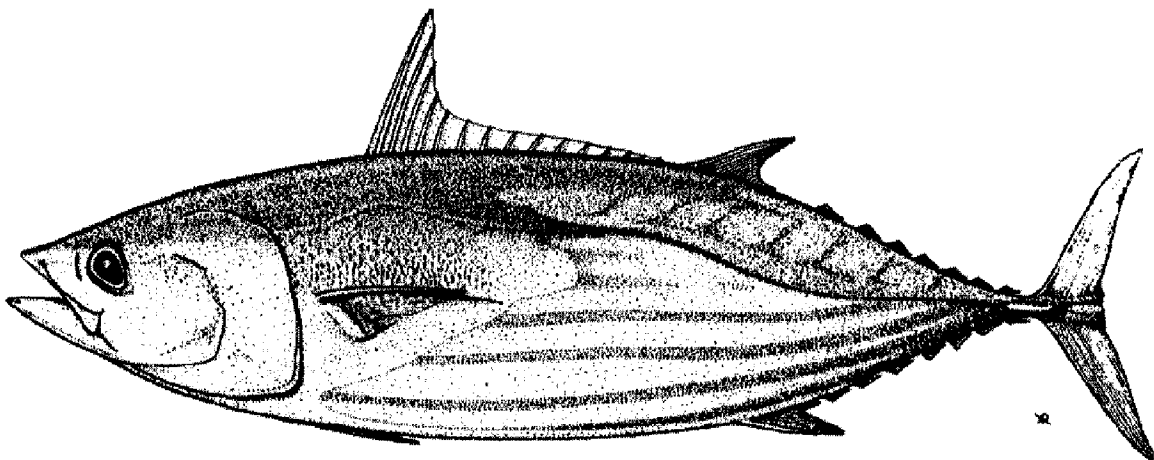




Tuna and billfish fisheries of Fiji's fishing zone



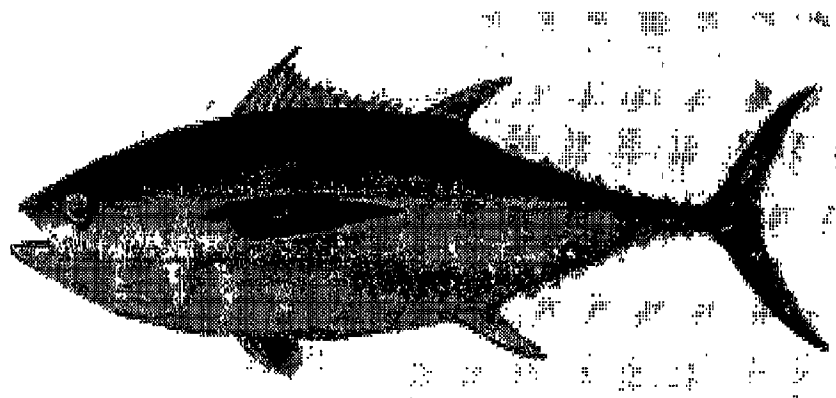
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Ministry of Agriculture, Fisheries and Forests. Fiji.

National Tuna Fishery Report 2000

TUNA AND BILLFISH FISHERIES OF FIJI'S FISHING ZONE

Background Paper presented to SCTB14 - 2001



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Summary

Catches recorded in Fiji are small compared to other Western and Central Pacific Fishing Zones. Tuna and Billfish seasons in Fiji are recorded to be running in the months of October to the early part of the year. Longline fishery increased in 2000 as a result of the change in the ENSO event in the Southern Hemisphere (*El Nino* to *La Nina*).

Annual catches for Fiji has been increasing very steadily in longline fishery. Only one pole and line vessel had been operating last year, 2000. Pole and line fishery has dramatically changed where most vessels have been refitted as a longliner and some has left the fishery completely. The longline catches increased in 2000 corresponding slightly to increase in the number of fishing vessels.

Foreign purse seiners, trollers and longliners have boosted PAFCO's supplies.

The work for the establishment of Tuna Management Plan has started and will be available at the end of the year.

Achievements

Last year (2000), the domestic longliners unloaded record catch of over 5000 metric tonnes of tuna and bycatch fetching sashimi market value of over F\$180 million compared to F\$150 million in 1999. With the change in weather pattern in the South Pacific, there is anticipation that 2001 will be a record year for this fishery.

PAFCO also had an increase in production last year (2000) with a total of 9970 metric tonnes decreased by 37% from the 1999 production. The decrease was mainly due to foreign longliners preference of unloading at Solomon Taiyo and Pagopago. With new management setup with opening for PAFCO under new marketing agreements, 2001 will be a challenging year for the cannery.

Overall, 2000 was a record season for tuna fishery in Fiji. This may have been linked to the shifting period between *El Nino* and the *La Nina* season, which fall during the last quarter of 1999 and the beginning of 2000.

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1.0 Introduction

The Fiji fishing zone is providing good fishing ground for tuna and billfish, because of easy access to the rich Northern waters and the Southerly ridge. The main fishing method used is longline, while pole and line fishing is conducted in a small scale with few artisanal trolling fishers targeting FAD's for the local market.

The Fisheries Division of the Ministry of Agriculture, Fisheries and Forests manages tuna and billfish fisheries in Fiji under the Fisheries Acts, Marine Spaces Act and a Cabinet Guideline on the EEZ and Offshore Fisheries. The long-term plan to put in place a tuna management plan for Fiji has started and it will be available before 2001 end.

This paper was prepared for presentation to SCTB14 at Noumea on August, 2001. It describes the methods used by Fiji fleets to catch tuna and billfish in the Fijian fishing zone, fishing fleet structure, catch records for five years (1996 – 2000), marketing of catches, onshore and future developments.

2.0 Tuna and Billfish Fisheries

The total amount of tuna landed in Fiji last year increased as predicted from previous year's record with marked increase observed in Longline fishery. The number of active vessels had been increasing marginally in longline fishery while pole and line fishery had been stagnant. The figure below shows the record total of local tuna fishing vessels for the last 5 years in the Fiji waters.

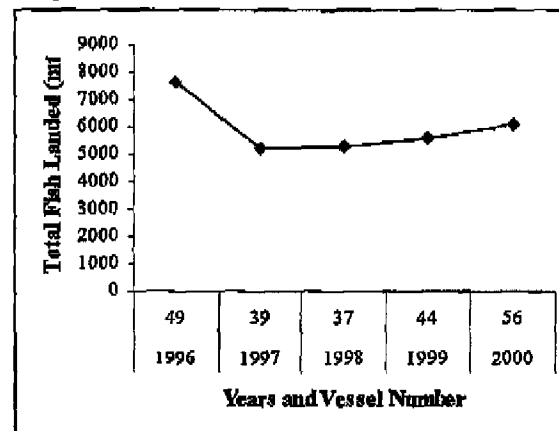


Figure 1: Comparison between numbers of Active vessels with Total fish landed in Fiji from 1996 – 2000

Last year the total number of vessels engaged in tuna and billfish fisheries to the end of December increased to 56 with the combined total of over 5000 metric tonnes of fish. From the 56 vessels engaged in tuna fishery last year, only one was a pole and line vessel. This year the number of vessel actively engaged in tuna fishery is increasing very steadily

and the trend indicates that more are engaged in longlining than pole and line. There is a likely increase in tuna landing this year due to this increase.

2.1 Fleet Structure

2.1.1 Longline

A range of vessels from 5GRT (10m) to over 200GRT (over 49m) supports the two method of fishing conducted in Fiji (Longline and Pole & Line). Table 1 below compares, the size of longline vessels to the average catches it landed for the last five years. This was calculated from the total catch of each vessel in a year average to the number of boat of each size class.

Table 1: Average Catch of each longline Vessel size for the period 1996 – 2000 (metric tonnes)

Vessel GRT	1996		1997		1998		1999		2000	
	No.	Av. Cat	No.	Av. Cat	No.	Av. Cat	No.	Av. Cat	No.	Av. Cat
5-20	6	46.5	4	46.8	4	47.8	3	51.4	2	31
21-40	9	37.2	7	121.1	9	45.9	3	110.1	5	68
41-60	11	147.4	10	114.6	10	156.3	12	114.1	9	94.6
61-80	4	176.7	3	173.2	4	179.3	8	193.7	18	115.6
81-100	4	100.6	2	324.5	3	243.7	4	220.9	11	111.6
101-120	5	100.9	1	137.0	2	145.9	1	129.2	3	49.1
121-200	2	60.9	0	0	2	67.5	4	117.3	3	33.6
>200	2	185.5	2	121.5	5	136.7	2	84.3	4	70.6

These vessels have different fishing powers as far as hook number is concerned and therefore have different catch rates. The number of hooks has been increasing and resulted in different catch rates for each year.

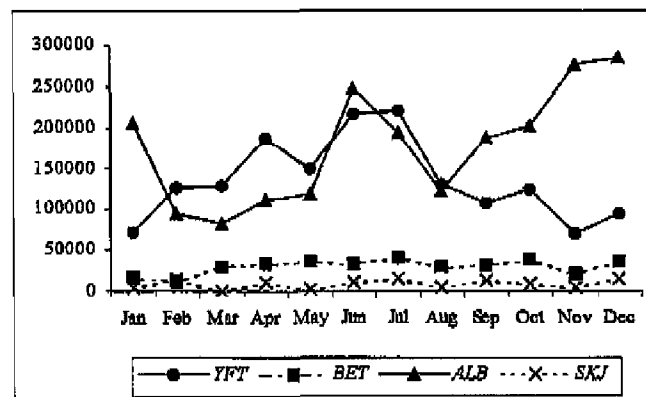


Figure 2: Tuna Species by month for local Longliners in 2000

In 1998 - 1999 the average cpue of local longliners ranges from 0.4 to 0.9 kg per hooks per boat from January to December. For the previous years catch rates fall from 0.2 to 0.7 in 1996 to 1997, remaining again in 2000 to the previous level 0.4 to 0.9. Table 2 below shows the total number of tuna related to fish caught from local longliners during the period 1996 - 2000.

Table 2 shows the total fish caught in Domestic Longliners from 1996 - 2000

Years	Active Vessels	Number of Trips	YF	BE	ALB	OT	Total
1996	42	381	1375.59	593.4	1446.48	1060.06	4475.53
1997	34	365	970.30	408.75	1841.73	1035.35	4256.13
1998	39	307	862.24	459.58	2121.27	1358.49	4801.58
1999	43	658	725.34	462.09	2279.38	1589.21	5056.03
2000	55	867	1621.45	357.68	2123.52	1625.52	5728.18

Breakdown of tuna and billfish caught during the period is attached for information in Appendix 1.

The Fisheries Division closely monitors fishing log sheets and unloading catch returns. Export licenses are issued for export and is recorded. These information papers are copied and sent to PC for the regional database. The port samplers in Suva and Levuka are also collecting data for PC and assisting Fiji fisheries in provision of data.

2.1.2 Pole and Line

This fishery started in the 80's during the initiation period for the cannery at PAFCO. Unfortunately, it had died down very slowly resulting in continuous breakdown of operation in our cannery. The low cost of fish offered by the cannery was not on par with other regional cannery, and the fishing operation was affected thus some fishing boats were altered to the longliner fleets while others were phased out of operation.

For the last 5 years, the number of boats was decreasing very steadily until 1998 and last year when only one vessel was the only survivor. This boat came back into operation in December 1997 and it is still operating today. Below are the records of these fishing vessels for the period 1995 - 1999.

Table 3: Catch unloaded from Pole and Line Vessels from 1996 - 2000 (mt)

Year	Active Vessels	No. of Unloading	Yellowfin	Bigeye	Albacore	Skipjack	Others	Total
1996	7	59	163.6	0.7	0	3123.5	0	3287.8
1997	5	84	46.4	0.02	0	986.7	0	1033.2
1998	1	10	6.6	0	0	458.7	0	465.3
1999	1	23	0	0	0	507.09	0	507.09
2000	1	25	1.7	6.5	0	342.8	0	351

Another factor that affected this fishery was the baitfish operation where the Customary Fishing Right owners are demanding compensation for the rights of usage that are given to the Fishing companies.

To date PAFCO has been unloading raw materials from foreign longliners that are licensed in Fiji, US trollers and foreign purse seiners. Some local longliners are also supplying the cannery with albacore via reefer containers.

This fishery (Pole and Line) is closely monitored by collection of log sheets and unloading records from the cannery. These data are copied and sent to PC for the regional database.

2.1.3 Foreign Longliners

The Division had allocated 20 spaces to licensed foreign longliners to unload their catch at PAFCO. Taiwanese vessels firstly occupied this space but later when they had opted to unload at Pagopago, some space had been given to Korean vessels. In early 1999, only 2 licenses were issued to CKP. Below are the records of the unloading that was conducted in 1995 – 1999 for all foreign vessels (licensed and unlicensed).

Table 4: Catch of Foreign Longliners during 1996 – 2000

Year	Active Vessels	No of Unloading	Yellowfin	Bigeye	Albacore	Skipjack	Others	Total
1996	22	38	0	0	2043.3	0	247.5	2290.8
1997	18	29	0	0	2999.2	0	128.1	3127.3
1998	35	50	0	0	5051.6	239.2	3.4	5294.2
1999	18	30	0	0	1649.3	0	0	1649.3
2000	29	40	0	0	4495.7	12.7	110.1	4618.5

There is a substantial increase in foreign vessel landings at PAFCO as it is offering good and competitive market price. The Port Sampler at PAFCO collects Log sheets and unloading forms from these boats and the cannery. These data were later sent to PC for the regional database.

2.1.4 Total Allowable Catch – Provisional

Using a precautionary approach in managing tuna fishery, TAC (Total Allowable Catch) was considered by management, and below shown in Tables 5 and 6 are performance of the two fishery on the four main tuna species.

Table 5: Local Longline catches with TAC

Year	Active Vessels	Yellowfin		Bigeye		Albacore	
		TAC	Catch	TAC	Catch	TAC	Catch
1996	42	2000	1303.7	2000	439.2	3000	1184.1
1997	34	2000	963.2	2000	403.6	3000	1749.8
1998	39	2000	862.2	2000	459.6	3000	2121.3
1999	43	2000	725.3	2000	462.1	3000	2279.4
2000	55	2000	1621.4	2000	357.7	3000	2123.5

Bigeye had a dramatic increase in 1996, decreased slightly in 1997 increased again 1998 and continues to do so until last year. Albacore is still increasing every year and has reached over two-third of TAC last year. Yellowfin is still decreasing steadily since 1996.

Table 6: Pole and Line catches with TAC

Year	Active Vessels	Yellowfin		Bigeye		Skipjack	
		TAC	Catch	TAC	Catch	TAC	Catch
1996	7	1500	163.6	NA	0.7	8500	3123.5
1997	5	1500	46.4	NA	0.02	8500	986.7
1998	1	1500	6.6	NA	0.0	8500	458.7
1999	1	1500	0	NA	0	8500	507.1
2000	1	1500	1.7	NA	6.5	8500	342.8

The data illustrated above has assisted managers in making decisions that there is room for increase in fishing efforts for both fisheries in Fiji. However, it will have to monitor the operation of each fishing vessel very closely in future, if new vessels were introduced.

2.2 Trolling – FAD

Fishers that are targeting FAD (Fishing Aggregation Device) are selling their catches in the local markets for processing at new canneries and for the "tataki" market in Japan until May when the operation ceased. The Government has engaged itself under the ADP programme for the deployment of FADs around Fiji since 1998, last year to the year 2001. This intensive programme will be of benefit to local fishermen and the commercial fishing operators.

The FAD fishers are also monitored very closely by collection of their catch records on data sheets provided.

The revival of FAD fishing programme has been projected to assist in supplying of raw materials to PAFCO in future. Today this method of fishing has proved successful and the fishermen are now supplying premium sashimi tuna to local processors for the Japanese market.

3.0 Marketing of Catches and Bycatches

Fiji's main export market is Japan and the US. Billfishes are exported to the US and Japan with equal amounts, while the US gets more than 50% of fresh tuna.

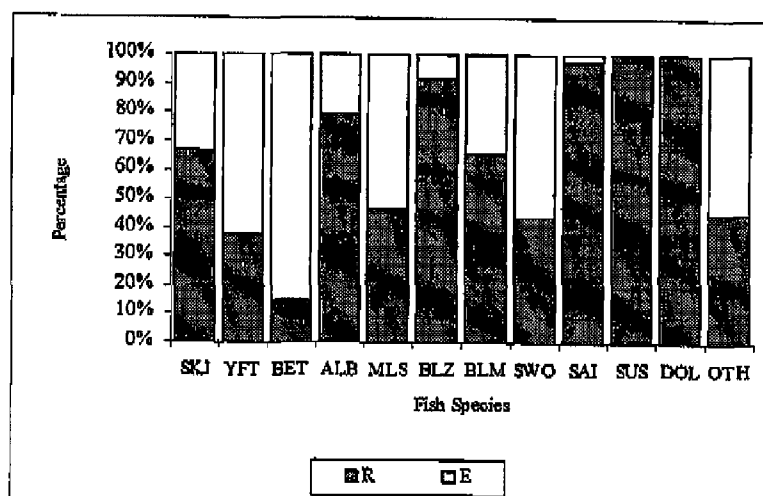


Figure 3: Fiji Longline Catches Exported compared to those that are Retain for local market in 2000

Albacore and Skipjack are either processed at the local cannery (PAFCO) or exported to Pagopago. By-catches and other damaged fish are sold locally at supermarkets, restaurants or directly to consumers.

Exporters in Fiji are also exporting loins to the EU in small amount.

4.0 Onshore Developments

4.1 Transshipments

Suva is the only transshipment port in Fiji and has been busy for the past years accommodating foreign vessels that come into port. Vessels that are transshipping tuna and billfishes in Fiji offload their catches to mother ships that transport the fish to Japan, Korea, Taiwan or Pagopago. In 1999, more than 10,000 tonnes of tuna and billfish went through Fiji, but last year it increased to more than 12,000 tonnes. Appendix 2 shows the breakdown of tuna and billfish species that were transshipped through Fiji.

Observers were employed to conduct transshipments and sampled tuna species for OFP – Pacific Community (Regional Database). Catch logs were also sent to PC for all transshipment that was conducted.

4.2 Future Prospect and Developments

The future of the tuna industry in Fiji looks bright because of developments that had been boosted by the Government's programme under ADP Scheme. The upgrading of the fishing port at Lami has increased the turn around time for local vessels, resulting in increase in catch and production for longline vessels. Under this programme, a new National Tuna Management Plan will be set up of with various new offshore development will be the main focus. Improvement of the onshore infrastructure facilities, new designed fishing fleets that will suite our water and assistance to existing local master fisherman to acquire fishing boats are some developments that have already been initiated.

The revival of the skipjack fishery is already on the way as the small-scale fishermen are supplying local processors with premium sashimi tuna for foreign market. This will be intensified next year as the Government supports this fishery for the locals.

Plan for the development for the new fishing port complex for Suva had been ongoing between Fiji and the Government of Japan. This development hopes to cater for all fishing vessels in the Suva area but it is still on hold until the situation in Fiji normalizes.

Appendix 1: Breakdown of tuna species and billfishes for local longline between 1996 - 2000 (mt)

Years	YF	BE	ALB	BFT	MAR	BLZ	BLM	MLS	SWF	SAI	SKJ	SHK	OTH	Total
1996	1375.6	593.4	1446.5	0.2	15.5	161.2	10.4	75.3	166.9	44.1		1.6	584.4	4475.1
1997	970.3	408.7	1641.7			209.1	40.3	88.9	78.0	70.2	7.7	0.0	541.2	4256.1
1998	862.24	459.58	2121.27	0.18	0	198.07	38.48	202.61	91.76	100.04	30.51	0.154	696.73	4801.6
1999	725.3	462.1	2279.4	0	0	324.2	43.8	217.5	104.4	126.5	31.1	0	741.7	5056.03
2000	1621.45	357.68	2123.52	0	0	317.83	53.08	224.12	110.95	75.60	100.02	0	743.88	5728.18

Appendix 2: Breakdown of tuna species and billfishes transshipped in Fiji Ports in 2000 (mt)

Year	YF	BE	ALB	SWO	MLS	BLZ	SHK	SAIL	OTH	TOTAL
1999	73.1	786	7806	150	181.7	300	633	4.5	661.2	10,595.5
2000	89.5	836	8560	330	200.6	520	885	10.6	899.5	12,031.2