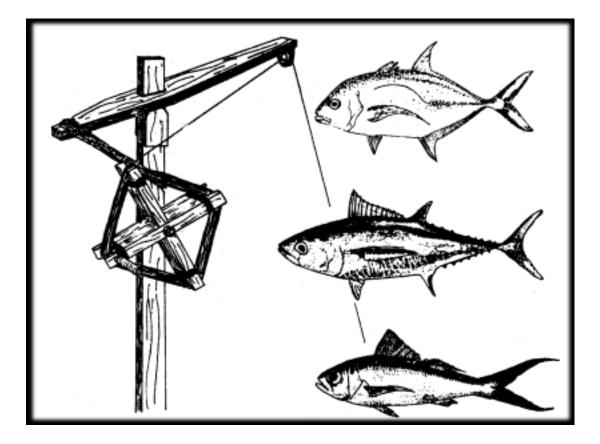


**Report of Participation in FAO/Fiji Government Fisheries Rehabilitation Programme** 



## SOUTH PACIFIC COMMISSION NOUMEA, NEW CALEDONIA

SOUTH PACIFIC COMMISSION

Deep Sea Fisheries Development Project

## **REPORT OF PARTICIPATION IN FAO/FIJI GOVERNMENT**

## FISHERIES REHABILITATION PROGRAMME

FIJI

22 March to 8 May 1983

by

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South Pacific Commission Noumea, New Caledonia July 1984

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#### 1. Rationale of the FAO/Fiji Government Fisheries Rehabilitation Programme

#### 1.1 Need for the programme

On 1 March 1983 cyclone Oscar passed through the Fiji group causing widespread damage to dwellings, agricultural areas, communications and other equipment in localities adjacent to the track of the cyclone, as shown in Figure 1. This was compounded several weeks later (March 27) when cyclone Sarah caused additional damage in the areas illustrated. In many coastal villages, particularly those in the more remote island locations where fishing activities contribute a major part of the animal protein consumed as well as generating cash income, the destruction of fishing vessels, nets and other equipment caused serious hardships. In view of the lost agricultural production and the increased requirement in cyclone-affected areas for cash for reconstruction, the rehabilitation of local fisheries was seen by the Government of Fiji as a prime means of generating subsistence food supplies and cash earning opportunities.

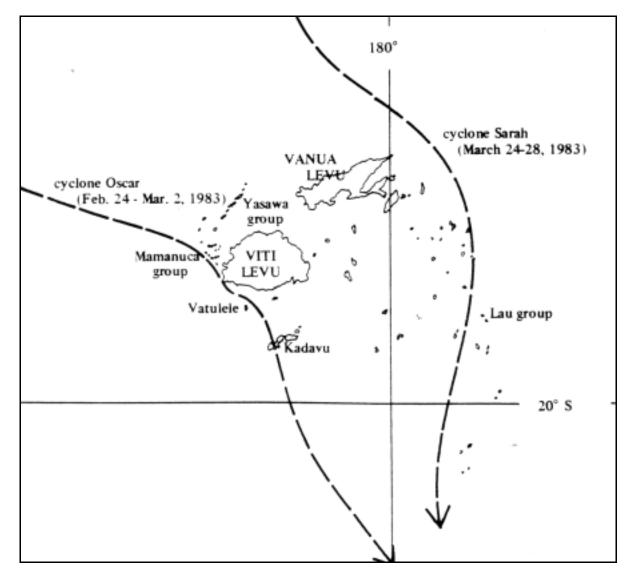


Figure 1: Approximate tracks of cyclones Oscar and Sarah through Fiji.

#### 1.2 Programme objectives

On 5 April 1982 the Food and Agriculture Organization of the United Nations (FAO) formally released funds to enable the Government of Fiji, via its Fisheries Division and National Marketing Authority, to implement a major fisheries rehabilitation programme, coordinated through the office of the Director of the FAO/UNDP Regional Fisheries Development Programme (Project RAS/73/025). Main activities envisaged were:

- (i) Replacement of damaged fishing boats, motors and gear;
- (ii) Supply of subsidised fuel, ice and gear to encourage short-term increases in production;
- (iii) Location of ice storage facilities in rural areas to allow stockpiling and subsequent sale of production which was surplus to local requirements;
- (iv) Purchasing trips by fish collection vessels.

It was recognised that substantial extension work would be required to support these activities, and assistance from the South Pacific Commission (SPC), via its Deep Sea Fisheries Development (DSFD) Project, was sought in this regard in an urgent telex request from the Government of Fiji, dated 16 March 1983.

#### 1.3 SPC involvement

In response to this request, two SPC master fishermen were assigned to work with the Fisheries Division of Fiji's Ministry of Agriculture and Fisheries in implementing the programme. The services of the master fishermen were contributed by SPC, with all direct costs (such as travel, etc.) associated with their participation being met by programme funds. Their specific responsibilities were:

- (i) To organize and conduct demonstrations and training sessions with village fishermen and generally encourage and facilitate their return to full participation in local fishing activities;
- (ii) To distribute a limited amount of fishing gear in accordance with (i) above;
- (iii) To evaluate the extent of hurricane damage to village fishing vessels and gear and advise on the subsequent distribution of additional gear and equipment;
- (iv) To record fish landings where possible in order to assist the Fisheries Division with longer term resource assessment work.

In accordance with these guidelines, Master Fisherman Pale Taumaia worked in Fiji's Western Division from 22 March to 1 May, and Master Fisherman Lindsay Chapman in Kadavu in the Central Division, from 6 April to 8 May in the areas shown in Figure 2. Additional areas of programme activity in which the master fishermen were not involved are also shown.

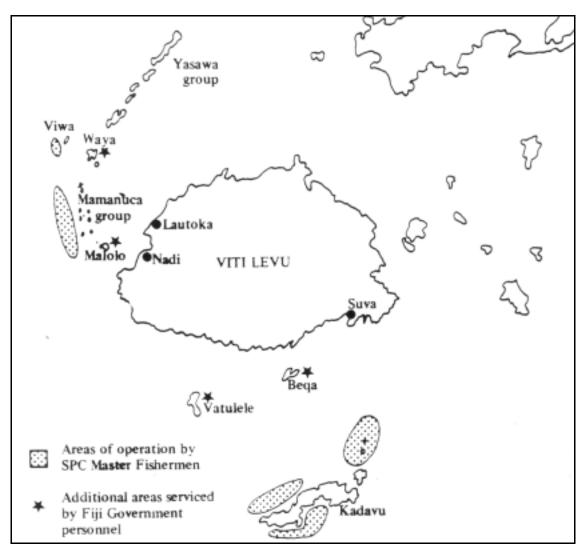


Figure 2: Fisheries Rehabilitation Programme areas of operation.

1.4 Implementation of the programme

SPC involvement in the programme was restricted to those activities directly related to fishing, and to advising the Fisheries Division of the extent of local damage and the assessed requirement for further assistance. The master fishermen were not involved in overall coordination of the programme, scheduling visits, financial or other administration Fisheries Division extension officers were responsible for liaising with village authorities and scheduling the master fishermen's visits to the various localities involved. The Fisheries Division and the National Marketing Authority together organised trips by the larger vessel *Gonedau* (Central Division) and *Sasalu Ni Waitui* (Western Division) which delivered diesel and outboard fuel to the fishing groups, and ice to the ice boxes at the sites to be visited, and purchased fish. Additional ice boxes were installed as the programme progressed.

Two 28-foot wooden monohull fishing boats, built by the Fisheries Division's boat yard and similar in design to the standard FAO dory, were placed at the master fishermen's disposal. The one used by Master Fisherman Lindsay Chapman in Central Division had previously been rigged for experimental trolling work, and in addition to the two wooden handreels supplied as standard on these vessels, was equipped with two trolling booms and a fish killing box near the stern, as shown in Figure 3. The 28-footer used by Master Fisherman Pale Taumaia in Western Division was a standard model not equipped with these items. Both functioned solely as training vessels as it was always possible to offload fish directly to the onshore ice boxes, silos or the collection boats.

Three more 28-footers, operated by Fisheries Division staff, were assigned to carry out programme activities, two in the Central Division and one in the Western Division, and these worked in conjunction with the master fishermen where circumstances permitted. The two vessels operated by Fisheries Division staff in Central Division served as both training and collection vessels, buying locally caught fish and transporting it to the NMA outlet in Suva on a weekly basis. The 28-footers operated in the Western Division by Fisheries Division officers generally fished together with Master Fisherman Pale Taumaia's vessel and both offloaded their catch into village silos for subsequent collection by the *Sasalu Ni Waitui*, or, on one occasion, directly onto the collection vessel itself. Fish from the collection vessel were then transported by refrigerated truck to Suva for sale via the NMA outlet there.

As a major objective was to encourage increased fish production by local people, priority was given to providing the means for villagers to fish. This included the distribution of a limited amount of fishing gear, organisation of training activities in programme and private vessels, and the transportation of villagers to distant fishing grounds. This latter activity frequently involved the towing of boatloads of people to are as selected for fish drives or the collection of shellfish.

In all localities visited, villagers were encouraged to participate in fishing activities, both by the prospect of immediate food or cash benefits and by the added incentives of free fuel, ice and fishing gear which were supplied to bona fide fishing groups. All the fish caught were divided among the participating local fishermen or trainees, who then generally sold them to the collection vessels at the flat rate of F\$1.00/kg cleaned. These were subsequently re-sold by the NMA at a price of F\$2.00 to F\$2.60/kg (Suva rates).

Deep bottom droplining was the major fishing activity of both master fishermen, with a substantial amount of trolling being carried out in Central Division, particularly in those areas where bottom fishing grounds were restricted. Only a limited amount of trolling while travelling was conducted in the Western Division.

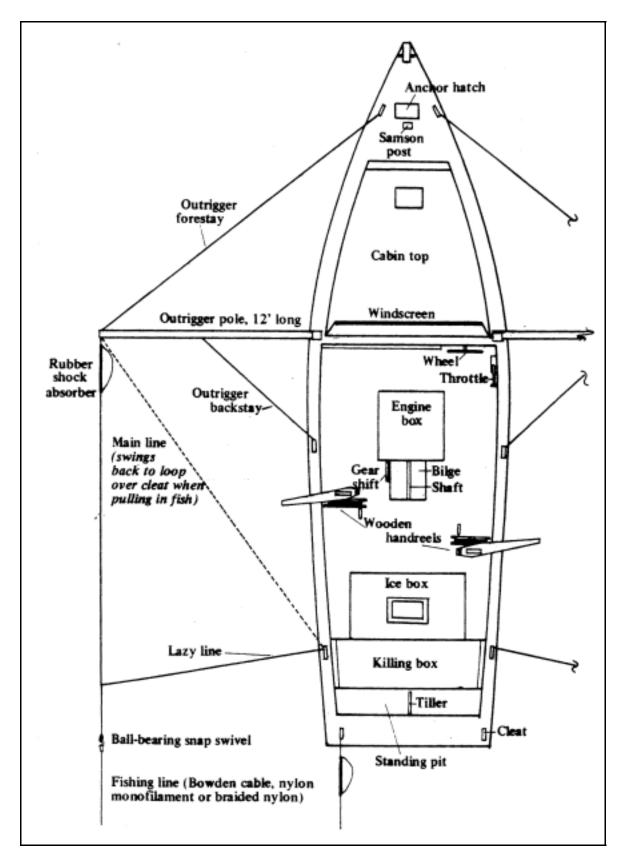


Figure 3: Fishing arrangement of the 28-foot wooden dory used by SPC Master Fisherman in Central Division

#### 2. SPC Work Programme

#### 2.1 Summary

The activities of the two SPC master fishermen covered a 7-week period, and are summarised in Table 1 below.

#### **Table 1: Summary of SPC Activities**

March 22, 1983	Arrival of SPC Master Fisherman P. Taumaia in Lautoka.
March 23—25	Collection of fishing gear from Suva. Discussions with FAO and 1isheries Division staff. Purchase of additional gear.
March 26—29	Gear rigging and preparation of two vessels. Distribution of fishing gear to Lautoka fishermen.
March 30—31	Purchase of bait. First fishing trip in Western Division.
April 1—5	P. Taumaia to Suva to collect bait supply and additional fishing gear. Further discussions with FAO personnel.
April 6	P. Taumaia return to Lautoka. Arrival of Master Fisherman L. B. Chapman.
April 7—8	Fishing trip in Western Division by P. Taumaia. L. B. Chapman preparing project vessel for Central Division and discussions with Fisheries Division and FAO.
April 8	Fishing in Central Division, returning April 14.
April 12	Fishing in Western Division, returning April 16.
April 15—18	Modifications to Central Division 28-footer.
April 19	Fishing in Western Division, returning April 23. Fishing in Central Division, returning May 3.
April 26	Fishing in Western Division, returning April 27.
April 28—30	Debriefing, report writing and packing by P. Taumaia.
May 1	Departure of P. Taumaia.
May 4—7	Debriefing, report writing and packing by L. B. Chapman.
May 8	Departure of L. B. Chapman.

The work of both master fishermen was frequently interrupted, especially in the early stages, by the need to attend to unexpected operational difficulties, such as the local unavailability of adequate bait supplies, and the basic maintenance required to render programme vessels workable.

#### 2.2 Training and village activities

#### 2.2.1 Central Division

Twenty-eight trainees from four villages joined the project vessel in bottom fishing or trolling during its period working around Kadavu. Time was allocated for a further six trainees from a fifth village, but this was cancelled when a scheduled ice delivery did not take place and fish storage facilities were consequently lacking.

On three occasions punts and other village boats were towed to distant fishing areas. The first occasion was a day trip in which 25 villagers in 3 punts were towed to a shallow area in the lagoon where they conducted a fish drive which yielded approximately 80 kg of fish, and collected about 40 kg of rock lobsters. The second trip took place at night and enabled 15 people in 4 punts to catch a total of about 100 kg of fish by handlining. On the third occasion, another day trip, 20 villagers in 3 punts dived along the reef spearing some 60 kg of fish and 20 kg of rock lobsters.

All the villages visited showed a great deal of interest and were disappointed that the 28-footer was able to stay for only 2 or 3 days in each place. All looked forward to the continuation of this extension activity after the departure of the master fisherman.

#### 2.2.2 Western Division

About twenty-five trainees from two villages in the Mamanuca island chain participated in bottom fishing activities supervised by Master Fisherman P. Taumaia. In addition to those who joined the project vessel, several local fishing vessels based in coastal areas around Lautoka also frequently accompanied the 28-footer.

After problems which resulted in an initial lack of impetus were overcome, the programme ran well in this area and villagers became very involved once the potential of bottom fishing had been demonstrated by the first one or two trips. As in the Central Division, local people anticipated that further, similar work would be continued by the Fisheries Division after the departure of the master fisherman.

#### 2.3 Catches

Details of both master fishermen's fishing activities can be found in Appendix 1. Table 2 shows the catches of the project vessel in Kadavu. These include the fish taken by trainees and crew on the same vessel, but not those fish taken by other fishermen or vessels fishing in association.

Trips	Number of fish	Weight (kg)	Fishing hours
1	7	16	18.5
2	24	56	14.0
3	29	55	12.0
4	44	236	16.0
5	7	11	6.0
6	39	102	10.5
7	42	34	8.0
8	48	25	5.5
9	26	54	7.0
10	35	119	10.5
11	49	81	16.0
Total	350	789	124.0

 Table 2: Catches in Central Division (all fishing methods)

The overall catch achieved was 6.4 kg/fishing hour, which is very satisfactory as the effectiveness of the vessel as a fishing unit was reduced to some extent by its training and transporting activities.

Three of the villages visited were on the exposed southern coast of Kadavu where wind and sea conditions often made bottom fishing and trolling outside the reef difficult. A good deal of shallow water line fishing and trolling was therefore conducted inside the lagoon. Deep bottom droplining on the outer reef slope, the standard fishing method of the DSFD project, occupied 33 fishing hours and yielded 412 kg of fish (52% of the total catch) for an effort of 66 reel-hours. The catch rate was thus 12.5 kg/fishing hour or 6.2 kg/reel-hour, a rate which compares well with those obtained by earlier project visits to Fiji and elsewhere. Shallow water bottom fishing within the lagoon, using a variable number of handlines, occupied a further 17.5 fishing hours and produced a catch of 53 kg. The catch rate by this method was thus 3.0 kg/fishing hour, or about a quarter of that achieved by deep bottom fishing.

Table 3 shows the catches obtained by the second Project vessel in the Western Division. Again, catches taken by fishermen on other boats are not included. Due to the lack of weighing facilities in the islands visited, the catch weights for trips 4—9 are estimates only.

Trips	Number of fish	Weight (kg)	Fishing hours
1	18	74	6
2	44	109	12
3	12	24	6
4	12	68	7
5	20	64	6
6	18	77	6
7	63	216	11
8	59	196	8
9	40	141	8
10	90	217	20
Total	386	1186	90

 Table 3: Catches in Western Division (all fishing methods)

Operating conditions were such that all fishing was done outside the reef, and that a higher proportion of time could be spent deep-bottom fishing than in Kadavu. As a result overall catch rates were generally higher at 13.2 kg/fishing hour, for a total of 90 hours spent fishing. Deep bottom fishing catch rates were comparable: 173 reel-hours effort during 75 hours spent bottom fishing produced 1/112 kg, a rate of 14.8 kg/fishing hour or 6.4 kg/ree1-hour.

The species composition of the catch is detailed for reference in Appendix 2. Deep water snappers (families Lutjanidae (sub-families Etelinae and Apsilinae) and some Lethrininae) comprised 13.1% of the catch in Central Division and 34.8% in Western Division, with intermediate to shallow water snappers (family Lutjanidae (sub-family Lutjanina)) also being more frequently caught in the west. This difference is attributable to the higher proportion of time spent deep-bottom fishing in the Western Division. In the Central Division, the greater portions of time spent in trolling or bottom fishing inside the lagoon resulted in relatively high proportions of coastal pelagic (e.g. families Sphyraenidae, Scombridae, some Serranidae) and demersal lagoon (e.g. families Lethrinidae, Some Serranidae) species in the catch.

Sharks comprised about 21% of the catch in Central Division and 25% in Western Division. These were not acceptable for purchase to the NMA but on some occasions were eaten in the village.

Biological data (length, weight, sex, gonad state, time caught and bait used) were collected for 230 fish caught trolling and bottom fishing outside the reef at Kadavu. These data were copied to the Fiji Fisheries Division to assist in ongoing studies of inshore pelagic species but are not presented in this report.

In both locations, the fish caught became the property of the trainees on board, and were sold or, less frequently, retained for consumption, by them. The fish were sold gutted and gilled to the collection vessels, often after storage in local ice boxes for several days.

#### 3. Comments

By the time implementation of this programme commenced, several weeks after cyclone Oscar, the villages visited had recovered considerably from the damage they had suffered, with reconstruction

welcomed the earning opportunities generated by the programme to assist with the reconstruction work.

In addition to generating direct benefit to the communities concerned, the programme also allowed for evaluation of the longer term fisheries development needs of the areas concerned. Most villages visited had access to rich or adequate fishery resources, but the villages along the southern coast of Kadavu were an exception. Here the small lagoon area, exposure to trade winds and restrictions imposed by the 'mataqali' system of fishing right ownership severely limit the area and time available for fishing. A recommendation arising from this project visit is that the Fisheries Division consider undertaking resource assessment work in this vicinity, and, if necessary, measures be taken to develop the more productive fishing areas or stocks.

#### 4. Acknowledgements

The master fishermen gratefully acknowledge the support of Mr Harry Sperling, Director of the FAO/UNDP Regional Fisheries Development Programme, and Messrs Apisai Sesewa and Charles Evening of the Fiji Fisheries Division.

#### 5. References

Johnson, G.D. (1980). The limits and relationships of the Lutjanidae and associated families *Bulletin of the Scripps Institution of Oceanography*, Volume 24. University of California Press, Berkeley and Los Angeles, California, U.S.A.

	FISH	ING HOURS	*			CAT	C <b>H</b> *		
Trip No.	Bottom Trolling Fishing		Tota1	Tota1 Bottom fishing		Trolling		Tota1	
				No.	kg	No.	kg	No.	kg
(a) Cent	ral Division								
1	0.0	18.5	18.5	0	0	7	16	7	16
2	3.0	11.0	14.0	13	30	11	26	24	56
3	6.0	6.0	12.0	24	42	5	13	29	55
4	6.0	10.0	16.0	28	190	16	46	44	236
5	5.0	1.0	6.0	6	9	1	2	7	11
6	6.5	4.0	10.5	5	45	34	57	39	102
7	6.0	2.0	8.0	40	26	2	8	42	34
8	5.5	0.0	5.5	48	25	0	0	48	25
9	3.0	4.0	7.0	18	26	8	28	26	54
10	0.0	10.5	10.5	0	0	35	119	35	119
11	9.5	6.5	16.0	48	72	1	9	49	81
Subtota1	50.5	73.5	124.0	230	465	120	324	350	789
(b) Wes	tern Divisio	1							
1	6.0	0.0	6.0	18	74	0	0	18	74
2	9.0	3.0	12.0	40	86	4	23	44	109
3	3.0	3.0	6.0	12	24	0	0	12	24
4	5.0	2.0	7.0	22	68	_	_	22	- 68
5	6.0	0.0	6.0	$\frac{22}{20}$	64	_	_	$\frac{22}{20}$	64
6	6.0	0.0	6.0	18	77	_	_	18	77
7	8.0	3.0	11.0	55	190	8	26	63	216
8	8.0	0.0	8.0	59	196	_		59	196
9	8.0	0.0	8.0	40	141	_	_	40	141
10	16.0	4.0	20.0	79	192	11	25	90	217
Subtota1	75.0	15.0	90.0	363	1112	23	74	386	118
TOTAL	105 5	88.5	214.0	593	1577	143	398	736	197

CATCH RECORDS FOR INDIVIDUAL TRIPS

\* Includes all fishing, i.e. both outside reef and inside lagoon.

# **SPECIES COMPOSITION OF THE CATCH** (Classification follows Johnson, G.D. (1980))

FAMILY/Species	Central Division Catch		Western Division Catch		Total Catch	
	No.	Kg	No.	Kg	No.	Kg
LUTJANIDAE (Sub-family	ETELIN	AE, APSIL	LINAE*)			
Aphareus rutilans	5	17	_	_	5	17
Aprion virescens	1	2	1	5	2	7
Etelis carbunculus	4	3	25	183	29	186
Paracaesio kusakarii*	2	4.5	6	12	8	16.5
pristipomoides amoenus	1	0.5	—	_	1	0.5
Pristipomoides auricilla	1	0.5	_	_	1	0.5
Pristipomoides filamentosus	12	13	_	_	12	13
Pristipomoides flavipinnis	16	16.5	61	71	77	87.5
Pristipomoides multidens	15	31.5	45	91	60	122.5
Pristipomoides zonatus	5	4	25	22	30	26
Subtotal	62	92.5	163	384	225	476.5
Lutjanus argentimaculatus	3	10	12	50	15	60
5	14	44	16	72	30	116
Lutjanus fulvus	3	1	_	_	3	1
Lutjanus fulvus Lutjanus gibbus	3 18	1 11.5	16  44	72 	3 62	1 42.5
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira	3 18 8	1 11.5 2	_	_	3 62 8	$\begin{array}{c}1\\42.5\\2\end{array}$
Lutjanus bohar Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma	3 18 8 6	1 11.5 2 4	_	_	3 62 8 6	1 42.5 2 4
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira	3 18 8	1 11.5 2	_	_	3 62 8	$\begin{array}{c}1\\42.5\\2\end{array}$
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma	3 18 8 6	1 11.5 2 4	_	_	3 62 8 6	1 42.5 2 4
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus	3 18 8 6 14	1 11.5 2 4 4	_ 44 _ _ _	31 - - -	3 62 8 6 14	1 $42.5$ $2$ $4$ $4$
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE	3 18 8 6 14	1 11.5 2 4 4	_ 44 _ _ _	31 - - -	3 62 8 6 14	1 42.5 2 4 4
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE Gnathodentex mossambicus	3 18 8 6 14 <b>66</b>	1 11.5 2 4 4 76.5	44 - - 72	- 31 - - 153	3 62 8 6 14 <b>138</b>	1 42.5 2 4 4 229.5
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE Gnathodentex mossambicus Gymnocranius robinsoni	3 18 8 6 14 <b>66</b> 13	1 11.5 2 4 4 76.5	44 - - 72	- 31 - - 153	3 62 8 6 14 <b>138</b> 36	1 42.5 2 4 4 229.5 44.5
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE Gnathodentex mossambicus Gymnocranius robinsoni Lethrinus lentjan	3 18 8 6 14 <b>66</b> 13 1	1 11.5 2 4 4 76.5 10.5 2.5	44 - - 72	- 31 - - 153	3 62 8 6 14 <b>138</b> 36 1	1 42.5 2 4 4 229.5 44.5 2.5
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE Gnathodentex mossambicus Gymnocranius robinsoni Lethrinus lentjan Lethrinus miniatus	3 18 8 6 14 <b>66</b> 13 1 26	1 11.5 2 4 4 76.5 10.5 2.5 18	- 44 - - 72 23 - -	31 - - - <b>153</b> 34 - -	3 62 8 6 14 <b>138</b> 36 1 26	1 42.5 2 4 4 2 <b>29.5</b> 44.5 2.5 18
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal	3 18 8 6 14 <b>66</b> 13 1 26 5	1 11.5 2 4 4 76.5 10.5 2.5 18 19	- 44 - - 72 23 - -	31 - - - <b>153</b> 34 - -	3 62 8 6 14 <b>138</b> 36 1 26 9	1 42.5 2 4 4 229.5 44.5 2.5 18 29
Lutjanus fulvus Lutjanus gibbus Lutjanus kasmira Lutjanus monostigma Lutjanus rufolineatus Subtotal LETHRINIDAE Gnathodentex mossambicus Gymnocranius robinsoni Lethrinus lentjan Lethrinus miniatus Lethrinus nebulosus	3 18 8 6 14 <b>66</b> 13 1 26 5 2	1 11.5 2 4 4 76.5 10.5 2.5 18 19 2.5	- 44 - - 72 23 - -	31 - - - <b>153</b> 34 - -	3 62 8 6 14 <b>138</b> 36 1 26 9 2	1 42.5 2 4 4 229.5 44.5 2.5 18 29 2.5

FAMILY/Species	Central Division Catch		Western Division Catch		Total Catch	
<b></b> ,	No.	Kg	No.	Kg	No.	Kg
SERRANIDAE						
Cephalopholis argus	1	0.5	_	_	1	0.5
Epinephelus areolatus	15	6.5	_	_	15	6.5
Epinephelus dictyophorus	_	_	3	3	3	3
Epinephelus fario	_	_	1	6	1	6
Epinephelus Fuscus	14	17.5	_	_	14	17.5
Epinephelus hoedti	1	3	_	_	1	3
Epinephelus maculatus	7	7.5	_	_	7	7.5
Epinehelus microdon	4	6	_	_	4	6
Epinephelus morrhua/cometae		5.5	12	42	16	47.5
Epinephelus poecilonotus	_	_	4	23	4	23
Epinephelus sp.	_	_	1	7	1	7
Plectropomus leopardus	9	12	_	_	9	12
Plectropomus sp.	4	20.5	_	_	4	20.5
Variola louti	3	3.5	_	_	3	3.5
Subtotal	62	82.5	21	81	83	163.5
CARANGIDAE						
Carangoides compressus	3	3.5	_	_	3	3.5
Caranx ignobilis	11	88.5	1	11	12	99.5
Caranx lugubris	_	_	32	57	32	57
Caranx melampygus	2	7	1	3	3	10
Caranx tille	2	10	_	_	2	10
Elegatis bipinnulatus	1	4	_	_	1	4
Seriola rivoliana	_	_	6	38	6	38
Subtota1	19	113	40	109	59	222
SCOMBRIDAE						
Grammatorcinus bicarinatus	4	6	_	_	4	6
Scomberomorus commerson	3	15.5	2	11	5	26.5
Subtota1	7	21.5	2	11	9	32.5
THUNNIDAE						
Katsuwonus pelamis	1	2.5	14	31	15	33.5
Thunnus albacares	1	14	_	_	1	14
Thunnus obesus	-	_	11	70	11	70
Subtota1	2	16.5	25	101	27	117.5

FAMILY/Species	Central Division Catch		Western Division Catch		Total Catch	
	No.	Kg	No.	Kg	No.	Kg
SPHYRAENIDAE						
Sphyraena barracuda	45	109	_	_	45	109
Sphyraena forsteri	4	3	_	_	4	3
Sphyraena japonica	_	_	4	2	4	2
Sphyraena picuda	_	_	5	17	5	17
Sphyraena qenie	3	5.5	_	_	3	5.5
Subtotal	52	117.5	9	19	61	136.5
MISCELLANEOUS						
BELONIDAE						
Tylosurus crocodilus	1	0.5	_	_	1	0.5
COYPHAENIDAE						
Coryphaena hippurus	1	9	_	_	1	9
GEMPYLIDAE						
Promethichthys prometheus	1	1.5	12	18	13	19.5
HOLOCENTRIDAE					_	
Myripristis berndti	3	0.5	_	—	3	0.5
ECHENEIDAE						
Echeneis naucrates	1	1	_	_	1	1
UNIDENTIFIED FISH	—	_	2	8	2	8
Subtota1	7	12.5	14	26	21	38.5
SHARKS						
CARCHARHINIDAE						
Carcharhinus amblyrhynchos	_	_	3	95	3	95
Carcharhinus albimarginatus	5	154	1	50	6	204
Carcharhinus sp. poss. plumbe	us 1	15	_	_	1	15
Triaenodon apicalis	_	_	1	4	1	4
Galeus eastmani	_	_	3	40	3	40
SQUALIDAE						
Squalus megalops	_	_	5	69	5	69
HEXANCHIDAE						
Hexanchus griseus	3	30	-	—	3	30
UNIDENTIFIED SHARKS	1	1		_	1	1
Subtota1	10	200	13	258	23	458
TOTAL	350	789	386	1186	714	1975