

## **APPENDICES**

## APPENDIX I

### Background information on selected villages

#### PENTAKOTA (Orissa)



*Pentakota fishing village*

Pentakota is a major fishing centre in Pun District, south Orissa. The village is 3.5 km east of Pun town.

The village was founded in 1958 by migrants from Pentakota in the Vishakhapatnam District, Andhra Pradesh, and from 20 to 30 other villages in different districts in northern Andhra Pradesh. The reasons for the migration were the seasonal low catch rate in Andhra Pradesh and the discovery by the fishermen of abundant fisheries resources in the waters near Pun. These resources were not fully tapped by the local fishermen who were using, and still use, the smaller type of *kattumaram*. The migrant fishermen use the larger, boat-type *nava*.

Fishermen in the main neighbouring fishing villages are also originally from Andhra Pradesh. Chandrabhaga, 35 km east of Pentakota, is a smaller settlement but is similar to Pentakota. The households of these two villages are, in many cases, related in one way or another. The fishermen of Moto-Arakhakud (40 km west of Pentakota) are also originally from Andhra Pradesh, having migrated and settled here three or four generations ago. This village is located further from the beach and is towards Chilika Lake which is also fished with small *vallam*.

A household in Pentakota generally comprises of a nuclear family. Parents might live together with one of their married children. At present there are 9124 fisherfolk distributed among 1274 households. They include 2631 males (of whom 2374 are full-time fishermen), 2431 females and 4152 children.

The local government does not want the number of inhabitants to exceed 10,000, since the village is already considered to be a hindrance to the development of tourism in nearby Pun, which is a place of pilgrimage and famed for its beach. The distribution of licences to new settlers has,

therefore, been restricted. The local government also tries to restrict seasonal migration, but without much success. Every year 250-300 *teppa* and 100-200 *nava* arrive from Andhra Pradesh for the fishing season (October to February), resulting in a seasonal influx of 3000-4000 persons.

Besides the fisherfolk, an additional 4000 persons of Oriya origin live in the northern part of the village. Their main source of income is trade, services and small enterprises.

Though Pentakota is less than 4 km from Pun, the villagers do not maintain much contact with the town. Although the migrants arrived 30 years ago, the second generation in Pentakota is still Telugu-speaking, thus isolating the village culturally and socially. Fishing is the main source of income in the village. Other activities include fish drying, which is undertaken by women. Large quantities of ribbon fish are dried in December. During the rest of the year, smaller varieties of fish are dried. There are about 40-50 dried fish traders in the village, although this trade is said to have been more lucrative in the past. Many women earn some income by carrying the fish from the beach to the traders, godowns (packing places) etc.



*Women carrying fish, Pentakota*

The village comprises of the following types of households:

- Small businessmen of Oriya origin, permanently settled in the village. They run the tiashops, vegetable stalls, tailoring shops etc.
- Crew members owning neither fishing craft nor fishing gear. Some have been owners in the past, but have been unable to replace their fishing craft after its lifespan. Generally, these households have permanently settled in the village and no longer maintain links with, or own any property in, Andhra Pradesh. Their houses are built for more permanent residence, with those who can afford it having mud walls and proper cadjan roofs. They work for a specific craft-owner with whom they come to an agreement at the beginning of each fishing season in return for a loan which has to be repaid before they can work for another craft-owner. This system of bonded labour obliges them to work in a specific craft even if earnings are low. Loans taken are quite substantial (Rs. 2000 to Rs. 3000) and cannot be repaid at short notice.

Most women who carry the fish from the beach to the godowns belong to households in which the husband works as a crew member on traditional craft. This group, together with the group comprising of women-headed households, belongs to the poorest section of the community.

- A small group of fishermen who moved from active fishing to a land-based activity, e.g. fish trade, cycle-rickshaw driving to service the many tourists visiting Pun or transporting fish. They considered fisheries not profitable and, therefore, sold their fishing craft and invested the money in another activity.
- A large group of households owning one or more *teppa* and fishing gear. Some of them have settled permanently in Pentakota and no longer maintain any links with Andhra Pradesh. Others migrate yearly between the two states and usually have near relatives permanently resident in their home village.
- A small group of fishermen owning houses and land in Andhra Pradesh but who mostly live in Orissa, earning a good income from fishing with their motorized and/or non-motorized *teppa* and BLC. During the offseason (May to August) they move their motorized fishing craft to Andhra Pradesh where catches are better at this time of the year. There they fish and make arrangements to lease their land for the coming year.
- A group of 15 big fish traders and several small fish traders. The big fish traders comprise the more affluent part of the population.
- A group of migrant *nava* fishermen who come from Andhra Pradesh to Pun only during the fishing season (December to February). The crew members camp on the beach or stay with relatives. They do not own houses in Pentakota.

It can be concluded that a large part of the population still consider their home village to be in Andhra Pradesh. This is especially so in the case of those who own assets there. Part of the family moves between the two states, while some members remain permanently in Andhra Pradesh. When moving from Pentakota (Orissa) to Andhra Pradesh, a few members stay behind in Orissa to look after house and fishing craft left behind.

That many people consider Pentakota only as a place for fishing is reflected by the fact that little money is spent on housing in the village. Huts are built of cadjan. Only the more affluent fishermen or the families who live there permanently have homes with mud walls. This is in marked contrast to some of the houses in Andhra Pradesh which are made of brick, have tiled roofs and spacious rooms and are provided with electricity.

It seems that most of the earnings are invested in housing, land, buffaloes, cycles and even motor-cycles in Andhra Pradesh.

Access to land in Pentakota (Orissa) is nil. The beach on which the village is located is owned by the government.

The fisheries infrastructure in the environs of Pentakota is quite good. Though the village might be culturally and socially isolated, this isolation is not evident in the trade channels to the wholesale fish markets or to the metropolitan centres. From Pun railway station, two trains run daily to Bhubaneswar from where fish can be transported further. There is even a daily direct connection to Madras. There are two ice factories in Pentakota, and four in Pun.

## TUMMELAPENTA (Andhra Pradesh)



*Tummelapenta fishing village*

Tummelapenta is in Nellore District, south Andhra Pradesh, 10 km east of Kavali town to which it is connected by a road which is, generally, in poor condition. The village consists of three sections. Tummelapenta Pattapopalem, Tummelapenta Pallipalem and a third hamlet where farmers and businessmen live. Tummelapenta Pattapopalem, on which this study focusses, was formerly to the east of the Buckingham Canal. But after damage by storms and a severe cyclone in 1979, the government advised the villagers to move their homes inland, west of the Canal.

Of the 350 households in the village, 146 are fisherfolk households. Most households consist of nuclear families, as the joint family system is not common.

Most of the villagers came from Tamil Nadu and settled in southern Andhra Pradesh about 100 years ago. The population of many other villages along the coast of southern Andhra Pradesh also originated in Tamil Nadu. The reasons for migration are unknown. In contrast to Pentakota (Orissa), the villagers no longer maintain links with their places of origin; many do not even know their exact place of origin in Tamil Nadu. Their language is a mixture of Tamil and Telugu. The style of houses and type of fishing operations do not differ from what is found in Telugu villages.

Fishing is the main, but not the sole, source of income of the fisherfolk households. Women are engaged in fish drying and fish marketing, but also spend a good deal of their time in agriculture. Some households own a piece of land, usually in extent 30-100 cents (100 cents = 1 acre). Others lease land against an annual payment of 100-300 Rs/100 cents and cultivate millet, their staple, on it. Groundnuts, vegetables, tobacco and chillies are also grown in rotation, and sold in the local market. There is only one harvest a year, as the soil is sandy and unsuitable for paddy cultivation. No irrigation system is available.

Others, women as well as men, work as agricultural labourers on land belonging to their fellow-villagers or on land belonging to people outside the village. The men are mainly involved in ploughing and seeding, for which they receive 20 Rs/day, whereas the women look after weeding for 5 Rs/day and water the fields for 8 Rs/day.

It is estimated that, on the average, the men work one month a year in agriculture. The time spent on agriculture depends on the returns from fishing. The agricultural season is from September to January/February and therefore complementary to the fishing season which starts in January and goes on, with intervals, depending on weather conditions, until October.

The forefathers of these villagers were, however, engaged solely in fishing. The present practice have contrasts with developments in some of the surrounding villages, where men who were formerly engaged in agriculture and fishing now earn their income solely from fishing (e.g. in Alagayapakem, where only the women work as agricultural labourers).

Besides fishing and agriculture, fish processing (mostly drying of fish for the traders) and fish marketing are sources of income. In each household, some of the women are engaged in selling fish and earn approximately 10-20 Rs/day. Another source of income is the collection of shells for lime processing.

The inhabitants of Tummelapenta can be broadly divided into four groups :

- Businessmen who have activities outside the village, such as ownership and management of inland fish tanks;
- *Kattumaram* fishermen who own a piece of land in addition to one or more *karttumaram*;
- Fishermen who *own a kattumaram*, but no land; and
- Non-owners who work *as crew members on* one of the *kattumaram*, usually for a family member, and/or as agricultural labourers.

In addition, there is a small group of shrimp agents/collectors who work in return for a fixed wage for one of the fish traders in Kavali.

The Andhra Pradesh State Cooperative Fishermen's Federation Limited, which has its office in Kavali, covers 22 villages in southern Andhra Pradesh. It is also active in Tummelapenta, which is one of the locations selected for implementation of its development programme which includes the distribution of subsidized traditional craft and BLC, supply of fishing gear materials and spare parts for BLC, implementation of a housing scheme, and construction of auction halls, roads and bridges over the Buckingham Canal.

The fisheries/marketing infrastructure in Tummelapenta is limited. Though the distance to Kavali railway station is only 10 km, access is difficult due to the bad road and irregular traffic. Most fish traders live in Kavali, where the nearest ice plant is also sited,



*Drying fish in Tummelapenta*

## THIRUMULLAIVASAL (Tamil Nadu)



*Thirumullaivasal fishing village*

Thirumullaivasal is in Thanjavur District, Tamil Nadu, 13 km east of Sirka.zhi, to which it is connected by a tarred road on which there is a bus service to town every half an hour.

Thirumullaivasal comprises of a town area, where mainly businessmen live, and the adjoining fishing village, on the shore and along the lagoon. There is little contact between the fisherfolk and the town people. Whereas the whole fisherfolk community belongs to the Pattinavar Chetty caste and is Hindu, the greater part of the town population is Muslim. The fisherfolk have more contact with the fisherfolk of neighbouring villages.

There are 1700 people in the fishing village. Of the 470 male adults, 350 are active fishermen, while 25 men fish part-time. Of the latter group, some are owners of a trawler or FRP boat. There are 475 women and 755 children.

Migration in or out of the village does not seem to be common, though many wives come from other fishing communities in the area.

Fishing is the main source of income in the village. Men are mainly involved in capture fishing. Women undertake fish-related activities, such as fish drying and fish selling. They also transport fish from the shore to the trader's storage place by headload. Except for some seasonal labour in agriculture, no alternative income generating activities are available for women or men.

About ten fishermen own some land, but the income from agriculture is very low as the soil is suitable only for groundnut cultivation and produces only one crop a year. Most fishermen lease out their land. Other landowners are mainly merchants.

The households can be broadly divided into four different categories:

- Those mainly dependent on income from fishing as crew members who do not own fishing craft;
- Those in which the income is derived from fishing by own fishing craft;
- Those headed by widowed females who are fish vendors; and
- Those deriving an income from fish trade.

A large number of households are dependent on the income of adult males working as crew members on one of the many non-motorized *kattumaram*. These persons do not work for the same fishing craft-owner all the year round, as in Pentakota, but switch from fishing craft to fishing craft, sometimes even daily. The crew members are usually not related to the fishing craft-owners for whom they work, as is the case in Tummelapenta, and none of their close relatives own any fishing craft.

A peculiar feature is that close relatives of FRP boat crew members are usually fishing craft owners. Distant relatives of crew members of motorized *kattumaram* own fishing craft. None of the relatives of the crew members of non-motorized *kattumaram* seem to own any fishing craft.

It is estimated that about a third of the households own some type of fishing craft. Joint ownership is relevant in the case of trawlers or FRP boats. In these cases the joint owners operate the fishing craft themselves.

Widowed fish vendors, usually young women who have lost their husbands and now have to support young children, constitute the most vulnerable group. Their incomes are very low and irregular, depending entirely on the amount and species of fish landed. They market the fish in nearby towns. Twenty women are engaged in fishing vending on a full-time basis, earning a maximum of 300 Rs/month. Forty women undertake fish vending on a part-time basis, earning 50-100 Rs/month; this is generally a secondary income of the household.

The fish traders in the village also act as moneylenders, providing short-term credit for consumption and long-term credit for the purchase of fishing craft and gear. The latter form of credit obliges the fisherman to sell his catch to the landing trader.

The fisheries infrastructure is satisfactory. Road connections with Sirkazhi, where there is a railway station, are good. From there, fish can be transported to Madras, Bangalore and Kerala.

One of the two ice plants in the village is operating. It has a capacity of about two tonnes/day. This is sufficient during much of the year, but when there are good catches, shortages are experienced. Ice has to be purchased from Chidambaram, approximately 40 km away.



*Flyingfish targeted by the BLC in Thirumullaivasal are brought ashore in a kattumaram.*

**APPENDIX H**  
**Specifications of Fishing Gear**

**PENTAKOTA**

**large mesh drift gillnet**

Netting material	P.E.
Twine size	2mm
Stretched mesh size	140-160 mm
Depth	60-70 meshes

**Large mesh drift gillnet**

Netting material	PA multifilament
Twine sizes	210d/9 210d/12 210d/15
Stretched mesh size	80-120 mm
Depth	80-100 meshes

**Bottom drift gillnet**

Netting material	PA multifilament
Twine size	210d/2
Stretched mesh size	60mm
Depth	120 meshes

**Trammelnet**

Netting material	PA multifilament
Twine size	210d/2-210d/6
Stretched mesh size	Inner wall 40-44 mm Outer wall 260 mm
Depth	Inner wall 60-80 meshes Outer wall 10-12 meshes

**Surface drift gillnet**

Netting material	PA multifilament
Twine size	210d/2
Stretched mesh size	26-30 mm
Depth	600-700 meshes

**Kattumaram seine**

Netting material	Cotton/PE
Twine size	Cotton 8 mm dia
Stretched mesh sizes	20 mm in codend 60 mm in mouth of belly 120 mm in wings

**Hook-and-Line**

Material	
Sizes	1-8mm
Number of hooks	800-1000

(Source. Fisheries Extension Officer, Pun 1989)

## TUMMELAPENTA

### **Large mesh gillnet**

Netting material	PA multifilament
Twine size	210d/9/12/15
Stretched mesh size	90-120 mm
Depth	90-150 meshes

### **Trammelne**

Netting material	PA multifilament
Twine size	210d/2 - 210d/6
Stretched mesh size	Inner wall 42-46 mm Outer wall 260 mm
Depth	Inner wall 65-75 meshes Outer wall 10 meshes

### **Skate bottom set gillnet**

Netting material	PA multifilament
Twine size	210d/24/45/54
Stretched mesh size	280mm
Depth	10-12 meshes

### **Monofilament gillnet**

Netting material	PA monofilament
Twine size	0.2mm
Stretched mesh size	50mm
Depth	125-150 metres

(Source: AFCOF, Kavali 1989)

### APPENDIX III

#### Frequency of depth of fishing operations

##### THIRUMULLAIVASAL

(February 1989 - January 1990)

Depth in metres	BLC	FRP1	FRP2	MOT-KAT	NM-KAT
0-10	2	—		1	8
11-20	5	5	12	10	23
21-30	4	11	7	34	51
31-50	7	24	25	31	21
51-100	57	39	40	18	—
101-200	22	10	9	11	—
200	97	3	13	15	—
Total no. of fishing trips	194	92	117	120	213

##### PENTAKOTA

Depth in metres	BLC-AC	BLC-WC	TEP-LONG	TEP-OBM	TEP-SAIL
0-20	47	75	64	50	130
21-30	—	—	21	19	19
31-50	16	23	24	30	—
51-100	3	1	2	2	—
101-200					
200					
Total no. of fishing trips	66	99	111	101	149

##### TUMMELAPENTA

(March 18, 1989 - March 7, 1990)

Depth in metres	BLC1	BLC2	KAT-L1	KAT-L2	KAT-S
0-10	—	—	108	102	91
11-20	2	22	33	36	40
21-50	24	4	10	0	0
51-100	—	5	—	—	—
101-200	—	—	—	—	—
200					
Total no. of fishing trips	26	31	151	148	141

##### BLC 1 and BLC 2 operating from PAKAL and KRISHNAPATNAM

(July 1989-October 1989 and February 1990)

Depth in metres	BLC1	BLC2
0-10	—	—
11-20	—	—
21-50	45	46
51-100	—	17
101-200	—	—
200		
Total no. of fishing trips	45	63

## APPENDIX IV

### Weight, value and average price of fish, specieswise, for each fishing craft (December 1988-October 1989)

#### PENTAKOTA

Species	BLC-AC			Species	BLC-WC		
	Value I Rs	Weight kg	Average price per kg		Value I Rs	Weight kg	Average price per kg
Seaperch	6960.00	840	8.29	Seaperch	8685.00	1013	8.57
Hilsa	800.00	85	9.41	Hilsa			
Billfish	235.00	33	7.12	Billfish	95.00	20	4.75
Trevally	1285.00	117	10.98	Trevally	6320.00	870	7.26
Pomfres	1070.00	132	8.11	Pomfret	180.00	25	7.20
Seerfish	31800.00	3125	10.18	Seerfish	31605.00	3208	9.85
Catfish	2970.00	456	6.51	Catfish	2035.00	324	6.28
Tuna	1540.00	219	7.03	Tuna			
Shark	5310.00	834	6.37	Shark	4050.00	700	5.79
Ribbonfish				Ribbonfish	70.00	10	7.00
Sciaenids	860.00	115	7.48	Sciaenids	1060.00	45	7.31
Shrimp				Shrimp	180.00	2	90.00
Silverbelly				Silverbelly			
Eel				Eel	150.00	20	7.50
Anchovy				Anchovy			
Indian mackerel				Indian mackerel			
Total	52830.00	5956		Total	54430.00	6337	

Species	TEP-LONG			Species	TEP-OBM		
	Value I Rs	Weight kg	Average price per kg		Value I Rs	Weight kg	Average price per kg
Seaperch	11825.00	1480	7.99	Seaperch	11965.00	502	7.97
Hilsa				Hilsa			
Billfish	270.00	40	6.75	Billfish	240.00	40	6.00
Trevally	2735.00	525	5.21	Trevally	4275.00	758	5.64
Pomfret				Pomfret	40.00	6	6.67
Seerfish	100.00	10	10.00	Seerfish	80.00	20	9.00
Catfish	7910.00	2881	6.22	Catfish	13810.00	2408	5.74
Tuna				Tuna			
Shark	670.00	121	5.54	Shark	7205.00	400	5.15
Ribbonfish	1490.00	258	5.78	Ribbonfish			
Sciaenids	3625.00	540	6.71	Sciaenids	475.00	85	5.59
Shrimp	690.00	4.6	150.00	Shrimp	705.00	4.7	150.00
Silverbelly				Silverbelly	400.00	300	1.33
Eel				Eel			
Anchovy	1000.00	400	2.50	Anchovy	450.00	180	2.50
Indian mackerel				Indian mackerel			
Total	40315.00	6250.6		Total	39745.00	6703.7	

Species	TEP-SAIL		
	Value I Ru	Weight kg	Average price per kg
Seaperch			
Hilsa			
Billfish	2235.00	348	6.42
Trevally	4570.00	877	5.21
Pomfret	450.00	66	6.82
Seerfish	210.00	35	6.00
Catfish	150.00	25	6(X)
Tuna	517.00	142	3.64
Shark	220.00	45	4.89
Ribbonfish	8945.00	2892	3.09
Sciaenids	7265.00	1157	6.28
Shrimp	750.00	16	47.32
Silverbelly	30.00	10	3.00
Eel			
Anchovy	3515.00	850	4.14
Indian mackerel	20.00	5	4.00
Total	28877.00	6468	

## TUMMELAPENTA

<i>Craft</i>				<i>Craft</i>			
<i>Species</i>	<i>Value /Rs</i>	<i>Weight kg</i>	<i>Average price per kg</i>	<i>Species</i>	<i>Value /Rs.</i>	<i>Weight kg</i>	<i>Average price per kg</i>
Seaperch	770.00	81	9.50	Seaperch	790.00	86	9.29
Trevally	588.00	173	3.40	Trevally	1128.00	221	5.10
Seerfish	5650.00	565	10.00	Seerfish	4820.00	482	10.00
Catfish	1053.00	336	3.13	Catfish	2936.00	982	2.99
Tuna	53.00	16	3.31	Tuna	1132.00	362	3.13
Shark	1738.00	510	3.41	Shark	4679.00	1180	3.97
Ray	627.00	312	2.01	Ray	520.00	261	1.99
Pomfret	300.00	130	0.00	Pomfret	910.00	91	10.00
Indian mackerel	129.00	42	3.07	Indian mackerel	57.00	19	3.00
Anchovy				Anchovy			
Late				Late	120.00	12	10.00
Shrimp	2830.00	53	53.60	Shrimp	8535.00	171	50.00
Eel				Eel	1215.00	241	5.04
Ribbonfish				Ribbonfish			
Silverbelly				Silverbelly			
Sardine				Sardine			
Others	3.00	3	.00	Others	22.00	12	1.83
<b>Total</b>	<b>4741.00</b>	<b>2221</b>		<b>Total</b>	<b>26864.00</b>	<b>4120</b>	

<i>Craft</i>				<i>Craft</i>			
<i>Species</i>	<i>Value /Rs.</i>	<i>Weight kg</i>	<i>Average price per kg</i>	<i>Species</i>	<i>Value /Rs.</i>	<i>Weight kg</i>	<i>Average price per kg</i>
Seaperch	783.00	205	3.81	Seaperch			
Trevally				Trevally	724.00	90	3.81
Seerfish				Seerfish			
Catfish				Catfish			
Tuna				Tuna			
Shark				Shark			
Ray				Ray			
Pomfret	10.00	1	10.00	Pomfret			
Indian mackerel	1548.00	475	3.27	Indian mackerel	059.00	353	3.00
Anchovy	8870.00	1841	4.82	Anchovy	7137.00	1746	409.00
Late				Late			
Shrimp	6242.00	108	58.00	Shrimp	6653.00	110	60.48
Eel				Eel			
Ribbonfish	288.00	72	4.00	Ribbonfish	360.00	80	4.50
Silverbelly	549.00	151	3.64	Silverbelly	565.00	143	3.95
Sardine	225.00	45	5.00	Sardine	322.00	68	4.74
Others	303.50	132	2.30	Others	369.00	149	2.41
<b>Total</b>	<b>18818.50</b>	<b>3030</b>		<b>Total</b>	<b>17189.00</b>	<b>2839</b>	

<i>Craft</i>			
<i>Species</i>	<i>Value Ru.</i>	<i>Weight kg</i>	<i>Average price per kg</i>
Seaperch			
Trevally	684.00	180	3.80
Seerfish			
Catfish			
Tuna			
Shark			
Ray			
Pomfret			
Indian mackerel	914.00	302	3.03
Anchovy	8793.00	1340	6.56
Late			
Shrimp	5785.00	102	56.88
Eel			
Ribbonfish	348.00	87	4.00
Silverbelly	616.00	155	3.97
Sardine	410.00	82	5.00
Others	258.00	103	2.51
<b>Total</b>	<b>17808.00</b>	<b>2351</b>	

- The figures for BLCI represent the amount caught during the period March 18, 1989 — October 1989. Craft was destroyed during cyclone in November 1989.

## THIRUMULLAIVASAL

Craft		BLCI :		Craft		FRP1	
Species	Value / Ru	Weight kg	Average price per kg	Species	Value / Rs.	Weight kg	Average price per kg
Seerfish	19822.00	062	18.66	Seerfish	8362.00	451	18.54
Tuna	30769.00	7489	4.10	Tuna	7490.00	2280	3.29
Shark	48018.00	6121	7.85	Shark	720.00	86	8.37
Indian mackerel				Indian mackerel	930.00	310	3.00
Sardine				Sardine			
Billfish	2650.00	787	3.37	Billfish			
Flyingfish	3396600	8949	3.79	Flyingfish	500.00	120	4.17
Queenfish				Queenfish			
Shrimp				Shrimp			
Catfish				Catfish	50.00	9	16.67
Pomfret				Pomfret			
Others	5116.00	279	4.00	Others	5163.00	1065	4.85
Total	140341.00	25687		Total	23315.00	4321	

Craft		FRP2		Craft		MOT-KAT	
Species	Value / Rs.	Weight kg	Average price per kg	Species	Value / Rs.	Weight kg.	Average price per kg
Seerfish	30546.00	667	18.32	Seerfish			
Tuna	4814.00	1315	3.66	Tuna			
Shark	015.00	128	7.93	Shark	4100.00	530	7.74
Indian mackerel				Indian mackerel	14356.00	2550	5.63
Sardine				Sardine	3750.00	900	4.17
Billfish	50.00	10	5.00	Billfish			
Flyingfish	7335.00	1935	3.79	Flyingfish	16435.00	5465	3.01
Queenfish				Queenfish			
Shrimp				Shrimp	245.00	7	35.00
Catfish				Catfish			
Pomfret	30.00	3	10.00	Pomfret			
Others	2350.00	415	5.66	Others	3225.00	888	3.63
Total	46140.00	5473		Total	42111.00	10340	

Craft		NM-KA T	
Species	Value / Ru.	Weight kg	Average price per kg
Seerfish	200.00	23	8.70
Tuna	100.00	28	3.57
Shark			
Indian mackerel	8923.00	1241	7.19
Sardine	8095.00	2455	3.30
Billfish			
Flyingfish			
Queenfish			
Shrimp	965.00	26.5	36.42
Catfish			
Pomfret			
Others	4990.00	1344	3.71
Total	23273.00	5117.5	

## APPENDIX V

### Cost and earnings for each fishing craft

#### PENTAKOTA

Craft	BLC-AC	BLC-WC	TEP-LONG	TEP-OBM	TEP-SAIL
1. GROSS CATCH VALUE	57,633	59,378	43,980	43,358	31,502
2. INVESTMENT	64,500	163,100	46,000	62,500	40,800
I-hull	80,000	80,000	18,000	18,000	9,500
Engine	42,500	49,500	12,000	21,000	21,300
Gear	40,000	31,600	14,000	21,500	8,000
Sail	2,000	2,000	2,000	2,000	2,000
3. VARIABLE COSTS	30,398	16,525	30,542	29,204	14,929
Diesel	4,075	5,667	4,898	—	—
Kerosene	—	—	—	6,791	—
Luboil	1,069	1,229	813	2,116	—
Food	2,377	2,942	1,244	813	1,064
Bait	49	158	4,685	5,005	—
Ice	—	—	—	—	—
Trawfish	—	—	—	273	—
Repairs and maintenance	7,555	169	2,975	624	638
Crew share	15,273	6,360	15,927	13,560	13,227
Other costs	—	—	—	22	—
4. FIXED COSTS	26,225	25,125	9,335	12,410	8,482
Insurance	3,000	3,000	35	35	—
Depreciation	23,225	22,125	9,300	12,375	8,482
5. TOTAL COSTS (3 + 4)	56,623	41,650	39,877	41,614	23,411
6. NET EARNINGS (1 - 5)	1,010	17,728	4,103	1,744	8,091

#### TUMMELAPENTA

Craft	BLC1	BLC2	KATLI	KATL2	KATS
1. GROSS CATCH VALUE	23,586	26,863	18,864	17,179	7,809
2. INVESTMENT	164,500	164,500	13,700	13,700	13,700
Hull	80,000	80,000	8,500	8,500	8,500
Engine	42,500	42,500	—	—	—
Gear	40,000	40,000	5,000	5,000	5,000
Sail	2,000	2,000	200	200	200
3. VARIABLE COSTS	11,170	9,965	—	—	—
Diesel	2,170	1,682	—	—	—
Kerosene	784	675	—	—	—
Lahoil	558	434	—	—	—
Food	2,306	1,829	—	—	—
Bait	—	—	—	—	—
Ice	—	—	—	—	—
Trawfish	—	—	—	—	—
Repairs and maintenance	—	—	—	—	—
Crew share	5,362	4,965	—	—	—
Other costs	—	—	—	—	—
4. FIXED COSTS	26,225	26,225	4,117	4,117	4,117
Insurance	3,000	3,000	—	—	—
Depreciation	23,225	23,225	4,117	4,117	4,117
5. TOTAL COSTS (3 + 4)	37,395	26,225	4,117	4,117	4,117
6. NET EARNINGS (1 - 5)	(13,809)	(8,947)*	14,747	13,062	13,692

## THIRUMULLAIVASAL

Craft	BLC	FRPI	FRP2	MOT-KAT	NM-KAT
1. GROSS CATCH VALUE	140,341	23,315	46,140	42,111	23,273
2. INVESTMENT	178,000	140,000	140,000	34,500	15,500
Hull	72,000	70,000	70,000	8,000	5,000
Engine	44,000	40,000	40,000	16,500	—
Gear	60,500	30,000	30,000	9,500	10,000
Sail	2,000	—	—	500	500
3. VARIABLE COSTS	80,350	13,707	24,593	29,368	14,911
Diesel	7,634	3,024	3,853	255	—
Kerosene	164	—	15	2,549	30
Luboil	1,648	323	423	142	—
Food	7,720	3,720	4,640	2,576	2,121
Bait	1,362	—	—	40	234
Ice	1,355	—	—	—	—
Trawlfish	—	—	—	—	—
Repairs and maintenance	7,463	450	2,060	3,440	165
Crew share	52,439	6,190	13,602	20,266	12,211
Other costs	565	—	—	100	150
4. FIXED COSTS	28,088	23,833	23,833	8,333	3,833
Insurance	3,238	2,500	2,500	—	—
Depreciation	24,850	21,333	21,333	8,333	3,833
5. TOTAL COSTS (3 + 4)	108,438	37,540	48,426	37,701	18,744
6. NET EARNINGS (1 – 5)	31,903	(14,225)'	(2,286)'	4,410'	4,529

- Figures between brackets represent negative amounts

## APPENDIX VI

### Share systems by type of fishing craft

#### PENTAKOTA

##### BLC-AC and BLC-WC

Net earnings  
50% for the boat owner  
50% for the crew members

##### TEPPA-LONG

Net earnings to be divided into 8 shares  
Boat + engine + sail : 3 shares  
Crew members : 5 shares

##### TEPPA-OBM

Net earnings to be divided into 9 shares  
Boat + engine + net : 4 shares  
Crew members : 5 shares

##### TEPPA-SAIL

Net earnings to be divided into 7 shares  
Boat + sail + nets : 2 shares  
Crew members : 5 shares

#### TUMMELAPENTA

##### BLC1 and BLC2

Crew members work for a fixed wage of Rs. 20/- per fishing trip.

##### KAT-Li, KAT-L2 and KAT-S

Units are family operated, no crew share is paid.

#### THIRUMULLAIVASAL

##### BLC

##### Gilinetting

Net earnings divided into 3 shares  
Crew members : 1 share  
Boat + gear : 2 shares

##### Other gear

Net earnings divided into 2 shares  
Crew members : 1 share  
Boat + gear : 1 share

##### FRP1 and FRP2

Net earnings to be divided into 3 shares  
Crew members : 1 share  
Boat + gear : 2 shares

##### MOT-KAT

Net earnings to be divided into 5 shares when there are 3 or more crew members  
Crew members : 3 shares  
Boat + gear : 2 shares

Net earnings to be divided into 4 shares when there are 2 crew members  
Crew members : 2 shares  
Boat + gear : 2 shares

##### NM-KAT

Net earnings divided into 5 shares  
Crew members : 3 shares  
Boat + gear : 2 shares

In the situation where there are only 2 crew members the net earnings are divided into 4 shares  
Crew members : 2 shares  
Boat + gear : 2 shares

**Note :** In Pentakota, the craft-owner automatically receives a crew share on top of the boat share, irrespective of whether he goes out fishing or not.

## PUBLICATIONS OF THE BAY OF BENGAL PROGRAMME (BOBP)

The BOBP brings out the following types of publications

Reports (BOBP/REP/...) which describe and analyze completed activities such as seminars, annual meetings of BOBP's Advisory Committee, and subprojects in member-countries for which BOBP inputs have ended.

Working Papers (BOBP/WP/...) which are progress reports that discuss the findings of ongoing BOBP work.

Manuals and Guides (BOBP/MAG/...) which are instructional documents for specific audiences.

Information Documents (BOBP/INF/...) which are bibliographies and descriptive documents on the fisheries of member-countries in the region.

Newsletters (*Bay of Bengal News*) which are issued quarterly and which contain illustrated articles and features in non-technical style on BOBP work and related subjects.

**Other publications** which include books and other miscellaneous reports.

A list of publications from 1986 onwards is given below. A complete list of publications is available on request.

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24. *Fisherwomen's Activities in Bangladesh: A Participatory Approach to Development.* P. Natpracha. (Madras, May 1986.)
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42. *Fish Trap Trials in Sri Lanka.* (Based on a report by T. Hammerman). (Madras, January 1986.)
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*Motorization of Dinghy Boats in Kasafal, Orissa.* BOBP/MIS/4. S. Johansen and O Gulbrandsen. (Madras, November 1986.)

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