Review of Korean SBT Fishery

Ministry of Maritime Affairs & Fisheries
Republic of Korea

Introduction

Southern bluefin tuna (SBT) fishery is the most recently developed tuna fishery by Korean distant-water fishing industry. The SBT catch made by Korean longline fleet reached a maximum in 1998, followed by continuous decrease until 2005. Species composition of the catch shows that target species accounted for 17% in 2004 and 17.5% in 2005 of the total catch and remaining consisted of tunas, billfishes, sharks and other fish species. Korean longline fleet has voluntarily deployed a tori line to reduce seabird bycatch by longline fishing.

Review of SBT Fisheries

Fleet size and distribution

Korean SBT fishery commenced in 1991 with a few longliners shifted from tropical waters where they targeted bigeye and yellowfin tuna. Thus, in the early years of this fishery, SBT did not attract Korean fishing industry, but because of higher market price number of longliners rapidly increased to reach a maximum fleet size of 19 longliners in 1998. However, by the voluntary regulation of fleet size among fishing industries, annual fleet size for SBT fishery never exceeded 16 registered number since then and number of longline vessels active was 6 in 2004 and 7 in 2005. Annual number of fishing vessels for SBT largely depends on Japanese market price for SBT and fishing condition on the fishing grounds.

Distribution of catch and effort

Fishing season of Korean SBT longline fishery usually starts in March and ends by November or December. In the first half of fishing season from March to July or August, usually Korean longliners are fishing on the high seas of the western Indian Ocean off South

Africa, with occasional expanded operation to the southeastern Atlantic, while in the second half they move to the eastern Indian Ocean off the western Australia. This fishing pattern and fishing grounds have rarely been changed for the past 10 years of fishing history for SBT except for 1991, but in 2004 and 2005 some catches were also taken from the western and central fishing grounds until October.

In 2005, 7 out of 16 registered longliners fished for SBT and made a catch of 33 mt (reported as processed weight), showing a decrease by about 71% from 2004. This was mainly due to the shift of fishing ground and most of Korean longliners operated in the EEZ area of the Republic of South Africa for targeting bigeye and yellowfin tuna.

Catch per unit effort of Korean longline fishery for SBT has shown a decreasing trend from a peak at 8.4 fish/1,000 hooks in 1994. However, CPUE appeared to be more or less stable between 2.3 and 4.1 fish/1,000 hooks in recent years. CPUE in 2004 and 2005 decreased compared with that of 2003.

Fisheries Monitoring for each fleet

Fisheries statistics are collected and reported for a calendar year. Catch and effort data based on the logbooks are routinely collected through a fisheries data collection system which was lawful in 1977. According to this domestic regulation, distant-water fishing vessels have to submit the reports of their fishing operations within 30 days (home-based) or 60 days (foreign-based) after completion of their operations to the National Fisheries Research and Development Institute (NFRDI).

Korean government(MOMAF) initiated the fisheries observer program for distant-water fisheries including tuna fisheries in 2002. The purpose of this program is to meet the requirements of relevant regional fishery bodies and therefore the mission of trained observers are similar to those set out in the convention of the fishery bodies.

In 2004-2005, two observers were deployed on Korean SBT longline fishing vessel operating in the EEZ of South Africa and adjacent waters of Mozambique, respectively. Scientific observation continued for about two months starting from the mid-August 2004 and November 2005. During the trip, observers monitored catch of target and by-catch species. More observers will be deployed this year but in the case of SBT fishery scientific observation is now more difficult due to limited number of actual fishing vessels.

Seabird

According to fishermen, some bird species (unidentified) are usually encountered as they set longlines. However, no documentation on seabird bycatch has been available. During the

scientific observation trip, observers reported incidental catch of seabirds in spite of several on-board voluntary measures to avoid seabird bites such as hook-casting before dawn, tori line installing and defrozen baits, etc.

Other Non-target Fish

Sharks data are usually collected into a "shark" category because detailed on-board identification was difficult to fishermen without a good guide and knowledge in biology. According to fishermen's identification, it seems that blue sharks and mono sharks are dominant species among shark bycatch. During the scientific observation trip, blue sharks and mako sharks were dominant.

Table 1. Specise composition (%) of the Korean longline fishery targetting southern bluefin tuna

Year	Unit	SBT	ALB	YFT	BET	BUM	STM	SWO	SKJ	SHA	OTH	TOTAL
1998	**Weight**	320.7	11.5	3.0	10.6	0.7	0.1	6.0	0.1	3.8	0.0	338.4
	%	94.8	3.4	0.9	3.1	0.2	0.0	1.8	0.0	1.1	0.0	
1999	**weight**	564.4	5.9	103.5	4.3	0.9	0.5	5.9	0.0	4.9	0.2	690.5
	%	81.7	0.9	15.0	0.6	0.1	0.1	0.9	0.0	0.7	0.0	
2000	**weight**	234.3	5.6	0.2	1.3	0.0	0.1	1.0	0.0	0.8	0.0	243.3
	%	96.3	2.3	0.1	0.5	0.0	0.1	0.4	0.0	0.3	0.0	
2001	**weight**	333.2	1.4	0.0	0.6	0.0	0.0	0.0	0.0	27.0	39.2	401.5
	%	83.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	6.7	9.8	

2002	**weight**	592.9	21.2	6.1	31.6	0.3	0.0	10.0	0.0	2.9	9.6	674.6
	%	87.9	3.1	0.9	4.7	0.0	0.0	1.4	0.0	0.4	1.4	
2003	**weight**	96.3	16.7	92.3	11.6	0.2	0	3.3	0	0.4	0	220.8
	%	43.6	7.6	41.8	5.3	0.1	0	1.5	0	0.2	0	
2004	**weight**	80.3	72.2	71.9	205.7	3.4	0.5	23.6	5.5	8.3	0.9	472.3
	%	17.0	15.3	15.2	43.6	0.7	0.1	5.0	1.2	1.8	0.2	
2005	**weight**	17.5	45.5	184.9	113	0.5	0.5	9.3	0	3.0	0.4	374.6
	%	4.7	12.1	49.4	30.2	0.1	0.1	2.5	0	0.8	0.1	

SBT: southern bluefin tuna ALB: albacore tuna YFT: yellowfin tuna BFT: bigeye tuna BUM: blue marlin SWO: swordfish SKJ: skipjack tuna SHA: sharks OTH: other fishes

Marine Mammal and Marine Reptiles

No data is available for marine mammals or reptiles incidentally caught by Korean SBT longline fishery. During the scientific observation trip in 2004, 4 times of sighting of whales were recorded.

Mitigation Measures to Minimise Seabird and Other Species bycatch

Current Measures

Mandatory Measures for Each Fleet

Currently there are no mandatory measures taken by Korean Government to reduce the incidental catch of seabird by its tuna longline fishery. However, the Ministry of Maritime Affairs and Fisheries (MOMAF) is developing the National Plans of Action for the reduction of seabird and shark bycatch from longline fisheries. It completed the NPOA-IUU fishing and

reported to FAO in 2005.

Voluntary Measures for Each Fleet

While no mandatory measures to reduce seabird bychatch was taken by the Korean Government, fishermen voluntarily adopted seabird deterrent device called tori line. Based on fishermen's interview, it was around 1990s when Korean longliners voluntarily began to deploy tori line to deter seabirds from baited hooks. Fishermen recognize from their experiences that deterring seabirds from contacting baits during SBT longline sets is beneficial not only to reduce seabird mortality but to their fishery by reducing bait and effort loss.

In 2005 MOMAF and NFRDI published guidebooks and posters to support fisherman through recent information and identification key for bycatch species in tuna fisheries.

Measures under Development /Testing

Public Relations and Education Activities

To avoid or reduce mortality of seabird and sea turtle by tuna longline vessels, guidebooks and posters for the information and release manual of these species were distributed to fishing boats including tuna longliners in 2005.

Education

NFRDI opens a training session for fishing vessel captains as they make a visit to Longine Fishing Association before they begin their fishing trip. The session largely includes reporting of fishing activity, target species and implementation of international regulation. However, the importance of bycatch reporting is also emphasized and encouraged.