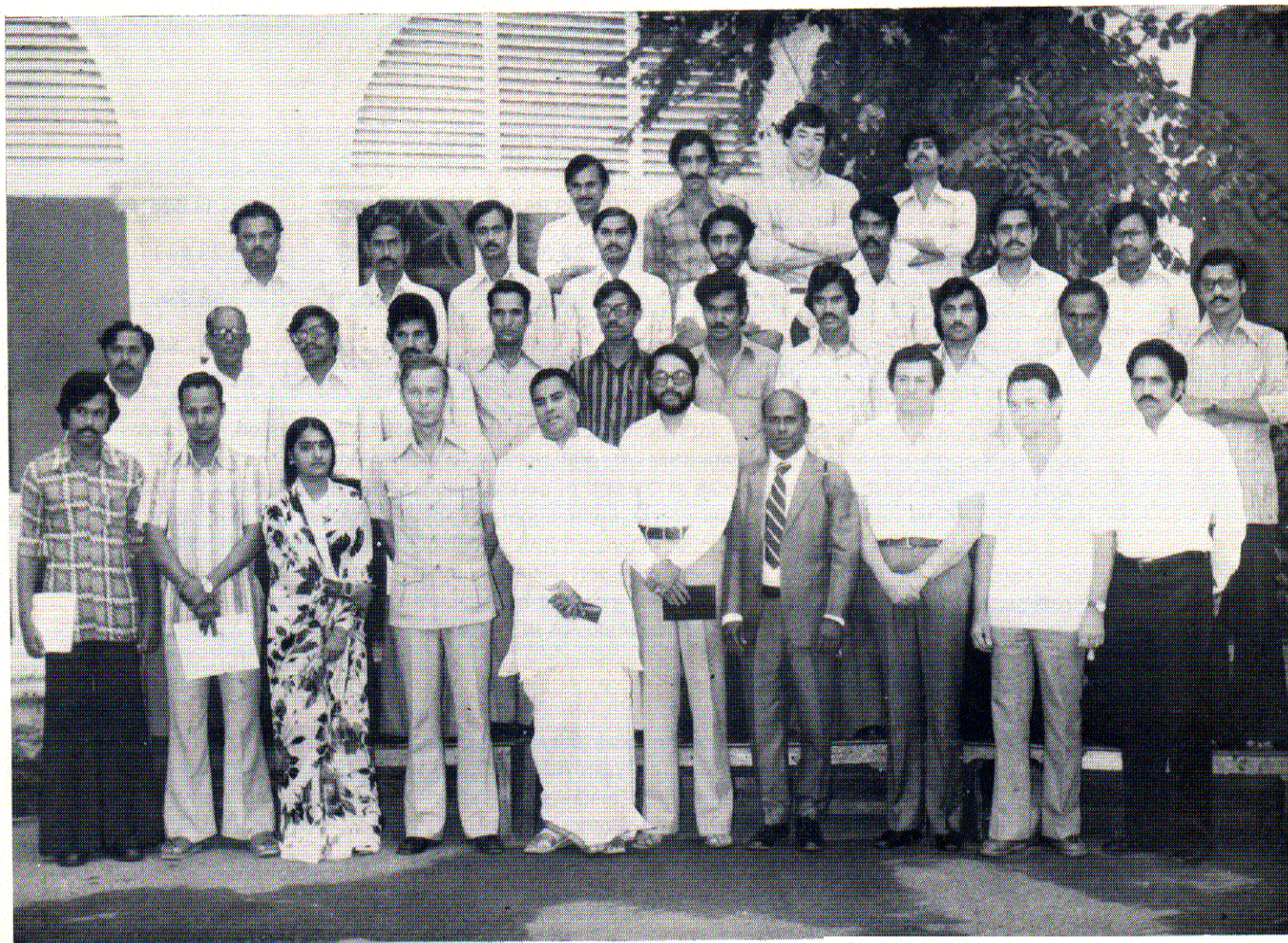
Top left: Director of Fisheries S. Banerjee speaks at the certificate distribution ceremony.

Top right: Minister N. Bhaskar Rao, BOBP director Lars Engvall and Ron Nicholson of White Fish Authority in conclave. At left is S. Banerjee.

Left: Participant K. R. W. Yesudas (Deputy General Manager, Andhra Pradesh Fisheries Corporation, Hyderabad). receives his certificate from Mr. N. Bhaskar Rao, Andhra Pradesh Minister for Small- Scale Industries and Fisheries.

Right: Dinner hosted by BOBP at the Administrative Staff College of India, Hyderabad, where the course was conducted.

Below: Course participants with organisers. In the front row are seen BOBP director Lars Engvall (fourth from left), Minister Bhaskar Rao, Director of Fisheries S. Banerjee, BOBP staffer M. T. Nathan. White Fish Authority's Ron Nicholson, H. Lisac of FAO Rome and K. R. W. Yesudas.



Further, there was a social and economic need for a better supply of fish at site 3 because it was situated near the industrial heart of the city — where the majority of the city residents worked and where there was no other supply source of animal protein such as the meat market at site 2. The rent for this market was reasonable too. Similar criteria apply to the rural site E situated far from the coast with unsatisfactory (partly bad) road connections. By extending their activities to the inland cities and the rural towns, the corporations could serve all objectives they chose -such as minimizing cost by better use of their total capacities, maximising market share by opening new markets, providing food for lower income groups by selling fish in the countryside, and providing jobs by establishing new wholesale markets, cold storage and transport facilities etc.

4.3.3 Period-wise progress in marketing strategy and learning

The teams' progress in marketing and in learning was evaluated using the following criteria :

- “development of the labour force” to gauge success in the objective of greater employment
- “sales and prices” at the various **sites** to determine how the objective of providing food for lower-income groups could be achieved, bearing in mind the quantities that could be sold at the various sites.
- “net profit” to determine whether the teams were able to control their revenue-whether they attained their goals of “survival” or “profit maximisation”.

Development of net profit: The following table shows the development of net profit of the four corporations through the four periods of the business game:

Table 6
Development of net profit (loss) in Rs.

Period of Business Game	NET PROFIT			
	Team I	Team II	Team III	Team IV
1	(4,49,930)	(18,98,848)	(653,428)	(18,39,520)
2	3,46,469	1,22,219	9,44,387	3,23,449
3	3,53,560	3,59,728	(1,82,077)	59,356
4	2,40,909		(754,171)	2,88,398

The table shows that after running into heavy losses at the end of the first period, **the** teams managed on the whole to consolidate their corporations and to achieve at least the objective of “survival”. The reasons for the losses at the end of period I were similar to the reasons for the bad shape of the company under the previous management: insufficient use of the capacities and low promotion effort. Despite their extension into additional markets all teams had been very careful in purchasing fish and spent only very little money on promotion so that the fixed costs such as administrative overheads, rents, etc., had become too high compared to the income from sales. However, wastage did not occur except in one case.

Sales, prices and promotion expenditure

The following table gives the results of the sales, prices and promotion policy of the four teams. It shows for example whether the teams really provided cheaper fish to rural people with lower income and whether they managed to tap the markets' full capacity. The table also shows how the quantities sold depended on prices and promotion expenditure and on competition among the teams.

Results of sales, prices and promotion strategy of the four teams

Results of sales, prices and promotion strategy of the year 2000																									
Period	Markets	Team I						Team II						Team III						Team IV					
		Promotion expenditure for fresh fish in thousands of Rs.	Fresh fish sales in tons	Price	Promotion expenditure for dried & salted fish in thousands of Rs.	Dried/salted fish sales in tons	Price	Promotion expenditure for fresh fish in thousands of Rs.	Fresh fish sales in tons	Price	Promotion expenditure for dried & salted fish in thousands of Rs.	Dried/salted fish sales in tons	Price	Promotion expenditure for fresh fish in thousands of Rs.	Fresh fish sales in tons	Price	Promotion expenditure for dried & salted fish in thousands of Rs.	Dried/salted fish sales in tons	Price	Promotion expenditure for fresh fish in thousands of Rs.	Fresh fish sales in tons	Price	Promotion expenditure for dried & salted fish in thousands of Rs.	Dried/salted fish sales in tons	Price
Period I	Coastal city	8.7	195	6.61	—	5.7	9.8	—	50	8.50	—	5.7	9.55	7.7	170	10.0	1.4	9.0	8.0	—	50	10.0	—	8.4	8.75
	Inland city	20.4	200	8.05	—	12.0	9.93	7.3	155	9.50	1.0	12.9	11.35	—	—	—	—	—	—	2.5	60	10.0	7.5	23.1	8.75
	Rural town	3	25	8.13	—	9.0	9.95	1.3	13.5	9.0	2.6	19.8	11.35	1.5	12.5	10.0	1.6	17.4	8.0	2.5	14.5	9.75	2.5	18	8.5
	Export	Prawn sales =19.5 tons			Price =Rs. 56.55			Prawn sales =4 tons			Price =Rs. 55			Prawn sales =40 tons			Price =Rs. 55			Prawn sales =40 tons			Price =Rs. 55		
Period II	Coastal city	16	175	9.0	17.5	52.8	16.3	13.6	175.2	10.0	3.8	18	10	17.5	343.2	10.0	2	13.6	8.0	16	240	9.95	1.5	17.5	9.44
	Inland city	17	151.6	10.75	13.8	20.4	10.5	14.4	200	10.10	3	10.8	12.3	17.5	20	10.0	5	5.4	8.0	7.5	75	9.95	10.0	36.9	9.45
	Rural town	17.5	15	9.85	12.4	31	10.6	9.8	49.8	9	7.6	19.2	10.5	17.5	80	10.0	3	21.6	8.0	7.5	30.5	10.0	10.0	30.0	9.75
	Export	Prawn sales =55 tons			Price =Rs. 58			Prawn sales =55.5 tons			Price =Rs. 55.5			Prawn sales =50 tons			Price =Rs. 55			Prawn sales =57 tons			Price =Rs. 54.79		
Period III	Coastal city	17.5	356.4	9.0	—	—	—	17.5	225	10.25	17.5	26.2	11.0	17.5	356.4	10.5	2	5.8	5.5	16.5	175	10.44	1.0	5.2	10.0
	Inland city	10	150	11.5	5	12.4	11.0	17.5	197.5	10.75	17.5	24.4	11.95	5.0	79.0	10.5	0.8	10.4	8.5	7.5	75	10.44	7.5	15.2	10.0
	Rural town	5	28.5	11	—	—	—	17.5	51.2	10.1	17.5	30	11.2	5	28.8	10.5	2	20	8.5	6.0	15	10.14	9.0	30.0	9.75
	Export	Prawn sales =52 tons			Price =Rs. 60			Prawn sales =62.7 tons			Price =Rs. 54.1			Prawn sales =50 tons			Price =Rs. 55			Prawn sales =60.5 tons			Price =Rs. 54.99		
Period IV	Coastal city	17.5	227	10.5	12	28.3	12.5	?	?	?	?	?	?	17.5	300	11	1.06	7.8	9.5	13.0	175	10.90	4.5	14.4	10.44
	Inland city	16	120	12	6	19.2	12.4	?	?	?	?	?	?	17.5	20	11	1	5	9.5	9.5	75	10.99	8.0	14.5	10.44
	Rural town	6	31.2	11.6	5	22	12.2	?	?	?	?	?	?	17.5	18.3	10.5	1	6.1	9	8.0	15	10.24	9.5	30	9.94
	Export	Prawn sales =77.5 tons			Price =Rs. 60			Prawn sales =51.5 tons			Price =Rs. 60			Prawn sales =58 tons			Price =Rs. 60								

Regarding the prices offered to lower-income groups in rural areas and higher-income groups in cities, there was only a slight difference; this was to the advantage of the population living in the coastal city. On the whole, the price level- including a general upward tendency- was similar in the various markets. So fish was not offered at lower prices to lower-income groups in rural areas. However, customers in rural areas at least did not have to pay the higher transport costs. These had been more or less equally distributed over all markets.

Concerning the amount of fish supplied to the various markets, bearing in mind the average capacities of the markets, it must be noted that the capacity of the coastal city market has been well utilized while the capacities of the rural town as well as of the inland city have not been so well utilized.

Table 8
Market capacity used by the corporations

	Coastal city fresh fish	Coastal city dried and salted fish	Inland city fresh fish	Inland city dried and salted fish	Rural town fresh fish	Rural town dried and salted fish
Capacity used	1.07%	1.23%	0.42%	0.55%	0.58%	0.47%

The table shows that the objective to supply areas distant from the coast with fish was only partly achieved, because of difficulties in organising transport and storage. Evaluating the attainment of these objectives, it has to be taken into account that the figures have been put in relation to the maximum capacity and not the average capacity of the different markets.

Regarding the amount of fish that could be sold at the various markets, the amount depended to a large extent on the promotion expenditure, as the table shows. The teams learned from period to period to increase their promotion expenditures.

Development of labour force: The following table shows the development of the labour force of the four teams throughout the business game.

Table 9
Development of labour force

Period	Labour	Team I	Team II	Team III	Team IV
Period 0	s	30	30	30	30
	u	100	100	100	100
	t	130	130	130	130
Period I	s	62	50	32	43
	u	113	81	100	100
	t	175	131	132	143
Period II	s	50	49	20	42
	u	48	45	50	100
	t	98	94	70	142
Period III	s	48	45	39	42
	u	40	52	100	100
	t	88	97	139	142
Period IV	s	51	?	33	42
	u	52	?	77	100
	t	103	?	110	142

s: skilled labour
u: unskilled labour
t: total

As the table shows, only one team increased its labour force. So the objective Of providing employment could not be achieved. Three teams reduced their labour force, thereby cutting costs.

4.3.4 Results

Summarizing the results of the business game, one may assert that the participants developed their skills concerning accounting ; planning and organisation of procurement ; processing ; distribution and sale of fish and prawns. This is proved by the progressive improvement in the financial position of the corporations, and the fewer and fewer mistakes committed by participants in filling up various forms during each period of the business game. The business game turned out to be an adequate method of developing accounting and marketing skills. This positive outcome is also a result of the information input provided at the course before and after the business game, as stated in Chapter 4.2.

How far could the business game improve marketing management abilities? How well did it teach participants how to put into practice the general objectives of the corporations — such as providing nutrition for lower-income groups, increasing employment, minimising cost, maximising market share, paying higher prices to the fishermen — as mentioned by representatives of corporations and the fisheries department throughout the course ? That all of these objectives could not be achieved at the same time, had been proved by the gradual change in quantities of fish sold at the different markets, prices and labour force. The achievement of all objectives was also not possible because some of them conflicted with each other. In the beginning of the business game, participants rationalised the non-achievement of all these objectives with the argument that they would first try to improve their financial objectives and that later on, little by little they could also meet their social objectives. But practice proved that this was not the case. (Course participants have agreed with this assessment.)

The problems the teams had in attaining their objectives were the result of objective factors. If a corporation competes with a private trader, it will not be able to simultaneously offer higher prices to fishermen and lower prices to consumers -which is the only way it can at once provide more employment than private traders and also supply fish to the poor. This is economically not possible unless at least at an initial stage the corporations get outside support-such as government funds. Such support has to be noted in the business game. If there is no such support, the conflicts among the objectives have to be resolved before the game starts, and a new list of objectives has to be set. Leaving the clearing of the objectives to the participants adds to their burden throughout the game and makes problem-solving very difficult. The business game will then have a negative effect on the process of learning — on how to convert theoretical objectives into practical management decisions. It could convey — perhaps at an unconscious level-the pernicious impression that objectives are not relevant at all, and that their only function is to window-dress what takes place in practice. Such effect is of course totally unintended.

This negative result at Hyderabad was also due to the shortcomings of the information input on Andhra Pradesh fisheries — it should be more problem-oriented next time.

On the whole it is desirable next time to make it clear — before the start of the business game — that the game is only a commercial exercise and cannot guarantee the achievement of all the social objectives. For this a clear strategy must be outlined -which describes the necessary funds, sales plan, infrastructural facilities and so on.

Another question to be examined is how far the business game at the course really reflected Indian marketing conditions. During the game the extension of the business activities to the countryside was found to be economically necessary to use the full capacities of the corporations. It contributed also to minimising the cost and maximising the profits of the corporations. There was a financially backed demand for fish in the countryside which could not only be exploited by adequate promotion effort. On the whole it was profitable to extend marketing activities to the countryside.

In real life too, opening up new markets in inland towns may be a good way of improving the financial performance of fish marketing corporations in India -which is at present unsatisfactory

because of high overheads, low sales and insufficient planning and coordination of operations. These maladies can only be overcome by a better use of capacity, opening up of new markets, more promotion, higher turnover, etc. This in turn may only be possible by tapping the potential of inland towns.

The business game should be supplemented by inputs on specific local fish marketing problems at every stage.

4.4 Additional information inputs about fish handling

Two lectures and a taped slide on quality control were devoted to fish handling. All of them were systematic and practical, and at the same time evoked vivid interest among the participants. The following aspects of fish handling were dealt with.

(a) *Handling and distribution:* Composition of fish as food, fish spoilage pattern, delaying spoilage, sanitation and hygiene, packing, icing — CSW — RSW — re-icing, chill storage, handling during transport, handling in retail outlets, handling on board, handling at landing places, storage of frozen fish, transport of frozen fish, retailing frozen fish, quality control.

(b) *Equipment and facilities:* Single equipment items like fish boxes, ice plant, ice store, CSW-tank, chill room, refrigerated cabinets and containers, insulated cabinets and containers, road vehicles, balances, in-plant transportation, fence, floors, walls and drainage, changing rooms, toilets, office space and equipment, general store, water supply installations, fuel supply installations, power supply installations, communication devices, composed facilities on board and at landing places, collection points, inland depots, wholesale markets, public market stalls, retail fish shop, transport facilities.

Lecture notes were distributed at the beginning of the lectures. The actual lectures were illustrated with overhead project text.

4.5 Application of knowledge acquired during business game to local conditions

A feasibility study of fisheries development projects in Andhra Pradesh conducted a few years ago suggested many detailed improvements to fish marketing in Andhra Pradesh. This report is under the Government of India's consideration.

Participants in the training course were asked to develop a fish marketing strategy for Andhra Pradesh on the basis of this feasibility study. The participants were organised into five working groups for this exercise. As the tasks of these groups were defined somewhat inaccurately, and their background material was too elaborate, the outcome of this exercise was rather ineffective. Only some general improvements to fish marketing, such as more hygienic fish stalls, were worked out by the participants.

5. PARTICIPANTS' APPRECIATION OF THE TRAINING COURSE

5.1 Usefulness of topics

The participants considered the following topics to be most useful to them in their work :

Table 10
Rating of course topics

Topic	Order of usefulness	No. of participants who considered the topic to be most useful (total no. of participants)
Fish business game	1	18
Pricing and price policies	2	13
Marketing strategies	-	10
Round table discussion	3	10
Accounting	3	10
Marketing research	4	9
Marketing research requirements	5	8
Management information and performance criteria	6	6

The table shows clearly the high esteem of the business game and the low esteem of the marketing research requirements and management information and performance criteria lectures. While the business game, when compared to other exercises during the courses, actively involved the participants and dealt with concrete though simulated facts, the lectures on market research requirements and management information and performance criteria were neither practical, nor systematic and theoretical, and did not offer enough scope for active participation.

5.2 Adequacy of teaching methods

The following table shows the participants' appreciation of the teaching methods utilised in the course.

Table 11
Participants' appreciation of teaching methods

	Prefer less	Correct	Prefer more
Business Game	—	9	11
Lectures	5	10	3
Discussions	—	12	4
Films	2	5	11

This table indicates again the high appreciation of the business game. Concerning the balance between different teaching methods, the table indicates that the course included too many lectures and not enough discussion. Nevertheless, the lectures were considered good and adequate by themselves.

Table 12
Quality of lectures

Quality	No. of participants
Good	11
Adequate	8
Poor	1

The course participants would have liked to view more films during the course; however, these may have benefited only the trainees, the newcomers to fisheries; the utility of the films for other participants would have been limited.

5.3 Organisational framework

The participants' evaluation of the arrangements for the training course was very positive.

Table 13
Arrangements and organisation

Adequacy	No. of participants
Very good	14
Adequate	6
Inadequate	—

This finding reflects on the organisation of the course by the BOBP course coordinator and the good lodging and leisure time activities offered by the Administrative Staff College. The duration of the course, the number of participants and the contacts with training course staff members were considered nearly by all participants (questions 17, 18, 19) to be adequate. The high appreciation of the training course was also expressed by the fact that 15 out of 20 students felt that they benefited very much from the course.

6. CONCLUSIONS

Reviewing the entire marketing training course, it must be stated that the variety of subjects dealt with during the course proved to be necessary because of the heterogeneity of the participants and the interdependence of these subjects.

The course's educational structure, the business game and some of the topics covered -such as "initial information about marketing management and accounting" – may be commended for future courses too. As for the achievement of objectives, it must be stated that accounting skills were sharpened, and knowledge on the planning and organisation of marketing operations was upgraded. The participants also gained new insights into local fisheries problems.

However, there were problems in inculcating attitudes that could support local development objectives, e.g. -in developing understanding of these objectives and in applying marketing management knowledge and skills to local fish marketing conditions. In future, the objectives of local marketing organisations may be discussed and clarified by the organisers before the course, and any conflict in these objectives may be resolved, so that the business game is based on objectives that are achievable. This is an essential pedagogical condition. The achievement of the objectives at the level of attitudes, and thereby the application of the knowledge to local conditions, could also be improved by delivering the initial lectures on prospects of local fisheries in a more problem-oriented way.

These initial lectures, which state the objectives for future development, should be discussed by the participants, so that different opinions can be put forward, and practical experiences can be referred to; this is a necessary condition for changing or developing attitudes.

Another useful modification would be to integrate some aspects of the last issue of the course – a simulated fish marketing project implementation-into the business game, and into the initial lectures about local fisheries conditions.

Appendix 7

Training Course for Fish Marketing Personnel of Andhra Pradesh

LIST OF PARTICIPANTS

Name	Designation and Official address
Mr. K. R. W. Yesudas	Deputy General Manager (Marketing) Andhra Pradesh Fisheries Corporation Hyderabad
Mr. S. Syam Sunder	Senior Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. B. John Samuel	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. P. Umamaheswar Rao	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. Hanumanth Rao	Marketing Officer Andhra Pradesh Fisheries Corporation Vijayawada
Mr. N. Badarinarayana	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. B. Pratap Reddy	Marketing Officer Andhra Pradesh Fisheries Corporation Nellore
Mr. K. Yenku Naidu	Assistant Marketing Officer Andhra Pradesh Fisheries Corporation Visakhapatnam
Mr. T. Suryanarayana	Marketing Officer Andhra Pradesh Fisheries Corporation Chirala
Mr. Krishna Kumar	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. G. Kashinath	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. D. V. S. K. Rao	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad
Mr. T. Malkaiah	Trainee Marketing Officer Andhra Pradesh Fisheries Corporation Hyderabad

Name	Designation and Official address
Mr. Ch. Rama Rao	Marketing Officer Andhra Pradesh Fisheries Corporation Eluru
Mr. B. N. Reddy	Senior Marketing Officer Andhra Pradesh Fisheries Corporation Vijayawada
Mr. S. L. Giridhar	inspector of Fisheries c/o Director of Fisheries Hyderabad
Mr. M. A. Quadeer	Inspector of Fisheries Nizamabad Dist
Mr. K. Laxman	Assistant Director (Tech.) Fisheries Training Institute Kakinada
Mr. G. Prasada Rao	Marketing Officer
Mr. A. R. K. Gupta	Economic Investigator
<i>Consultants and Lecturers:</i>	
Dr. V. Abraham	Professor of Applied Economics Andhra University Waltair
Mr. K. H. Haywood	Chief, Management and Services Industrial Development Unit White Fish Authority United Kingdom
Mr. S. R. Reddy	Professor Andhra University Waltair
Mr. P. Veedam	General Manager Andhra Pradesh Fisheries Corporation Waltair
Dr. U. K. Srivastava	Professor Indian Institute of Management Ahmedabad
Mr. S. V. Rajeshwar	Administrative Staff College of India Hyderabad
Mr. H. Lisac	Fishery Industries Division FAO, Rome
Mr. R. Nicholson	Management Accountant White Fish Authority United Kingdom
Mr. Reddy	Deputy General Manager Andhra Pradesh Fisheries Corporation

Name	Designation and Official address
Mr. A. Nordheim	FAO, Rome
Dr. M. Sakthivel	Joint Director The Marine Products Export Development Authority Ministry of Commerce Government of India
<i>Bay of Bengal Programme:</i>	
Mr. M. T. Nathan	Fish Utilisation and Distribution Specialist
Dr. U. Tietze	Socio-Economist.

Appendix 2

Training Course for Fish Marketing Personnel of Andhra Pradesh

PROGRAMME

Date	Time	Details
11-11-80	09.00 - 11.00	Registration and introduction of participants
	11.30 - 12.30	Development of fish marketing in India, problems and prospects Lecture by Mr. G. K. Rao, Secretary to the Government of Andhra Pradesh
	13.00 - 14.15	Resources and utilisation of fisheries in Andhra Pradesh Lecture by Mr. S. Banerjee, Director of Fisheries, Andhra Pradesh
	14.30 - 15.45	Socio-economic patterns Lecture by Dr. V. Abraham, Andhra University, Waltair
	15.45 - 16.45	Current fish marketing problems in Andhra Pradesh Lecture by Mr. K. R. W. Yesudas, Deputy General Manager, APFC (Andhra Pradesh Fisheries Corporation)
12-11-80	09.00 - 10.00	Organisation and management objectives, Part I by Mr. Keith Heywood, White Fish Authority, United Kingdom
	10.00 - 11.00	Marketing strategy of APFC Lecture by Mr. K. R. W. Yesudas, Deputy General Manager, APFC
	11.15 - 12.45	Indebtedness and marketing margin in small-scale fisheries : Lecture by Professor S. R. Reddy, Andhra University, Waltair
	14.00 - 15.30	Organisation and management II : Keith Heywood, White Fish Authority, United Kingdom
	15.45 - 16.45	Introduction of business game : White Fish Authority
13-11-80	09.00 - 10.00	Setting up of business game : White Fish Authority
	10.15 - 12.15	Accounting I : Film strip : White Fish Authority
	14.00 - 16.00	Business game, period I : White Fish Authority
14-11-80	09.00 - 12.30	Business game, period I : White Fish Authority

Date	Time	Details
	14.00 - 15.00	Accounting II : Film strip : White Fish Authority
	15.15 - 16.45	APFC accounting system Lecture by Mr. K. V. Rao, Chief General Manager, APFC
15-11-80	09.00 - 11.30	Business game, period I : White Fish Authority
16-11-80		SUNDAY
17-11-80	09.00 - 11 .00	Market research Lecture by Dr. U. K. Srivastava, Indian Institute of Management (IIM), Ahmedabad
	12.30 - 13.00	Market research Lecture by Mr. A. Nordheim, FAO, Rome
	13.15 - 13.45	Quality Control Lecture by Mr. A. Nordheim, FAO, Rome
	14.00 - 16.00	Pricing and price policies Lecture by Dr. U. K. Srivastava, IIM, Ahmedabad
18-11-80	09.00 - 12.30	Business game, period II : White Fish Authority
	14.00 - 16.30	Business game, period II : White Fish Authority
19-11-80		FREE
20-11-80	08.30 - 11.00	Business game, period III : White Fish Authority
	11.15 - 13.15	Marketing information and performance criteria : Lecture by Mr. S. V. Rajeshwar, Administrative Staff College of India, Hyderabad (ASCI)
	14.00 - 16.30	Round-table discussion about future activities of the APFC
21-11-80	09.00 - 12.00	Business game, period III : White Fish Authority
	12.00 - 13.00	Business game, period IV : White Fish Authority
	13.30 - 15.30	Fish handling and distribution : Lecture by Mr. H. Lisac, Fishery Industry Officer, FAO, Rome
	16.00 - 17.00	Marketing research requirements : Lecture by Mr. S. V. Rajeshwar, ASCI, Hyderabad
22-11-80	09.00 - 11.00	Business game, period IV : White Fish Authority
	11.00 - 13.00	Final session of business game
23-11-80		FREE
24-11-80	08.30 - 09.30	Processing costs Lecture by Mr. Reddy, APFC

Date	Time	Details
	09.30 - 13.00	Equipment and facilities for fish marketing, Lecture by Mr. H. Lisac, FAO, Rome
25-11-80	09.00 - 12.30	Fish marketing project implementation in Andhra Pradesh (applied marketing research II) Mr. Ron Nicholson, White Fish Authority
	14.00 - 16.30	Fish marketing project implementation in Andhra Pradesh (applied marketing research III) Mr. Ron Nicholson, White Fish Authority
26-11-80	09.00 - 12.00	Closing of the course, issue of certificates

Appendix 3

Training Course for Fish Marketing Personnel of Andhra Pradesh

LEARNING MATERIALS USED IN THE COURSE

There were five types of learning materials used in the training course.

1. *Lecture notes*

Lecture notes were provided to participants on all major subjects such as local problems and prospects in fish marketing, marketing management and accounting, fish handling.

- 1.1 Fisheries in Andhra Pradesh : Resources and Utilisation
(by S. Banerjee, I.A.S., Director of Fisheries in A.P.)
- 1.2 Current fish marketing problems in Andhra Pradesh
(by K. R. W. Yesudas, Deputy General Manager, Andhra Pradesh Fisheries Corporation)
- 1.3 Accounting — FAO Fish Marketing Management Courses Material.
- 1.4 Contents of a Market Research Proposal (Indian Institute of Management, Ahmedabad)

2. *Background materials for working groups*

These materials were used throughout the business game and the fish marketing project at the end of the course.

- 2.1 Participants Manual, Business Management Exercise, Fish Marketing Personnel (provided by White Fish Authority, U.K.).
- 2.2 A Feasibility Study of Fisheries Development Projects in India, Part B — Andhra Pradesh Fisheries Corporation (prepared by Disney, Shaw, Paga, Graham — Tropical Products Institute).

3. *General background materials*

- 3.1 Guidelines for Fish Storage Experiments (prepared by the FAO - DANIDA Workshop on the Handling of Small Fish in the Arabian Sea).
- 3.2 Study of Consumer Demand for Marine Fish (Indian Institute of Management).

4. *Film strips*

- 4.1 Accounting I (WFA, U.K.)
- 4.2 Accounting II (WFA, U.K.)

5. *Tape slides*

- 5.1 Quality Control (F.A.O.)
- 5.2 Marketing Research (F.A.O.)

Publications of the Bay of Bengal Programme (BOBP)

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

Reports (BOBP/REPI. . .)

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.

Working Papers (BOBP/ WP/ . . .)

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.

Miscellaneous Papers

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.