

TUNA FISHERIES IN FRENCH POLYNESIA NATIONAL FISHERIES REPORT

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1. BACKGROUND INFORMATION

French Polynesia has a wide Exclusive Economic Zone (EEZ), established in October 1979, stretching over 4.8 million km² in the South Pacific, in which most species of tropical tunas and tuna-like species are fished.

There is a long tradition of coastal tuna fishing in French Polynesia. Historically, fishermen in canoes have fished for deep-swimming tunas, using handlines made of vegetable fibers, hooks made of wood and mother-of-pearl, and chunks of fish or live fish for bait. Sinking the line was achieved with a stone, around which the line was initially coiled. This "stone fishery" is still active, using modern lines and hooks, generally close to fish-aggregating devices (FADs) moored in the vicinity of the larger islands (Moarii and Leproux, 1996), but tuna holes are sometimes fished as well.

Alongside this modernized traditional fishery, a fishery targeting skipjack, using locally-built bonito boat called bonitiers, has developed since World War II, with much success (Brun and Klawe, 1968). The fishing method used is a jigline rigged with a barbless hook tied on a traditional lure made of mother-of-pearl. This fishery was the most important supplier of tuna for the local market for several decades, but since 1991 the development of monofilament longlining has caused it to decline. Currently the number of active bonitiers has stabilized around 60 to 70 units due to the stabilization of the local skipjack market.

The use of monofilament longlines started in 1990/1991 and was first adapted to existing multi-purpose 15 m to 17 m fishing vessels. French Polynesian longliners are now of various sizes, with the largest over 25 m. Such large vessels can set 1,500 to 3,000 hooks per day, and can stay at sea for nearly two months. This fishery developed rapidly, favored by strong demand in local fresh-fish market. The main targets are yellowfin, albacore, bigeye and billfishes. Very few experimental fishing for swordfish at night, setting the longline close to the surface, have been successful.

Distant water fishing nations longliners, mainly Japanese and Korean, operate under licence in French Polynesia EEZ. Since 1992 the Japanese fleet has not applied for licenses, so only Korean longliners operate currently.

2. TOTAL CATCH

Since two years, data collecting has improved and the best estimates are given in table 1. The figures represent the total catch by fleet from 1975 to 1997. Five fleets are operational : bonito boats (bonitiers), coastal crafts (poti marara), domestic longliners, trollers and DWFN's longliners. The artisanal fleet (bonitiers and poti marara) used different fishing techniques including pole and line, trolling, deep handline, harpoon and scoop. Trollers are domestic longliners converted to trolling during albacore season in the 40° S.

During the 70's and 80's, DWFN's longlining, were predominant representing more than 50% to nearly 80% of the total catch. Actually within this period little was known about the coastal fleet as only data from the bonito boats and foreign vessels were collected. Presumably the activity of the coastal fleet was not important compared to the two other fleets.

With the fishing development plan implemented at the end of the 80's, domestic longlining and coastal fleet have developed through investment facilities, deployment of FAD's and installation of diesel engine in coastal crafts. Consequently, the domestic catch has increased from 1990 while the catch for foreign vessels has steadily decreased mainly due to the fact that Japanese vessels suspended their activities in 1992. The catch of the Korean vessels remains stable around 2000 tons managed by bilateral fishing agreements.

TABLE 1: Historical series of tuna catches, in metric tons, in the French Polynesian EEZ.
J: Japan ; K: Korea, T: Taiwan.

Year	Landings of skipjack and small tuna by <i>Bonitiers</i>	Total catch by French Polynesian longliners	Albacore trolling in the 40°s	Total catch by coastal crafts <i>Poti marara</i>	Total catch by foreign longliners	Countries	Total catch All fleets
1975					7044	J, K, T	7044
1976	1521-1902				7264	J, K, T	8785 - 9166
1977	1774-2218						1774 - 2218
1978	2649-3313						2649 - 3313
1979	805				1945	J	2750
1980	1312				2944	J	4256
1981	1468				4726	J, K	6194
1982	1557				2631	J, K	4188
1983	1491				1423	K	2914
1984	2344				2018	J, K	4362
1985	1623				4774	J, K	6397
1986	1356				4293	J, K	5649
1987	1536				4467	J, K	6003
1988	1314				5187	J, K	6501
1989	1370				2901	J, K	4271
1990	1667	55	299	208	4232	J, K	6461
1991	1604	530	326	371	5541	J, K	8372
1992	1460	820	72	221	2305	K	4878
1993	979	2400	45	197	1192	K	4813
1994	1229	2653	0	340	2131	K	6353
1995	1611	2455	183	370	2049	K	6668
1996	1126	3373	69	575	2074	K	7217
1997	934	4636	24	678	1737	K	8009

Sources: Josse *et al.*, Rapport ECOTAPP (1995); EVAAM, SRM, Direction des Affaires Maritimes, Chabannes *et al.* (1993).

Globally the total catch for all fleets in the EEZ varied from 2000 to 9000 tons between 1975 and 1997 but has not considerably increased in the recent years compared to the catch of the 70's to the 80's. This variation has two main reasons :

- activity of the foreign fleets which was high before 1992 and lower since that period ;
- activity of the domestic vessels which was low before 1992 and increased steadily since 1990. With the suspension of the Japanese fishing agreement, the catch of domestic fleets has exceeded the DWFN's catch since 1993 (Figure 1) and represented roughly 80% of the total catch in 1997.

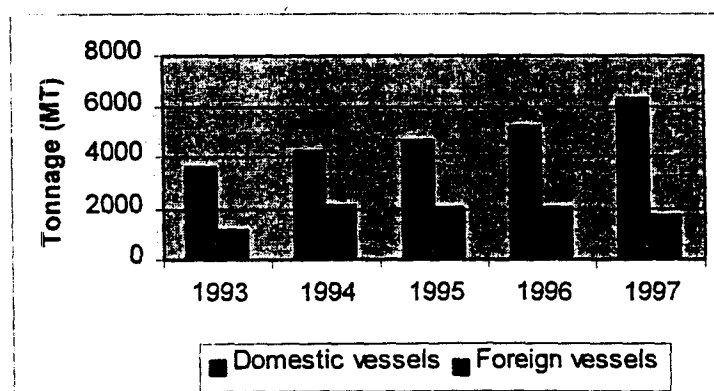


FIGURE 1 : Total catch, all species, by domestic longliners and DWFN's vessels

Actually, there's an important change in the origin of the catch with the substitution of the foreign vessels activity by the domestic vessels. This trend is likely to be confirmed in the future.

3. FLEET STRUCTURE

Table 2 presents the number of active vessels in the EEZ from 1990 to 1997.

The number of foreign vessels remains stable around 50 to 60 vessels depending on the results of the fishing agreements which start from 1st of October to 30th of September each year. For the 1997/1998 season, 56 longliners have applied for a license to fish in French Polynesian waters.

The domestic longline vessels are all owned by local fishermen or companies. In 1997, there was 75 vessels operating but only 60 of them were active. After the feverish start of the longline fishery in the early 90's, the activity has now been stabilized with more effective vessels and professional crews. With regard to the future prospects, the number of domestic longliners should increase in the next few years.

TABLE 2 : Number of active vessels in French Polynesia EEZ from 1990 to 1997. Figures for foreign vessels from 1994 are number of licensed vessels

Year	French Polynesia Pole and line	French Polynesia Coastal fleet	French Polynesia Longline	Foreign fleets
1990	118	100	3	
1991	106	104	8	
1992	100	106	25	63
1993	70	152	50	50
1994	70	155	66	64
1995	77	159	65	46
1996	75	160	59	64
1997	70	166	60	56

The pole and line activity (bonitiers fleet) has decreased firstly in the favor of the longline fishery. But the fishermen have no longer accepted that these vessels were not adapted to longline fishing. Some of them returned to pole and line fishing. Currently, this activity is in competition with the coastal crafts (poti marara) which are more polyvalent, costless and produced better value fish.

4. CATCH BY SPECIES AND FLEET

Due to the diversity of the fishing techniques used by the artisanal fleets and the inaccuracy of the former data, the catch composition by gear type was unknown until 1997 for these fleets. However the bulk of the catch of skipjack and small yellowfin is mainly due to pole and lining by the bonito boats and trolling by the coastal boats. The catch of other tuna species and large yellowfin (>20 kg) by artisanal fleets are mainly from deep handline technique.

The catches of the main species by fleet are presented in table 3 (annex). The catch of albacore by domestic longliners has strongly increased, nearly 65% more, between 1996 and 1997, for mainly two reasons :

- the good CPUE for this species ;
- the species has been specifically targeted for export market.

The catch of bigeye tuna has also increased in high proportion, 66%, but the total weight is still low, 310 tons compared to the foreign vessels catch, 1078 tons, in 1997.

Regarding the other species, the catches are still approximately at the same level than in 1996.

5. MARKET PROGRESS

The local market which was booming since 1991/1992 is now nearly saturated. Slight increase of this market should be obtained within the next few years by promoting tuna consumption. However, in spite of the high consumption of tuna by the local people, the total current and expected cannot be sold exclusively on the local market which reached and stabilized around 4000 tons in 1996 and 1997. The alternative proposed to the fishermen to further develop the fishing industry is the export market.

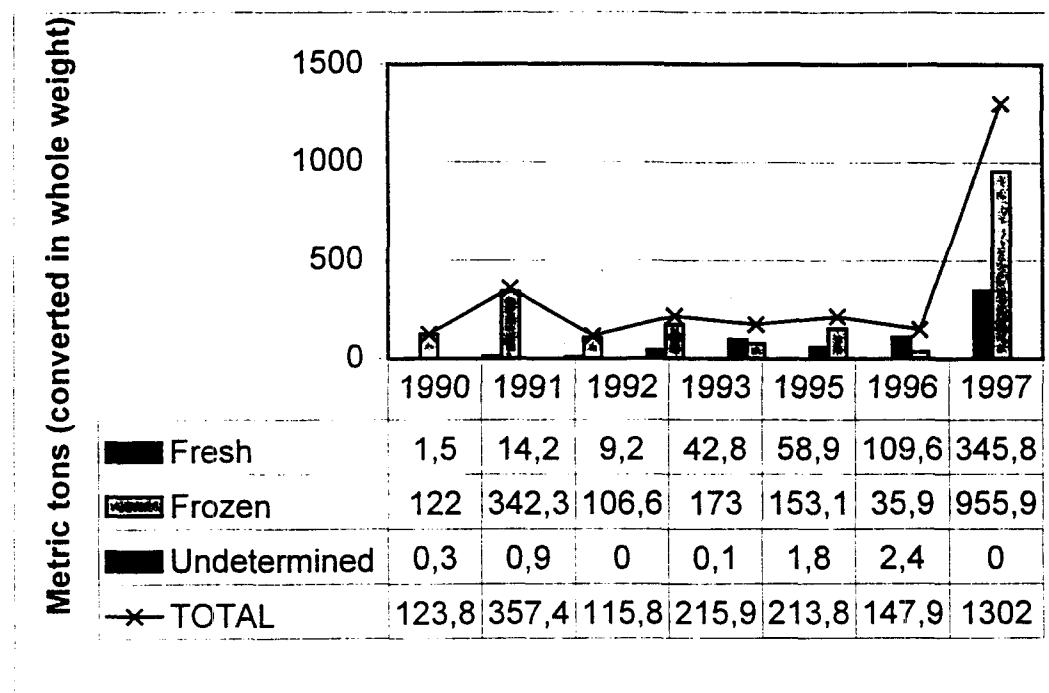


FIGURE 2 : French Polynesia total export by domestic longliners

In 1997, the tonnage exported has strongly increased to 1300 tons, in weight converted to equivalent whole tunas. The main destinations are :

- United States for fresh tunas (mainly albacore) and frozen loins (albacore and yellowfin)
- American Samoa for frozen albacore
- Western Samoa for frozen albacore
- France for frozen albacore and loins.

The bulk of exported fish is mainly albacore. Actually, the other tuna species are locally consumed as the yellowfin and bigeye get very good price on the local market and the skipjack is a traditional meal in the Polynesian families.

6. ONSHORE DEVELOPMENTS

Important investments in port facilities have been made in the past five years. In 1997 two cold rooms have been set up in the airport area to facilitate the export of fish. With the application of the international sanitation rules a great effort has been made in 1997 and continues in 1998 to adapt the commercial structures and the fishing vessels to the international standards.

TABLE 3 : Transshipments of tuna and tuna-like species (in metric tons) by foreign vessels in French Polynesia

Year	Japan	Korea	U.S.A.	Taiwan	Total
1992	2220	4958	218	51	7447
1993	545	1699	7	-	2251
1994	350	7756	2095	-	10201
1995	1060	7997	-	-	9057
1996	-	1947	-	-	1947
1997					

The figures include transshipments at port and unloading of miscellaneous catch for a private company that re-exports the fish. The major part of the transshipments are from Korean longliners. All the catches are from longliners excepted for the U.S. which is trolled albacore catch.

7. CONCLUSION AND PROSPECTS

The local authorities have fixed the objective of producing 11 000 metric tons of tunas and tuna-like species by the local fleets (traditional and longline fleets). In the next few years, new longliners, 24 units of 13 meters in replacement of the bonitiers used for longlining, and 10 units of 26 meters, should be built to supplement the current fleet and to reach the objectives. This plan is economically ambitious and costly investments have been implicated. Regarding the small potential of the local fresh market due to the small population, in spite of a big consumption of tuna per inhabitant, a large part of the production should be exported. The exportation objective is fixed at a level of 6000 to 7000 metric tons in 2003/2004.

Exportation means that the products meet the high standard of quality of the international market. To this end, two complementary options have been identified :

- targeting the species during fishing operations to satisfy the demand of various markets. This is one the objectives of the ongoing research program on the behavior and ecology of different species of tuna, ECOTAP ;
- the second option is to satisfy the sanitation rules of the international markets, HACCP for the United States and European standards and "own-check" system for European Community.

New port facilities including an export building for frozen products and a wholesale building for fresh fish at international standards will be set up in 1998 and 1999.

The prospect of 11000 tons seems to be reasonable with regard to the result of the stock assessment approached in the 80's and also to the economical factors of the country. Compared to the quantity of fish caught in other part of the region, the prevision is low. Actually the main targets of the development plan is to produce quality fish that will get high price in the export market and to increase the local market of fresh tuna.

To reach these objectives, training programs, market studies and processing plan have to be developed to support the fishing industry. All these aspects have been engaged in the tuna fishery development plan of French Polynesia. They concern :

- training courses for fishermen, captains of fishing vessel
- specialized courses on fish handling, sanitation rules
- market studies in the U.S., Europe and Asian countries
- processing projects on high value products (smoked products, delicatessen), utilization of the wasted parts of fish.

All these projects will be conditioned by one fundamental aspect : the availability of the tuna stocks which has to be secured. Regarding the geographical situation of French Polynesia, the tuna stocks transiting through the EEZ are likely under influence of both western and eastern pacific fisheries. As a result of this

situation, French Polynesia has to be involved in both regional fisheries management discussions. However, the objectives of the fishery development will be maintained.

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Table 3 : Estimated catches by main species and fleets from 1993 to 1997

Y E A R	FLEETS ¹	DOMESTIC VESSELS									FOREIGN VESSELS							
		Active vessels ²	TUNAS				BILLFISHES		Miscellaneous		TOTAL	Days fished ³	TUNAS				Other	TOTAL
			Skipjack	Yellowfin	Bigeye	Albacore	Marlins	Swordfish	Sharks	Other ⁴			Skipjack	Yellowfin	Bigeye	Albacore		
1993	Bonitlers	70	665	236	0	2	15	0	0	61	979							
	Poti marara	140	23	44	-	19	21	0	-	90	197							
	Albacore trollers	4				45					45							
	Longliners	50	25	366	163	714	300	64	325	443	2 400	1117	-	303	634	100	155	1 192
	total 1993	260	713	646	163	780	336	64	325	594	3 621	1117	-	303	634	100	155	1 192
1994	Bonitlers	70	1 004	161	0	3	18	0	0	43	1 229							
	Poti marara	145	36	94	-	52	28	0	-	130	340							
	Albacore trollers	0				0				0	0							
	Longliners	68	43	275	165	913	488	72	420	277	2 853	2019	-	532	1 231	133	235	2 131
	total 1994	281	1 083	530	165	968	534	72	420	450	4 222	2019	-	532	1 231	133	235	2 131
1995	Bonitlers	77	1 250	308	-	3	12	0	0	40	1 811							
	Poti marara	147	100	120	1	56	22	0	-	71	370							
	Albacore trollers	4				183					183							
	Longliners	65	10	297	182	772	524	61	365	244	2 455	2412	-	328	1 336	121	264	2 049
	total 1995	289	1 360	723	183	1 014	558	61	365	355	4 619	2412	-	328	1 336	121	264	2 049
1996	Bonitlers	75	945	126	-	4	14	0	0	37	1 128							
	Poti marara	160	120	155	2	100	55	0	-	143	575							
	Albacore trollers	4				69					69							
	Longliners	59	26	380	184	1 463	551	84	387	298	3 373	1865	-	911	879	104	180	2 074
	total 1996	294	1 091	661	186	1 636	620	84	387	478	5 143	1865	-	911	879	104	180	2 074
1997	Bonitlers	70	698	142	-	9	15	0	0	70	934							
	Poti marara	166	176	99	2	69	32	0	-	300	878							
	Albacore trollers	1				24					24							
	Longliners	60	22	420	308	2 595	521	56	367	347	4 836	1598	-	428	1 078	49	182	1 737
	total 1997	296	896	661	310	2 697	568	56	367	717	6 272	1598	-	428	1 078	49	182	1 737

¹ Bonitlers and poti marara use several fishing methods :

Bonitlers : pole & line, trolling, deep handline, harpoon

Poti marara : harpoon, trolling, deep handline, scoop (flying fishes), pole & line, spearfishing.

² Albacore trollers are longliners out of albacore season, they are included in active longliners..

³ Days fished is a more convenient estimate for foreign vessels

⁴ Mahimahi, opah, wahoo, flying fishes, pomfrets, etc.