THE BRIEF REVIEW ON TAIWANESE TUNA LONGLINE FISHERIES OPERATING IN THE INDIAN OCEAN

ABSTRACT

The number of Taiwanese large-scale tuna longline vessels operating in the Indian Ocean, on average, was about 182-325 during 2001-2008. The annual catch of tuna and tuna-like species was stable and maintained at the amount about 101,012-114,389 MT during 2001-2005, but declined significantly about 40,000-70,000 MT from 2006-2008. The catch of albacore, bigeye and the yellowfin tunas accounted for more than 80% of the total catch. The major fishing grounds of this fleet located in the areas of 10°S-10°N / 30°E-95°E and 25°S-35°S / 30°E-95°E.

INTRODUCTION

There are two Taiwanese fleets, large-scale and small-scale tuna longline fleets, operating in the Indian Ocean. The large-scale tuna longline fleet mainly targeted albacore in mid 1970's, and then some vessels changed targeting bigeye and yellowfin tuna from 1980's as super cold freezer were developed and equipped in larger new-built vessels. Some large-scale longliners will shift their grounds to south for fishing southern bluefin tuna seasonally.

The small-scale tuna longline fleet originally operated in the coastal and offshore areas of Taiwan. In early 1990s, it expanded fishing activities to distant fishing grounds in Pacific and Indian Oceans targeting tropical tuna. In late 1990's, some small vessels shifted to Western Indian Ocean and started fishing albacore.

THE LARGE-SCALE TUNA LONGLINE FISHERY

The number of Taiwanese large-scale tuna longline vessels operating in the Indian Ocean was about 182-325 during 2001-2008 (Table 1). The annual catch of tuna and tuna-like species maintained at the level at about 100,000-110,000 MT during 2001-2005, but declined significantly to about 40,000-70,000 MT in 2006 and 2008 period (Table 2). The catch of BET had steadily increased from 37,000 MT in 2001 to 52,000 MT in 2003, but decreased to 30,000 MT in 2006 and 2007.In 2008, the catch of BET decreased

continuously to 20,000 MT. For YFT catch, it had steadily increased from 19,000 MT in 2001 to 58,000 MT in 2005, but decreased substantially to less than 20,000 MT of 2007. In 2008, the catch decreased further to 7,000 MT. The reasons for the dramatic decrease of catches from in recent years were large-scale tuna longline vessels reduction program and 107 vessels were scraped in 2005 and 2006, and some vessels stopped fishing voluntarily from 2007 for high fuel price. The catch distribution from 2001 to 2008 is shown in figure 1. The major fishing grounds of this fleet were located in the areas of 10°S-10°N / 30°E-95°E and 25°S-35°S / 30°E-95°E.

THE SMALL-SCALE TUNA LONGLINE FISHERY

However, since early 1990's, the fishing pattern of this fleet has changed. Some Taiwanese small-scale tuna longline vessels operated not only in the coastal and offshore areas but also in the Indian Ocean. In addition, these vessels also changed their fishing grounds seasonally from the Pacific Ocean to the Indian Ocean. The catches of tropical tuna species (BET and YFT) are shown in Table 3.

Data improvement programs

For the improvement of the statistical system, Taiwan has taken the following measures to collect the fishery-independent data.

Port sampling

Owing that most of Taiwanese deep-sea tuna longliners unloaded their catches at overseas ports, Taiwan has launched port sampling program at major foreign landing ports since 2005. Three sampling trips in the three Oceans were made at three foreign ports in 2006 during fishing seasons. For the Indian Ocean, the sampling program was conducted in December 2006 in the Port of Louis.

Vessel Monitoring System

All of Taiwanese large-scale tuna longline vessels operating in the Indian Ocean have been required to install VMS since 2003. The data from VMS has also been used to verify the position of logbook to improve the data quality.

Observer program

For collecting fishery, biological data and bycatch information, Taiwan launched an experimental observer program in 2001. However, observers deployed on vessels fishing in the Indian Ocean commenced in 2002. In 2008, there were 14 observers dispatched to the fishing vessels in the Indian Ocean. Table 4 shows the numbers of deployment for scientific observer program from 2002 to 2008.

The observers were required to collect fishery data and size measurements on target species and record bycatch species, such as shark, seabird, sea turtle, and marine mammals.

Data collection system establishment for small-scale tuna longline fishery

To improve fishing data collecting, Fisheries Agency conducted a data improvement program and established a taskforce in 2006 to collect fishery data of small-scale tuna longline vessels. As required by the program, additional manpower- the statisticians have been deployed to field offices to collect logbooks, interview with fishermen, and conduct port-sampling program.

Table 1.The number of large-scale tuna longline vessels operating in the IO during 2001 to 2008 period.

YEAR	2001	2002	2003	2004	2005	2006	2007	2008
No. of vessel	297	310	317	322	325	280	196	182

Table 2. The catches by species large-scale tuna longline vessels in the IO during 2001 to 2008 period.

YEAR / SPECIE	2001	2002	2003	2004	2005	2006	2007	2008*
ALB	26,141	20,300	11,055	9,116	6,262	3,229	2,014	2,908
BET	37,015	44,317	56,778	51,807	36,845	30,880	30,803	20,594
YFT	18,860	27,743	24,826	42,312	57,804	23,755	15,790	7,029
SWO	12,284	12,877	13,474	11,294	6,898	6,073	5,200	4,018
MLS	1,297	1,399	1,511	2,032	898	924	664	529
BLZ	2,155	2,333	2,883	2,737	1,706	1,693	1,197	1,182
BLM	251	336	394	140	194	223	53	264
BIL	600	980	1,141	1,665	1,542	1,407	1,101	989
SKJ	10	23	20	27	84	71	15	41
SHK	2,243	2,230	3,055	2,073	1,848	2,276	1,127	1,535
OTH	156	109	299	589	308	812	2,675	2,389
TOTAL	101,012	112,648	115,436	123,792	114,389	71,343	60,641	41,478

Table 3. The estimated catches of BET and YFT for Taiwan small-scale tuna longline vessels in the IO during 2001to 2008 period.

YEAR / SPECIE	2001	2002	2003	2004	2005	2006	2007	2008*
S BET	5,056	5,894	3,248	5,112	3,367	4,935	5,342	3,754
YFT	8,053	5,428	4,894	7,481	9,804	10,922	9,918	9,543

Table 4. The numbers of deployment for for scientific observer program from 2002 to 2008 period.

YEAR	2002	2003	2004	2005	2006	2007	2008
No.	1	2	3	6	6	25	14

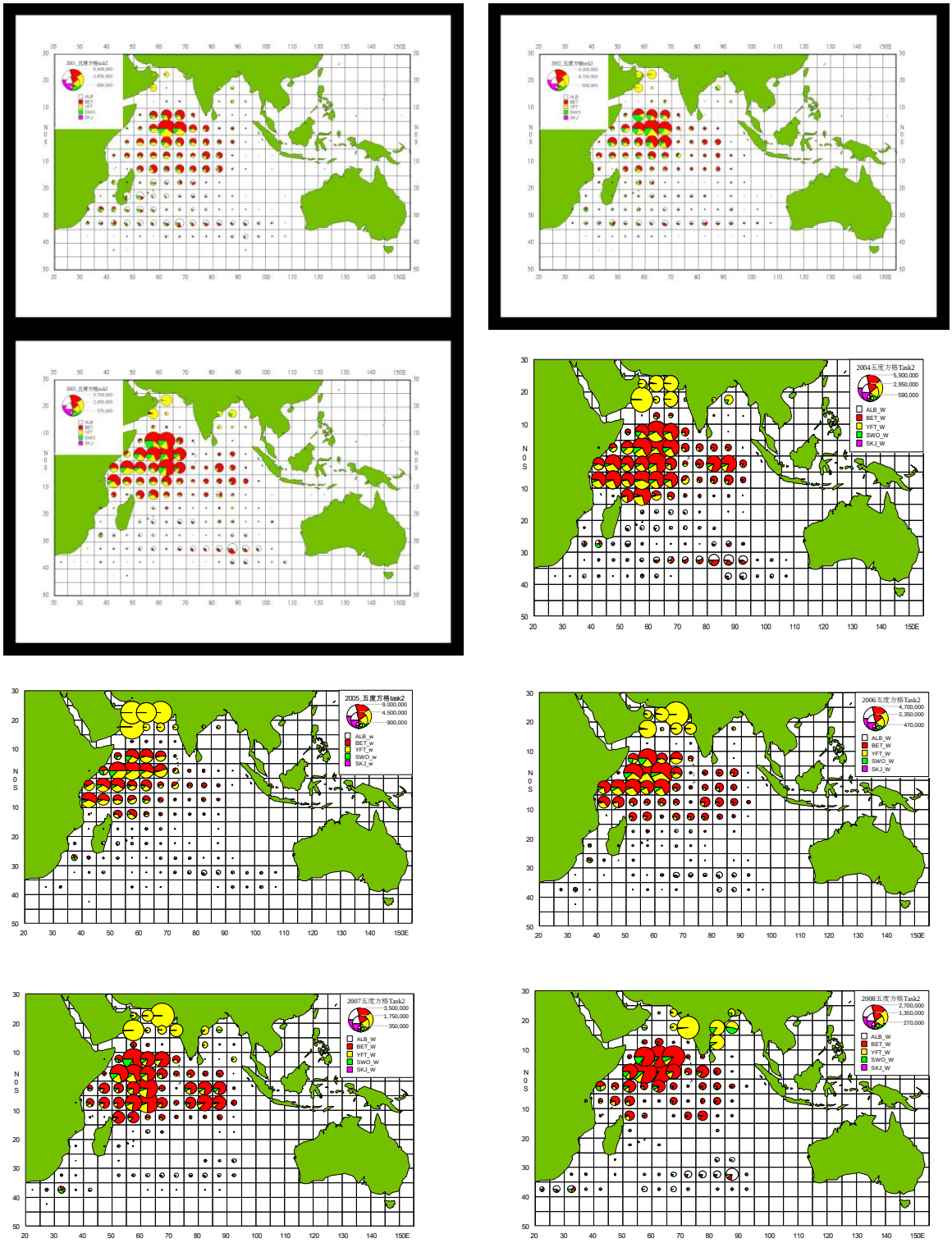

Figure 1. The catch distribution of Taiwan large-scale tuna longline vessels during 2001 to 2008 period.