

NATIONAL REPORT OF KOREA

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KOREAN TUNA FISHERIES IN THE INDIAN OCEAN

Fishing vessels

The Korean tuna fishery in the Indian Ocean began in 1957 with one fishing vessel. Year by year Korea expanded its tuna-fishing fleet, which consists exclusively of longliners, to 185 vessels in 1975, followed by a decrease in successive years to 19 vessels in 1991. Since 1992 about 50 Korean tuna longliners have been active each year in the Indian Ocean (Table 1).

Annual catches

Annual catches of tunas and tuna-like species caught by Korean longliners in the Indian Ocean have shown a decreasing trend since the peak of 71,123 t in 1978, attributable to the decrease in the number of vessels. The lowest catch was recorded in 1991, when the fleet was very small, consisting of 19 longliners. During the 1990-1994 period the annual catch ranged from about 6,000 to 15,000 t. In 1994 the total Indian Ocean catch of tunas and tuna-like species amounted to 14,913 t, a slight increase over the previous year.

Catches by Korean longliners in recent years consisted of 47% bigeye 36% yellowfin, and 11% billfishes, on average (Table 2). The proportion of bigeye tuna increased from 34% in 1991 to 55% in 1994, whereas that of yellowfin decreased from 49% in 1991 to 24% in 1994. In 1994, bigeye and yellowfin tunas, which are the major target species for the Korean longline fishery, accounted for 79% of the total catch. The remaining 21% consisted mostly of other tunas and billfish species which were reported as unidentified by the fishermen. Compared to 1993, the yellowfin catch decreased by 23%, while the bigeye catch increased by 15%.

Fishing grounds and CPUE distribution

Until the late 1960s the Korean longline fishery was limited to a very small area of the Indian

Ocean. From the early 1970s, however, the fishing grounds were extended rapidly to cover almost the entire tropical area of that ocean. There were no significant inter-annual shifts in fishing area for the longliners, which usually fish between 20°N and 30°S (Figure 1).

The catch per unit of effort (CPUE) of the Korean longline fisheries in the Indian Ocean has shown inter-annual variation, ranging from 1.0 to 1.8 fish/100 hooks during 1980-1994 (Table 3). CPUE of all species showed an increasing trend until 1987 but decreased thereafter. During the 1992-1994 period, CPUE decreased continuously, due to the decrease in yellowfin CPUE. In contrast, bigeye CPUE appeared to be fairly stable around 0.5 fish/100 hooks.

RESEARCH ON TUNAS

Research on tunas and tuna-like species is being carried out by the National Fisheries Research and Development Agency (NFRDA). The research focuses on tuna fisheries and biology, and is based on catch and effort data as well as length-frequency data collected from commercial fishing vessels. Fisheries and biological data are also gathered by NFRDA scientists working aboard Korean tuna-fishing vessels. The data collected from fishing

Figure 1. CPUE (no./100 hooks) for the Korean longline fishery.

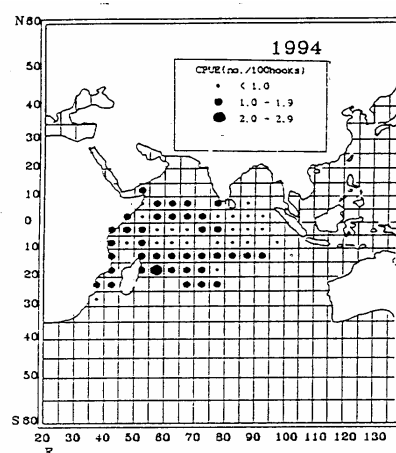


Table 1. Catches (t) by the Korean tuna longline fisheries in the Indian Ocean.

<i>Year</i>	<i>No. of vessels</i>	<i>Total</i>	<i>Bluefin tuna</i>	<i>Yellowfin tuna</i>	<i>Albacore tuna</i>	<i>Bigeye tuna</i>	<i>Skipjack tuna</i>	<i>Other tunas</i>
1980	174	38,085	-	12,537	1,582	18,690	43	217
1981	142	36,138	-	11,777	709	18,871	48	118
1982	146	42,531	6	18,654	399	18,949	57	337
1983	115	36,975	-	15,337	274	16,651	8	252
1984	75	24,613	1	9,895	254	11,481	396	-
1985	62	28,185	-	12,017	324	12,438	-	985
1986	66	30,639	-	14,891	171	11,397	-	822
1987	81	30,904	-	12,575	221	13,862	-	1,093
1988	112	34,469	-	13,428	115	16,509	12	1,259
1989	87	23,610	-	8,103	55	11,698	1	896
1990	77	20,335	-	7,006	-	10,313	0	751
1991	19	6,181	-	3,004	-	2,124	-	222
1992	50	10,555	15	4,091	5	4,549	-	522
1993	50	14,438	-	4,681	4	7,146	-	796
1994	52	14,913	98	3,622	13	8,239	-	584

<i>Year</i>	<i>Swordfish</i>	<i>Blue marlin</i>	<i>Striped marlin</i>	<i>White marlin</i>	<i>Sailfish</i>	<i>Black marlin</i>	<i>Other billfish</i>	<i>Sharks</i>	<i>Other fish</i>
1980	236	716	255	277	156	-	1,273	237	1,866
1981	290	489	96	197	74	-	1,475	326	1,668
1982	191	326	59	129	54	53	1,656	170	1,491
1983	151	275	69	50	29	148	1,616	99	2,016
1984	68	104	97	20	1	97	1,666	69	464
1985	27	62	10	7	-	39	2,034	70	172
1986	6	16	109	-	-	4	2,678	11	534
1987	49	1	108	24	1	38	2,508	-	424
1988	78	16	82	19	-	6	2,448	7	490
1989	96	13	53	16	11	8	2,131	13	516
1990	52	2	11	4	-	3	1,802	-	391
1991	17	11	9	3	-	-	653	-	138
1992	60	32	-	1	6	2	1,045	12	215
1993	20	-	3	-	-	-	1,548	-	240
1994	17	3	2	-	-	-	2,003	-	332

vessels are compiled and, after statistical analysis, are submitted to international fisheries organizations or reported at meetings on tuna.

As part of an international cooperative project, we started tagging tunas in 1993 with a view to collecting data to be used in various fields of tuna research and management. From 1996 an observer program will be operated by the NFRDA to improve data collection and Korean fisheries statistics

Table 2. Species catch composition (%) for the Korean longline fishery in the Indian Ocean

<i>Year</i>	<i>Bigeye tuna</i>	<i>Yellowfin tuna</i>	<i>Billfish</i>	<i>Others</i>
1990	50.7	34.5	9.9	4.9
1991	34.4	48.6	10.6	6.4
1992	43.1	38.8	9.9	8.2
1993	49.5	32.4	10.7	7.4
1994	55.2	24.2	13.4	7.2

Table 3. CPUE by Korean tuna longline fisheries in the Indian Ocean

<i>Year</i>	<i>All</i>	<i>YFT</i>	<i>ALB</i>	<i>BET</i>	<i>OTH</i>
1980	1.28	0.4	0.08	0.68	0.12
1981	1.47	0.6	0.07	0.67	0.13
1982	1.6	0.79	0.03	0.65	0.13
1983	1.38	0.63	0.05	0.6	0.1
1984	1.32	0.55	0.03	0.58	0.16
1985	1.49	0.68	0.05	0.59	0.17
1986	1.73	0.87	0.07	0.61	0.18
1987	1.78	0.79	0.05	0.72	0.22
1988	1.49	0.66	0.04	0.64	0.15
1989	1	0.41	0.02	0.44	0.13
1990	1	0.38	0.02	0.48	0.12
1991	1.38	0.7	0.02	0.45	0.2
1992	1.42	0.61	0.04	0.58	0.2
1993	1.2	0.46	0.02	0.52	0.2
1994	1.08	0.31	0.03	0.54	0.2

