

Review of Taiwan's SBT Fishery of 2008/2009

1. INTRODUCTION

Taiwan has been fishing for southern bluefin tuna (SBT) since 1970s. The SBT is being caught partly by seasonal target fishery and partly by the albacore fishery as by-catch. Seasonal target fishery is conducted mainly by longliners equipped with super-low temperature freezers, in two seasons, i.e. one from June to September in the waters of 20°S-40°S in the central Indian Ocean, and the other from November to February of the following year in the waters around 35°S-45°S off the southeast coast of Africa. However, no year-round target SBT fishing has yet been conducted. The total annual catch in 2008 quota year was estimated as 926 mt, for calendar year preliminarily estimated to be 876 mt.

2. OPERATIONAL CONSTRAINTS ON EFFORT

Regulatory Measures

Taiwan became a member of the Extended Commission of CCSBT in 2002, and agreed to limit its annual catch of SBT to 1,140 mt. Fishing vessels for seasonal target SBT and by-catch for SBT are differentiated. Individual quota has been allocated to each of seasonal target SBT vessel, and the dynamic quota balancing mechanism is established. Any vessel which changed their fishing schedule did not get to the SBT fishing ground in time as our regulation demands or which cannot use up their quota, would be reviewed and reallocated to those vessels fishing in the fishing ground which needed more quota. By-catch SBT vessels are allowed to have a maximum of 1 ton SBT bycaught per vessel.

Every vessel is required to register with the Taiwan Tuna Association whether of target or by-catch SBT, and shall be approved by the government. According to the regulation, in 2008, about 98% of the annual catch limit was allocated to the seasonal target vessels, while the remaining 2% to the by-catch vessels.

In order to collect SBT catch information in a timely manner so as to monitor the total SBT catch not to exceed the catch limit, from 1996 every vessel that catches SBT was required to submit

weekly report on its catch of SBT by weight as well as its fishing location to the fisheries authorities. This system was refined in 2002 to obtain more accurate catch information, including the length measurement of each SBT caught.

Since June 2000, Taiwan has implemented Trade Information Scheme (TIS) for the export of SBT in accordance with the resolution adopted by CCSBT. Since 2002, all vessels fishing for SBT have been required to be installed satellite-based Vessel Monitoring System (VMS) for transmitting the positions of vessels in a timely manner to the monitoring center. Fishing in spawning area of SBT is prohibited and SBT statistical document will not be issued to any fish caught from the spawning area to protect the spawning stock.

According to the resolution on establishing a program for transshipment by large scale fishing vessels adopted by the CCSBT in 2008, Taiwan has conducted at sea transshipment program since 1 April 2009.

3. CATCH AND EFFORT

In 2008/2009 fishing season, the actual catch was estimated as 926 mt caught by 41 active vessels, including seasonal target and by-catch vessels. About 77.2% of the Taiwanese SBT catch was caught mainly in the southern and central Indian Ocean (25°S~40°S/55°E~105°E) , and some catch about 22.7% were distributed in water off the southeast coast of Africa (30°S~45°S/20°E~55°E). Other catch were found sporadically in the southwestern Pacific Ocean.

4. HISTORICAL CATCH AND EFFORT

In the early 1980s, the annual catch of SBT was relatively small, with a catch of less than 250 mt. Following the expansion of tuna long-line fleet and exploitation of fishing grounds, there has been a prominent increase in the annual catches. A significant increase in the annual catch of SBT was observed from 1989 to 1992, with a record catch of exceeding 1,100 mt, 1/4 of which was from drift net fishery. Following the prohibition of drift-net fishery on the high seas in 1993 in compliance with the United Nations General Assembly Resolution 46/215 calling for global moratorium on all large-scale pelagic drift-net fishing on the high seas of the world's oceans and seas by 31 December 1992, the annual catch of SBT decreased to a stable level, with fluctuation

between 800 and 1,600 mt during the last decade (Table 1).

5. ANNUAL FLEET SIZE AND DISTRIBUTION

In 2008, there were 41 longline vessels fishing for SBT, of which most vessels operated in the Indian Ocean. Their fishing grounds were mainly in the waters of 25°S - 40°S, seasonally distributed in the southern and central Indian Ocean from June to September, and in the southwestern Indian Ocean extending to the eastern boundary of the Atlantic Ocean from November to February of the following year. The catch distribution of 2005-2008 is mapped in Figure 1.

6. HISTORICAL FLEET SIZE AND DISTRIBUTION

Following the prohibition of drift-net fishing in 1993, SBT was caught only by longline fishery in the three oceans, but mainly in the Indian Ocean. According to the weekly report and trade information, there were more than 100 vessels fishing for SBT during 1998-2001. Due to the quota management regulation set by Fisheries Agency, the number of vessels which were authorized to fish for SBT increased temporarily from 61 of 2002 to 100 in 2003, then decreased drastically to 30-41 in 2007 and 2008. The number of authorized vessels fishing for SBT from 2002 to 2008 was shown as Table 2.

7. FISHERIES MONITORING

Intensive efforts have been continuously exerted for better understanding and monitoring the fishery through the following measures:

- I. Weekly report for SBT catch is required for submission to Fisheries Agency through Taiwan Tuna Association. From 2002, provision of such information as daily catch, daily fishing location and daily discards is required in the weekly report when applying for SBT statistical document.
- II. Since April 2002, vessels authorized to fish for SBT are required to install VMS equipments in order to monitor the positions of the vessels.
- III. An experimental scientific observer program on SBT fisheries has been launched since 2002. In 2008, due to high fuel price, for saving cost, fishing vessels reduced to enter ports

and meet transshipping vessels, it was difficult to deploy observer on board, so that only 2 observers were placed on 2 seasonally targeting SBT vessels. The observer coverage rate by hooks was about 6.65% and by catch about 3.65%. Table 3 shows the summary results for scientific observer program from 2002 to 2008.

- IV. Trade information scheme (TIS) has been implemented to collect updated and detailed catch information. In applying for TIS document, the applicant is required to submit the transshipment document issued by the cargo carriers. After unloading of the catch in Japan, the applicant is required to submit to Fisheries Agency the transaction record validated by the verification firm for further verification of catch statistics.

8. OTHER FACTORS

Markets

In 2008, about 769 mt SBT catch were exported to Japan for sashimi market and 7 mt were exported to Korea and South Africa. For the purpose of promotion, since 2006 Fisheries Agency has required industries to transship partial catch back to Taiwan for domestic consumption. In 2008, the amount of domestic consumption was approximated as 150 mt.

Seabirds mitigation measures

The government of Taiwan has introduced a regulation required vessels fishing southern than 28°S to deploy a tori line to reduce seabird incidental catch since 2004. Besides, in line with the resolution 08/03 on reducing the incidental catch of seabirds in longline fisheries adopted by IOTC and WCPFC, vessels fishing south of 30°S shall use at least two of mitigation measures since 2009.

Table 1. Annual SBT catches by Taiwanese deep-sea longline and drift net fisheries during 1972-2008. Unit: MT

Calendar Year	Catch		Quota year	Catch	
	Deep-Sea Longline	Drift Net		Deep-Sea Longline	Drift Net
1972	70		1972	70	
1973	90		1973	90	
1974	100		1974	100	
1975	15		1975	15	
1976	15		1976	15	
1977	5		1977	5	
1978	80		1978	80	
1979	53		1979	53	
1980	64		1980	64	
1981	92		1981	92	
1982	171	11	1982	171	11
1983	149	12	1983	149	12
1984	244	0	1984	244	0
1985	174	67	1985	174	67
1986	433	81	1986	433	81
1987	623	87	1987	623	87
1988	622	234	1988	622	234
1989	1,076	319	1989	1,076	319
1990	872	305	1990	872	305
1991	1,353	107	1991	1,353	107
1992	1,219	3	1992	1,219	3
1993	958		1993	958	
1994	1,020		1994	1,020	
1995	1,431		1995	1,431	
1996	1,467		1996	1,467	
1997	872		1997	872	
1998	1,446		1998	1,446	
1999	1,513		1999	1,513	
2000	1,448		2000	1,448	
2001	1,580		2001	1,580	
2002	1,137		2002	1,137	
2003	1,128		2003	1,128	
2004	1,298		2004	1,298	
2005	941		2005	941	
2006	846		2006	846	
2007 ¹	841		2007	823	
2008*	876		2008*	926	

*Preliminary estimation

¹ Since 2007, Taiwan changes its quota year from calendar year (1 January-31 December) to 1 April -31 March.

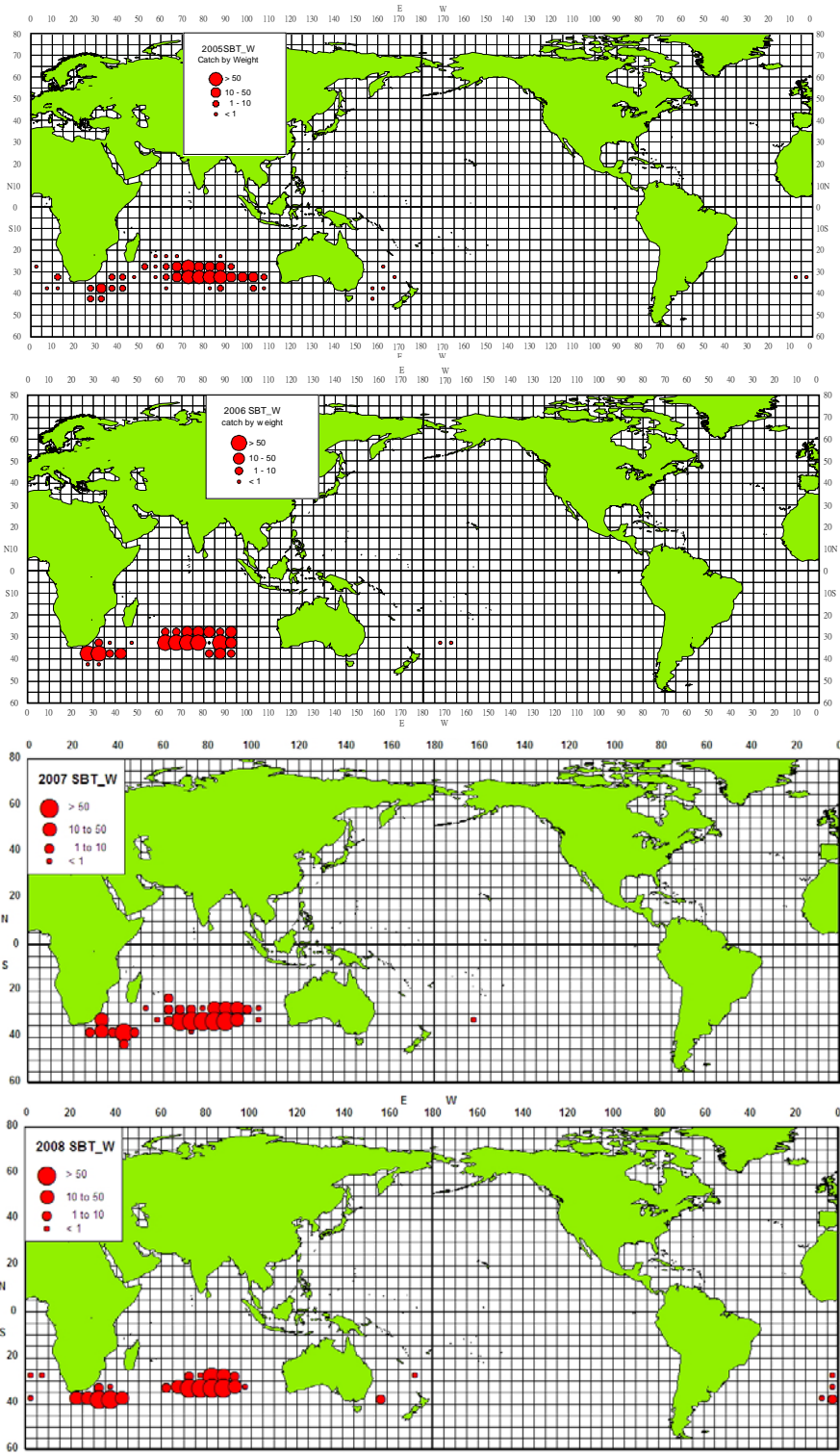


Fig 1. The SBT catch distribution of Taiwanese longline fishery during 2005-2008 (Data of year 2008 is preliminary and may be revised.)

Table 2. The number of authorized vessel fishing for SBT during 2002-2008.

Year	2002	2003	2004	2005	2006	2007	2008
Number of Vessels	61	100	92	57	36	30	41

Table 3. Summary of results for scientific observer programs during 2002-2008.

Year	Observers Deployed	Observed Trips	Sea Days	Set Observed	Observer Vessels (%)	Observed Effort (%)	Observed Catch (%)
2002	1	1	202	126	4.76	6.57	1.44
2003	2	2	177	133	2.63	2.43	0.86
2004	3	5	263	165	3.8	4.17	3.10
2005	4	4	681	444	8.16	11.57	9.62
2006	3	3	296	253	9.09	10.46	6.08
2007	4	4	441	394	14.81	14.84	13.72
2008	2	2	252	227	5.71	6.65	3.63