

**Annual Review of National SBT Fisheries**  
**Korea**

**2011**

**Ministry for Food, Agriculture,  
Forestry and Fisheries**

## **1. Introduction**

Korean-flagged commercial longliners with distant water fishing licenses have been catching Southern Bluefin Tuna (SBT) since 1991 and the species was introduced into the Quota Management System (QMS) in 2001, when Korea became a member of the CCSBT.

Under the QMS, the Korean government allocates the national quota to companies, which then distribute their allocations among their vessels and the allocations can be transferred if any company is not able to exhaust its share. This allocation system is designed to prevent a race for fish. For the 2010/2011 fishing year, Korea set its national Total Allowable Catch of 859 tons as agreed at CCSBT 16 in 2009.

Korea's administrative fishing season for SBT begins on April 1<sup>st</sup> and ends on March 31<sup>st</sup>, but most of the operation is usually finished around December. Currently, only four fisheries companies are engaged in the SBT fishery with a total of 19 large-scale longliners, which also catch albacore, yellowfin and bigeye tuna. In 2008 and 2009, all those 19 vessels caught SBT, but in the 2010 administrative fishing year, only 9 of them fished for SBT.

## **2. Operational Constraints on Efforts**

### **Regulatory Measures**

The Distant Water Fisheries Development Act of Korea provides the legal grounds for the government to regulate Korean-flagged distant water fishing vessels, including those which are engaged in the SBT fishery on high seas.

In accordance with the Act, all vessels that operate on high seas shall comply with international conventions, conservation and management measures and resolutions. Terms and conditions such as catch reporting and transshipment requirements are attached to high seas fishing licenses to regulate the activity of the license holders. Catch and effort data, landings, monthly catches and interactions with ERS species are subject to the reporting. Additionally, SBT fishing vessels are required to provide their monthly, ten-day and daily catch reports to the authorities.

The Distant Water Fisheries Development Act prohibits direct and indirect involvement

of Korean-flagged vessels in IUU fishing activities. To ensure this, the Act stipulates that all vessels operating on distant waters, be it high seas or EEZs of coastal states, should be equipped with monitoring systems (VMS) and cooperate with the on-board inspection by national and international inspectors. Any breaches of the law including quota overruns are subject to penalties.

All Korean-flagged vessels engaged in the SBT fishery conduct their operation on high seas. No Korean-flagged vessel can conduct SBT operations unless it meets certain requirements. They are required to be registered to the Korean Vessel Registry, to hold distant water fishing licenses issued by the authorities and to adhere to the catch limit allocated to them.

An additional domestic catch reporting requirements are in place to ensure Korean-flagged vessels' compliance with the CCSBT resolutions. These requirements are applied to landing, transshipping and/or exporting SBT. The Trade Information Scheme was introduced in 2009 and the Catch Documentation Scheme (CDS) entered into force as from 1 January 2010.

### **Voluntary Measures**

As part of the efforts to mitigate seabird, shark and marine mammal bycatch, MIFFAF and the NFRDI have published guidebooks, information booklets and posters on bycatch species and relevant mitigation measures. The published materials have been distributed to all longline vessels fishing for tuna and tuna-like species, including SBT, to assist fishers in identifying and recording the species frequently taken as bycatch and to raise their awareness on the importance of bycatch reduction.

## **3. Catch and Effort**

### **Catch**

Korea's SBT fishing operations usually starts in April and ends in December, though the administrative fishing season is from April 1<sup>st</sup> to March 31 of the subsequent year. 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 a few occasional trips to the southeastern Atlantic. During the second half, they move to the eastern Indian Ocean off Western Australia. This SBT fishing pattern and the fishing

grounds have rarely changed for the past 20 years with an exception of year 1991.

The annual catches of SBT from 1991 to 2010 (calendar year) appear in Table 1 below. It reached a peak in 1998, and then kept decreasing until 2005, after which the catch saw increases again. The data on catches in 2011 are still being collected so they are not included in the table.

Table 1. The annual number of active Korean lonline vessels fishing for SBT and their annual SBT catches in CCSBT convention area, 1991-2010 (calendar year)

Year	No. of vessels	Catch (mt)	Year	No.of vessels	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	2010	9	867

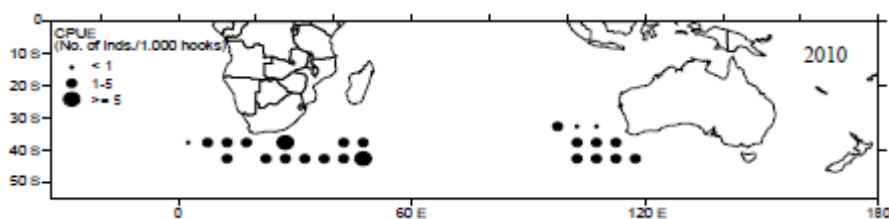
\* Catch unit : RD weight in mt

## Effort

The National Fisheries Research and Development Institute (NFRDI) collects log sheet sampling data from vessels. The log sheet indicates fishing location, catches by species, the number of hooks used, and other relevant operational data. In accordance with the Distant Water Fisheries Development Act, fishing vessels are obliged to submit their log sheets and biological data of their catches to the NFRDI upon returning to home ports. In 2011, the log sheets were submitted electronically as soon as fishing operations ended.

The SBT catch distribution of 2010 in terms of CPUE is mapped in Figure 1. This map indicates that the fishing was operated mainly off the eastern part of South Africa and off Western Australia.

Fig. 1. CPUE (No./1000 hooks) distribution of SBT by Korean tuna longliners in 2010.



In 2010, 9 Korean-flagged vessels participated in the SBT fishery. 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.

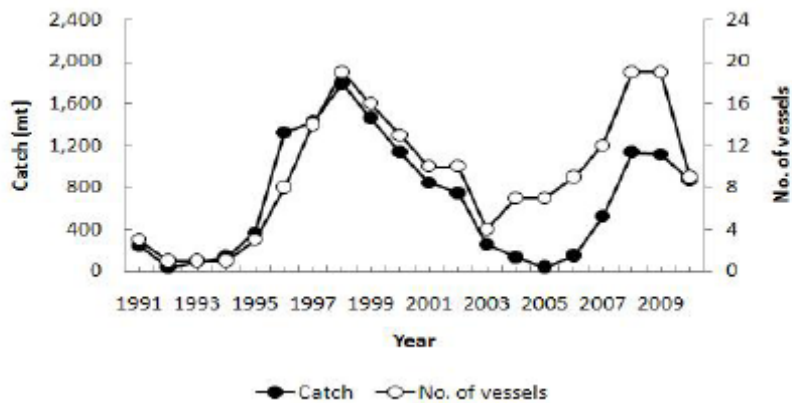
Table 2. Observed catch and effort of SBT by Korean tuna longliners in 2010

Year	Fishery	Observers Deployed	Sea Days	Sets/Tows Observed	Number of Observed Vessels	Observed Effort (units: hooks)	Total Cost (Won)
2010	Longline	2	149	119	2	389,042	45,000,000

#### 4. Historical Catch and Effort

Korean SBT fisheries started in 1991 with three longliners operating in tropical waters where they targeted albacore, bigeye and yellowfin tunas. SBT had not been one of the species of interest before the early 1990s, when the value of the species in the high-end sushi and sashimi market began to be recognized. Consequently, the number of longliners sharply increased to 19 vessels in 1998. Since then, the annual fleet size has stayed more or less the same with the voluntary regulation of the Korea Overseas Fishing Association (KOFA). In general, the annual number of active vessels engaged in the SBT fishery largely depends on the Japanese market trends. The graph below shows the total catch of SBT and the number of active vessels targeting SBT from 1991-2010.

Figure2. the total catch of SBT and the number of active vessels targeting SBT from 1991-2010.



## 5. Fleet Size and Distribution

All nineteen vessels authorized to fish SBT are longliners over 40 meters in length and over 350 gross tons. The table below shows the changes in the number of vessels engaged in the SBT fishery from 1991 to 2011.

Table 3. he changes in the number of vessels engaged in the SBT fishery from 1991 to 2011.

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	9

## 6. Fisheries Monitoring

Korea introduced a Fisheries Observer Program for the distant water fisheries including tuna fisheries in 2002. This Program is designed to meet the requirements of relevant regional fisheries management organizations (RFMOs), and thus the mission of the observers is in line with those set out in the rules of the RFMOs. In 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 from April to July and April to August, respectively. In 2010 the observers recorded a total catch of 2,175 individuals of SBT, and a total catch of 1,412 albacore tunas during 149 days of observation. The observer coverage was 12.7% in 2010, an increase from 9.5% in 2009.

Table 4. Observed species composition (%) of the Korean tuna longliners for targeting SBT in 2010

Year	TOTAL	SBT	ALB	YFT	BET	STM	SWO	BLM	SHA	OTH

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)
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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:

### Seabird bycatch

Fishers reported that certain seabird species (mostly albatross and petrel) are frequently encountered as they were 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 such as hook-casting before dawn, installing tori lines, using heavy weighted and thawed baits to avoid seabird bites and attraction. Catch rates of seabirds were estimated 0.25 seabirds/ 1,000 hooks and 0.19 seabirds/1,000 hooks in 2010.

### Shark bycatch by species in 2010

Shark bycatch by species in 2010 appears in the table below.

Species	2010	
	Number	%
Blue shark	3,879	87.9
Porbeagle	439	9.9
Shortfin mako shark	87	2.0
Silky shark	1	0.0
Bigeye thresher shark	3	0.1
Sandbar shark	3	0.1
Crocodile shark		
Dusky shark		
Galapagos shark	2	0.0
Thresher shark	1	0.0
Smalltooth and tiger		
Velvet dogfish		
Total	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 (32.9% in 2010 of total catch of in number), sickle pomfret (15.7 % and 11.8%), Brama pomfret (12.0 %) and oilfish (12.0%)

## 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--SBT Export/Re-export / Import/Re-import Statistics

### Export/Re-export

In 2010 and 2011, the Korean authorities issued 29 and 3 SBT export statistical documents, respectively. The destination for the export was the Japanese market. The table below indicates more information on this category.

country	2010		As of June, 2011	
	number of issuance	amount (kg)	number of issuance	amount (kg)
	29	973,969.2	3	244,896.4
JPN	25	957,591	3	244,896.4
JPN (re-ex)	4	16,378.2		

The table below shows statistics on SBT import/re-import.

### Import/Re-import

country	2010		As of June, 2011	
	number of issuance	amount (kg)	number of issuance	amount (kg)
total	102	104,715	74	49,248
JPN	20	37,283	14	12,923
AUS	64	33,101	36	23,309
SPN (re-import)				
IND	17	29,482	18	3,047



TWN	1	4,849	2	1,986
KR			4	7,983