Annual Review of National SBT Fisheries

Korea

2010

Ministry for Food, Agriculture,

Forestry and Fisheries

1. Introduction

The Southern Bluefin Tuna (SBT) fishery by the Korean flagged vessels commenced in 1991. The type of SBT fishing used by Korean fishers has been commercial longline only. All fishing activities for the SBT are conducted by the Korean vessels which target tuna and tuna-like fish with distant sea fisheries permits. In 2008 and 2009, 19 vessels were engaged in the harvesting SBT. In 2010, however, the number was reduced to eleven vessels due the decrease in national allocation. All eleven vessels catch SBT as target fish while they fish albacore, yellowfin and bigeye tuna as well. They start SBT catch in April and finish the operation usually in December even though the fishing season ends on March 31 of the following year.

Only four big fisheries companies have been participating in SBT catch with a total of 19 large longline vessels in Korea. SBT was included in the quota management system since 2001 when Korea became the member of CCSBT. The national quota is allocated to companies by the government authority and then the companies split their allocation by vessels equally. Korea's quota for 2007, 2008 and 2009 were 1,140 tons and for 2010 and 2011, 859 tons respectively. The allocations are transferable if any company is not able to exhaust its share.

2. Operational Constraints on Efforts

Regulatory Measures

All Korean flagged vessels that are engaged in SBT fishing operate on high seas with distant sea fishing permits and a catch limit allocated to them. They are also registered with the Korean Vessel Registry.

Since the accession to CCSBT, a Korea's SBT catch limit stayed at 1,600 tons from 2002 to 2006. From 2007 through 2009, the catch limit was 1,140 tons. For 2010 and 2011, 859 tons were allocated. The allocation was distributed to four fishing companies and eleven vessels (in 2010 and 2011) based on their historical performance on the SBT fishing activities. In accordance with the Distant Sea Fisheries Development Act, all vessels that operate on high seas shall comply with international conventions, conservation and management measures and resolutions. Conditions are attached to the high seas fishing permit to regulate the activity of the vessels, including catch reporting and transshipment requirements. The catch reporting is composed of catch and effort,

landings, monthly catch and ERS species. For the SBT fishing vessels, monthly, ten-day basis and daily-basis catch report are submitted as an additional reporting obligation.

Furthermore, the Distant Sea Fisheries Development Act stipulates that fishermen shall not be involved in IUU fishing activities, transshipment from IUU vessels, and cooperation with IUU activities. All vessels operating on distant waters should equip the vessel with monitoring systems and cooperate with the on-board inspection by national and international inspectors according to the Act. Significant financial penalties are applied to fishers who exceed their catch limit or breach the law.

An additional domestic catch reporting requirements are in place to comply with the CCSBT resolution, and the requirements are applied in landing, transshipping and/or exporting SBT. The Trade Information Scheme introduced in 2009 and the Catch Documentation Scheme (CDS) were effectuated from 1 January 2010.

Voluntary Measures

For mitigation of bycatch of seabirds, sharks and marine mammals, MIFFAF and NFRDI have published guidebooks, information booklets and posters to educate fisherman since 2006. All the materials published have been distributed to all longline vessels fishing tuna and tuna-like fish.

3. Catch and Effort

Catch

The Korean SBT fishing season usually starts in April and ends in December. During the first half of the fishing season, which is from April to July or August, Korean longliners usually fish on high seas of the western Indian Ocean off South Africa with an occasional expansion to the southeastern Atlantic, while during the second half they move to the eastern Indian Ocean off the Western Australia. This SBT fishing pattern and fishing grounds have rarely changed for the past 18 years except in 1991; but in 2008 and 2009, some catches were also taken from the western and central fishing grounds from April to December.

The annual catch of SBT from 1991 to 2009 is shown in Table 1. It reached a peak in 1998, followed by continuous decreases until 2005 and then it has been increasing until recent years mainly thanks to increased efforts derived from favorable exchange rates between Korean Won and Japanese Yen.

Table 1. The annual number of active Korean lonline vessels fishing for SBT and their annual SBT catches in CCSBT convention area, 1991-2009

Year	No. of vesseld	Catch (mt)	Year	No.of vesselds	Catch (mt)
1991	3	214	2001	10	735
1992	1	36	2002	10	649
1993	1	80	2003	4	221
1994	1	119	2004	7	114
1995	3	317	2005	7	33
1996	8	1,148	2006	9	130
1997	14	1,238	2007	12	453
1998	19	1,562	2008	19	987
1999	16	1,271	2009	19	1,014
2000	13	987			

*** Catch unit : GG weight in mt**

Effort

The National Fisheries Research and Development Institute (NFRDI) collects logsheet sampling data from vessels. The logsheet contains operation location, catches by species, number of hooks, etc. In accordance with the Distant Sea Fisheries Development Act, fishing vessels are obliged to report the logsheet and biological measurement to NFRDI when they return to home-based port. Usually, a fishing trip of longline vessels lasts more than 20 months so that the catch statistic data would be completed that much later. In 2010, the logsheet was reported in an electronic format as soon as fishing operation ended.

The monthly SBT catch distribution of 2009 in terms of CPUE is mapped in Figure 1. It is shown that the fishing was operated mainly off the eastern part of South Africa and secondarily off Western Australia.

For 2008 and 2009, 19 vessels participated in SBT fishing and eleven vessels are harvesting SBT in 2010. Two scientific observers were on board two vessels to collect catch, effort and other scientific data. Table 2 shows observed catch and effort of SBT by Korean tuna longliners in 2009 and 2010.

Table 2. Observed catch and effort of SBT by Korean tuna longliners in 2009-2010

Year	Fishery	Observers Deployed	Sea Days	Sets/Tows Observed	Observed Vessels	Observed Effort (units: hooks)	Total Cost (Won)
2009	Longline	2	109	97	10%	446,479	37,300,000
2010	Longline	2	149	119	10%	389,042	45,000,000

4. Historical Catch and Effort

Korean SBT fisheries commenced in 1991 with a few longliners operating in tropical waters where they targeted albacore, bigeye and yellowfin tunas. SBT had not attracted Korean fishermen's attentions before early 1990s but soon its importance was recognized as the fish were sold in the Japanese sushi market at high prices. Consequently, the number of longliners rapidly increased to 19 vessels in 1998. Since then, the annual fleet size has stood at 19 registered vessels with the voluntary regulation of the distant sea fisheries industry association. In general, the annual active number of vessels engaged in fishing SBT largely depends on Japanese market price and exchange rates between the Korean Won and the Japanese Yen. For historical information for catch and vessels fished SBT, part 3 provides the relevant data. The nominal CPUE series of SBT during 2000-2009 appeared on Figure 2. The CPUE (number of fish caught per 1000 hooks) of the Korean longline fishery for SBT was very low with 0.5 and 0.6 in 2004 and 2005, compared to 2.1-3.3 during 2000-2003 but increased to 3.4 in 2008 and 4.7 in 2009, respectively. The CPUE of 2008 and 2009 is preliminary.

5. Fleet Size and Distribution

Year	1991	1992 -1994	1995	1996	1997	1998	1999	2000	2001 -2002	2004 -2005	2006	2007	2008 -2009	2010 -2011
vessels	3	1	3	8	14	19	16	13	10	7	9	12	19	11

All nineteen vessels fishing or fished SBT are over 40 meters and over 350 gross tons. All the vessels are longliners. Korean longliners usually fish on high seas of the western Indian Ocean off South Africa with an occasional expansion to the southeastern Atlantic, while during the second half they move to the eastern Indian Ocean off the Western Australia. Figure 1 shows the distribution of Korean flagged vessels fished SBT in 2009.

6. Fisheries Monitoring

Korea initiated a Fisheries Observer Program for distant sea fisheries including tuna fisheries in 2002. The purpose of this program is to meet the requirements of relevant regional fisheries bodies, thus the mission of trained observers is similar to those set out in the convention of the fisheries bodies. In 2009 and 2010, two observers were deployed to monitor the tuna longline fisheries including by-catch species in the southwestern Indian Ocean, between 30S°-43°S and 11E°-43°E for four months starting from March to June. Table 2 shows observed catch and effort of SBT by Korean tuna longliners in 2009-2010. In 2009 the observer recorded a total catch of 1,068 SBT, and 1,152 albacore tunas during 109 days of observation. The proportion of SBT was 18.2% of the total catch in number and sharks were 38.9% as shown in Table 3. In 2010 the observer recorded a total catch of 2,175 SBT, and a total catch of 1,412 albacore tunas during 149 days of observation. The observer coverage was 10.5 % both in 2009 and 2010.

Table 3. Observed species composition (%) of the Korean tuna longliners for targeting SBT in 2009 and 2010

Year	TOTAL	SBT	ALB	YFT	BET	STM	SWO	BLM	SHA	OTH
2009	5,879 (100.0)	1,068 (18.2)	1,152 (19.6)	14 (0.2)	46 (0.8)	0 (0.0)	4 (0.1)	0 (0.0)	2,288 (38.9)	1,307 (22.2)
2010	9,511 (100.0)	2,175 (22.9)	1,412 (14.8)	91 (1.0)	63 (0.7)	0 (0.0)	6 (0.1)	1 (0.0)	4,415 (46.4)	1,348 (14.2)

SBT : southern bluefin tuna ALB : albacore tuna YFT : yellowfin tuna BET : bigeye tuna
STM : striped marlin SWO : swordfish BLM : black marlin SHA : sharks OTH : other fishes

The observers collected the bycatch data as follows:

Seabirds bycatch

According to fishermen, some seabird species (mostly albatross and petrel) are often encountered as they set longlines. During the recent scientific observation trip in 2009 and 2010, four observers reported that there were 188 incidental catches of seabirds although fishermen used several on-board voluntary measures to avoid seabird bites such as hook-casting before dawn, installing tori lines, using heavy weighted and thawed baits, etc. Catch rates of seabirds were estimated 0.25 seabirds/ 1,000 hooks and 0.19 seabirds/1,000 hooks in 2009 and 2010, respectively.

Shark bycatchby in 2009 and 2010

Species	2009		2010	
	Number	%	Number	%
Blue shark	1,840	80.4	3,879	87.9
Porbeagle	403	17.6	439	9.9
Shortfin mako shark	41	1.8	87	2.0
Silky shark			1	0.0
Bigeye thresher shark			3	0.1
Sandbar shark			3	0.1
Crocodile shark				
Dusky shark	2	0.1		
Galapagos shark			2	0.0
Thresher shark	1	0.0	1	0.0
Smalltooth and tiger	1	0.0		
Velvet dogfish				
Total	2,288	100	4,415	100.0

Other Non-target Fish

More than 31 bycatch species were recorded, including non-target tunas and tuna-like species. The dominant species were opah (43.1 % in 2009 and 32.9% in 2010 of total catch of in number), sickle pomfret (15.7 % and 11.8%), Brama pomfret (12.8 % and 12.0 %) and oilfish (4.5% and 12.0%) (Table 5).

Marine Mammals and Marine Reptiles

No data are available for marine mammals or reptiles incidentally caught by Korean SBT longline fisheries. During the scientific observation trip in 2009 and 2010, common dolphins, false killer whales and seals were observed nine times. There was no incidental catch of sea turtles.

7. Other Factors

Investigation on imported SBT in disguise of bigeye tuna in the Korean market

The Ministry for Food, Agriculture, forestry and Fisheries of the Korea (MIFAFF) received information on an alleged illegal import and distribution of SBT. Accordingly, the MIFFAF inquired the Marine Police about the issue and found out the followings:

In early May of 2010, the Busan Marine Police Station launched an investigation on complaint of an importing company. The complainant argued that about 15 tones of SBT,

in disguise of Bigeye tuna covered by a bogus import declaration, were imported and cleared the customs. The origin and the exporting country of the imported product-- a mixture of SBT and Bigeye tuna, based on the allegation of the complaint and investigation of the Korea's Marine Police Station--was Vietnam. The total amount of the imported product under the investigation was 15,404Kg. The importer was ordered to suspend its business by the relevant administrative office. The Korean Marine Police sent the case to the Prosecutor's office in August 2010. Currently, there is no further information including the ratio of the mixture between the two species because the case is now placed at the prosecutor's hand.

Discrepancies of the SBT weight found from port inspection

Korean government officials inspected the SBT landings at two ports to implement the Korea's compliance action plan as follows:

Date and location

- The first round: at the Shumizu port in Shizuoka, Japan on May 6, 2010
- The second round: at the Gamcheon port in Busan, Korea on June 7, 2010

The result of the inspection

- The first round of the inspection was against SBT caught by the longline vessel, Oryong 801 owned by the Sajo industries, The applied catch to be inspected was 51,910Kg on the Catch Document but the actually landed amount was 60,870Kg. There was a discrepancy of 8,960Kg. The relevant authority, National Fisheries Product Quality Inspection Service, issued an additional catch document for 8,960Kg.
- The second round of the inspection was against the SBT caught by the longline vessel, Dongwon 632 owned by Dongwon Fisheries Ltd. and carried by Tenho Maru, carrier of Panama flagged. The applied amount was 12,000Kg on the Catch Document but the actually landed amount was 11,630Kg. There was discrepancy of 370Kg. The National Fisheries Product Quality Inspection Service withdrew the original catch document and reissued a catch document as inspected.

Other information regarding discrepancies between the measurements of SBT on board and at landing port

In September of 2010, MIFAFF received information regarding two cases for SBT exports. One is of Sajo Industry submitted the Catch Document for 12,616Kg of SBT to export to Japan. But the actual weight was found to be 12,971 Kg with exceeded amount of 355 Kg. As a result, the 355 Kg were rejected during the process of the export by the Japanese Authority concerned. The other is of the Dongwon Fisheries Ltd. The company

submitted the Catch Document for 121,935 Kg (Dongwon 622: 61,935 Kg and Dongwon 619: 60,000Kg) to Japan. The actual weight measured at port was 122,602.3 Kg (63,602.3Kg and 59,000Kg). The exceeded 667.3 Kg was rejected to export to Japan.

It is very difficult to accurately measure the weight of catches on board due to many variables such as weather conditions and vessel fluctuations. The accurate weight can only be measured at ports when the catches are landed and exported and thus the above-mentioned discrepancies occurred.

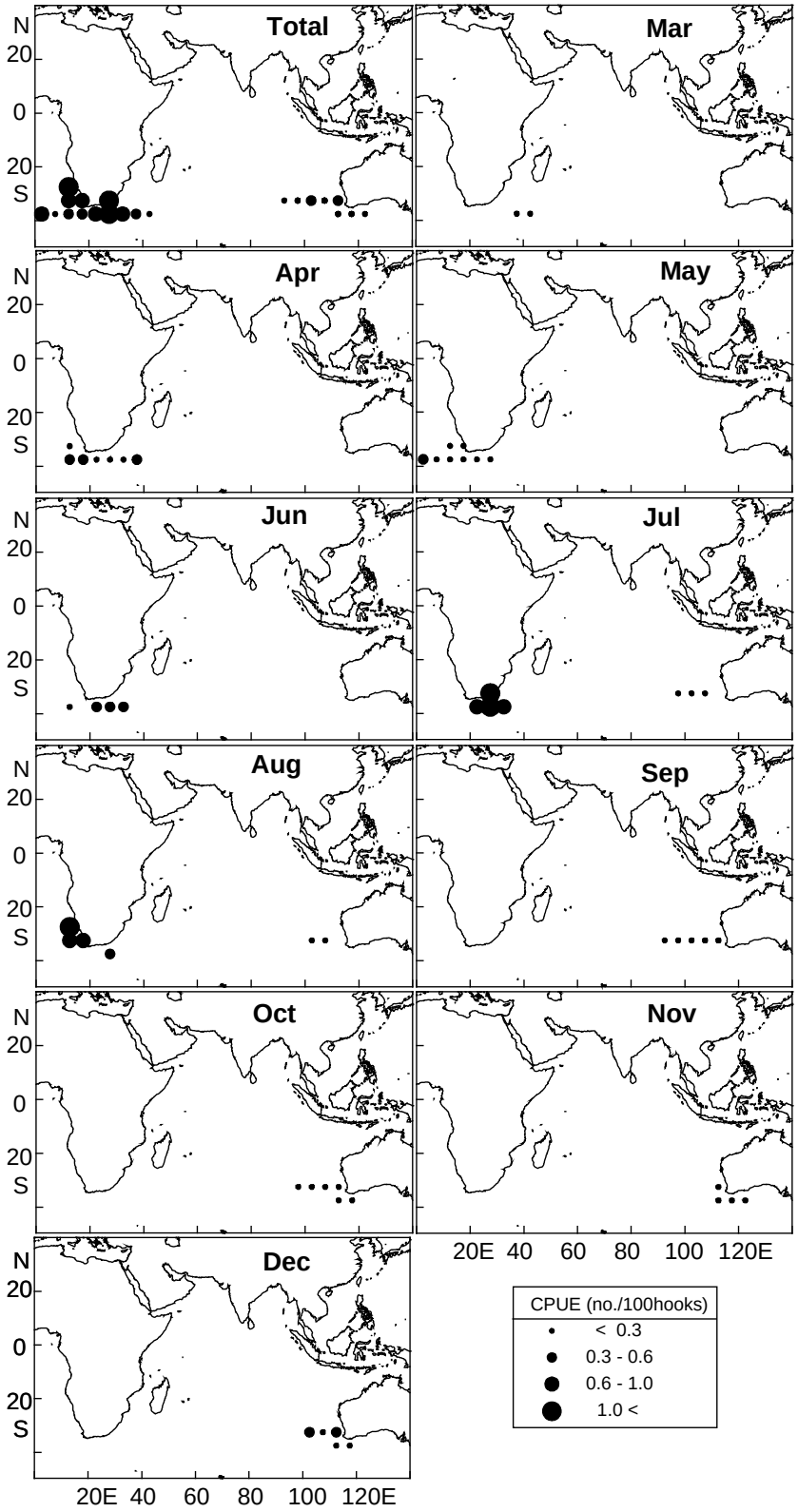

Fig. 1. CPUE (No./100 hooks) distribution of SBT by Korean tuna longliners in 2009.

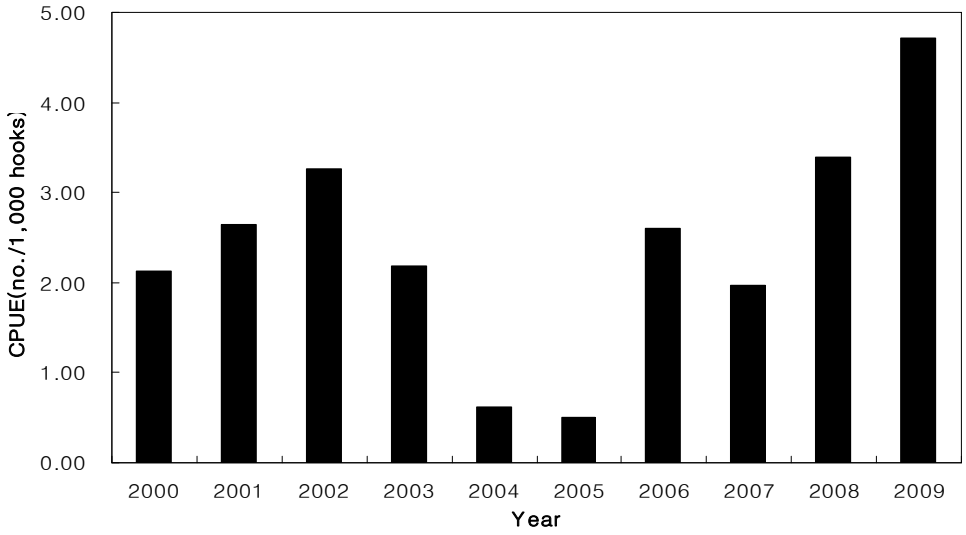

Fig. 2. The nominal CPUE series of SBT during 2000-2009 (Data for 2008 and 2009 are preliminary).