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Catches of Albacore Tuna by Malaysian Longline Vessels in the Indian Ocean during 2005-2013

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Abstract

A total of four Malaysian tuna longliners plus one carrier began to fish for albacore in the vicinity of southern Mauritius since the 3rd quarter of 2011. This paper was based on the data extracted from fishing log sheets which were sent to Department of Fisheries, Malaysia. During 2005-2013, the highest total catch was recorded in 2007 with 3983.28 tonnes followed by 2005, 2008 and 2009, respectively (3436.40, 3288.88 and 2706.09 tonnes). CPUE value was calculated for the year 2013 and it was found that the highest CPUE was in October with 57.82 fish/1,000 hooks followed by January (57.34 fish/1,000 hooks) and June (39.74 fish/1,000 hooks). The lowest catch by weight and number is in March (2.74 tonnes and 141 fishes) and its CPUE was reduced to 8.81 fish/1,000 hooks. The catch of albacore in 2013 showed a slight increase with 946.60 tonnes compared to previous years (732.12 tonnes). In addition, the average composition by number of this species increased tremendously from 5.1% (2007-2011) to 78.3% in 2013.

Introduction

Malaysia tuna fisheries began in 2003 with several longline vessels registered under Malaysian flag operated in the Indian Ocean. The vessels targeted tropical tuna species mainly yellowfin and bigeye between 100 N and 100 South. During the early operation, all the Malaysian vessels unloaded their catches at the Malaysian International tuna Port (MITP) in Penang as their main fishing areas covered from the southern part of Sri Lanka waters to Andaman Sea and off west coast of Sumatra. For premium quality of yellowfin and bigeye, they were exported to other countries such as Japan, America and EU while low quality tuna were for local processing and canning plants and some were exported to Thailand. This include all by-catches such as Marlin fish, swordfish, sharks, common dolphin fish and other low value by-catch species.

For some of Malaysian vessels, they used Port Louis Mauritius for transhipment to export all the catches to buyer countries. These included premium quality tuna for sashimi markets while rejected tuna and by-catch fishes were exported to countries such as Thailand, Singapore and Iran for canning industry. Those vessels that unloaded at the Port Louis Mauritius used to operate in fishing areas in the western Indian Ocean particularly during October to February. Until end of 2010 the fleet targeting tropical tuna ceased their operation due to management problem. In 2011, a new tuna longline fleet, fully owned by local investors began to operate in the Indian Ocean targeting albacore tuna. Their fishing areas cover the southwest of Indian Ocean from 14^{o}S - 30^{o}S. Their operation office is based in Port Louis and all the catches were unloaded in that port.

Fishing Vessels

In year 2003, it was the beginning of Malaysian flag vessels to join the tuna fisheries in the Indian Ocean. From 7 registered fishing vessels in 2003, the number increased steadily to the maximum 60 vessels in 2009 and decreased back to 44 in 2010. Toward the end of 2010, due to management problem faced by the fleet owner, the vessels company stopped the operation. In November 2011, a new Malaysian company was formed and they operated with 4 registered tuna vessels.

Figure 1 shows the annual record of tuna fishing vessels registered under Malaysian flags from 2003 to 2013. One carrier vessel was registered by the same fishing company in November 2012.

From 2003 to 2010, all Malaysian fishing vessels were targeting tropical tuna in the areas that covered from Andaman Sea, southern Sri Lanka and western Indian Ocean in vicinity of Seychelles and Mauritius waters. There were two transhipment ports used by Malaysian tuna vessels; Malaysian International Tuna Port (MITP), Penang Malaysia and Port Louis, Mauritius. The catches unloaded by each vessel at the MITP Penang usually a pool of catches from an average of 5 other small fishing vessels. Normally for vessels used to transport the catches at the MITP were of large vessels.

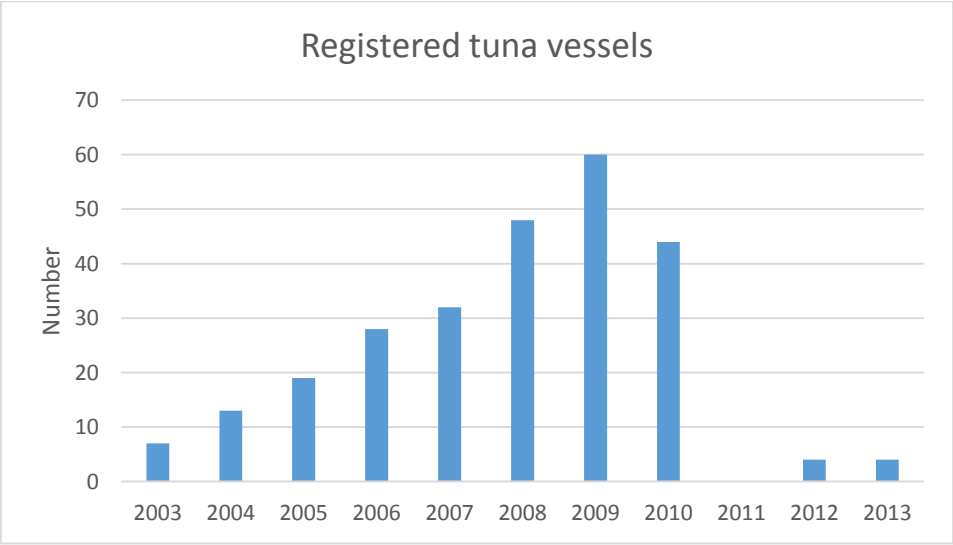

Figure 1: Registered tuna vessels under Malaysian flag operating in the Indian Ocean.

Annual catch from 2005-2013

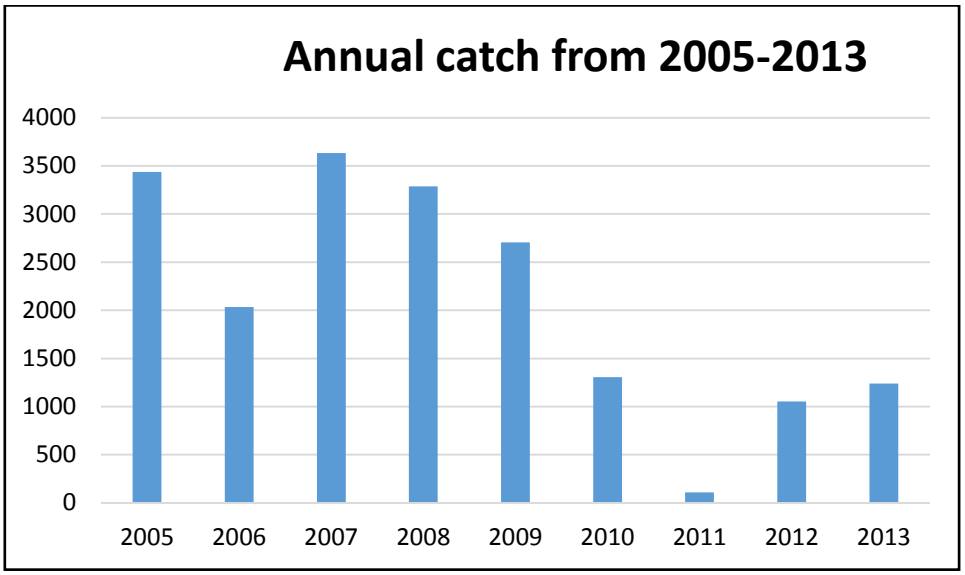

Figure 2 : Annual catch from all species by Malaysian flag tuna vessels in Indian Ocean

The highest landing was recorded in 2007 with 3633.66 tonnes followed by 2005 and 2008 with 3436.40 tonnes and 3288.88 tonnes respectively (Fig.2). In 2011, there is a sudden decrease in catch resulted from management problem faced by the fleet owner and the vessels company stopped the operation. 2011 can be considered a transition year from 1 old company to another new company that have 4 longline vessels and 1 carrier.

Fishing efforts, catch composition and CPUEs

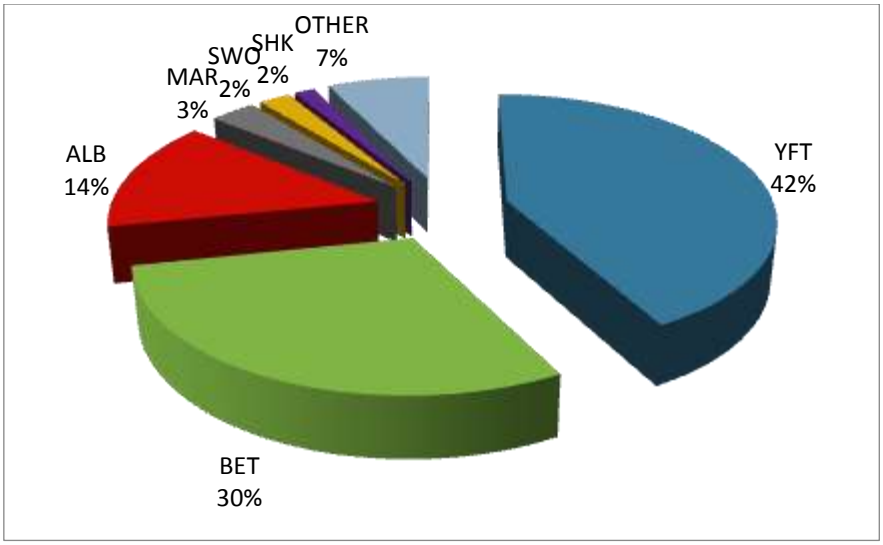

Figure 3 : Average catch composition from 2007-2013

Figure 3 showed the average catch composition of all species from 2007-2013. Yellowfin tuna comprise of 42.1% or 7533.88 tonnes to the total catch composition from 2007-2013, followed bigeye tuna with 29.6% and albacore with 14.1%. In 2013, albacore dominated the catch by 77.7% or 946.60 tonnes of the total catch, followed by yellowfin tuna (8.8%) (Fig.4). The catch of albacore in 2013 showed a slight increase with 946.60 tonnes compared to previous years (732.12 tonnes). In addition, the average composition by number of this species increased tremendously from 5.1% (2007-2011) to 78.3% in 2013.

Black marlin, striped marlin, swordfish, sailfish, sharks, skipjack, common dolphin fish and several other low value species are considered as by-catch species caught by the Malaysian fishing vessels. Other by-catch species were grouped into ‘other’ category (Fig. 3 & 4).

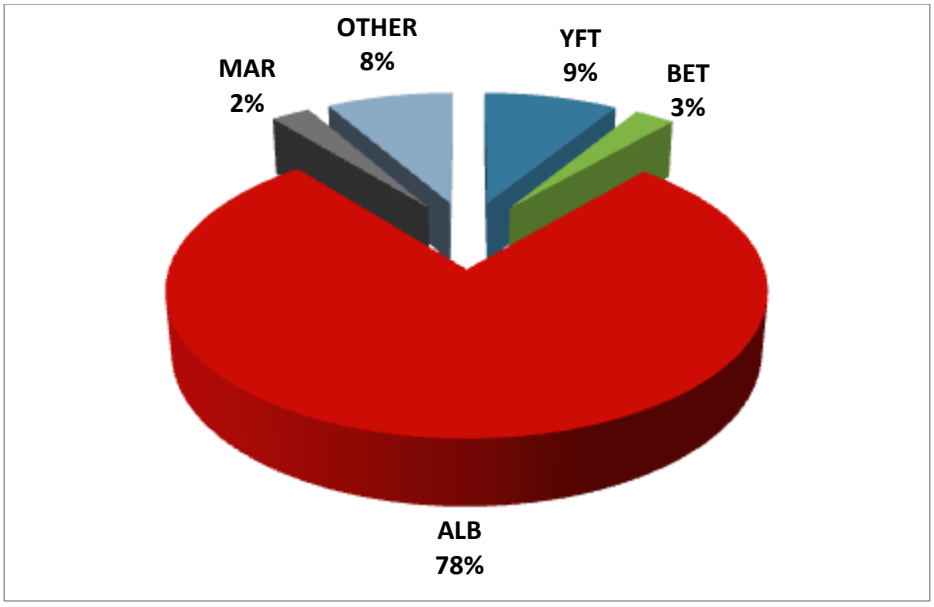

Figure 4 : Catch composition in 2013

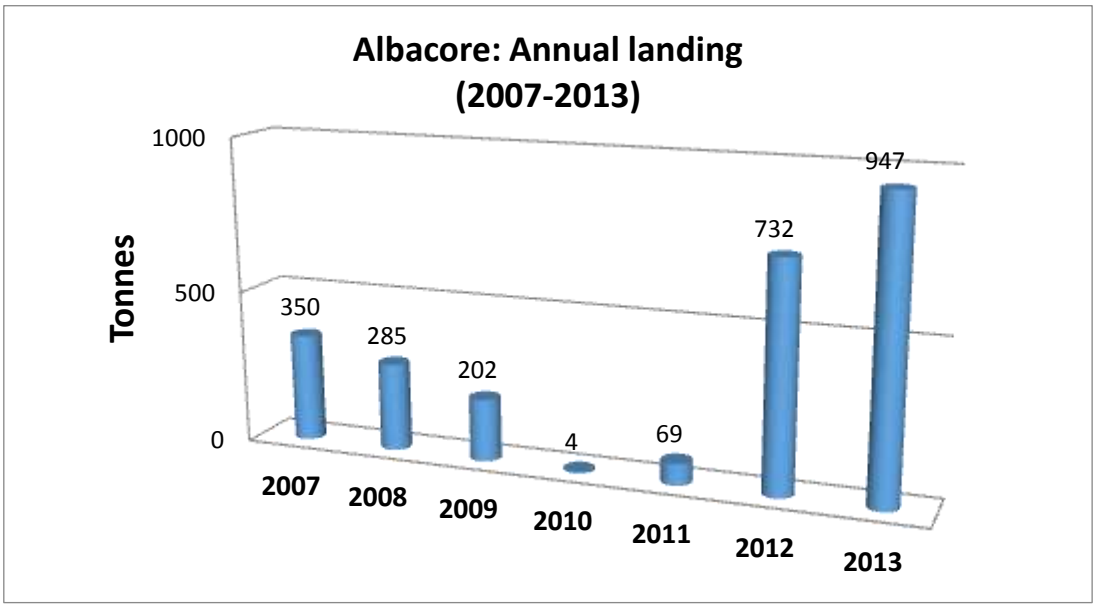

Figure 5 : Annual catch trend of albacore from 2007-2013

The annual catch of albacore from 2007-2013 ranged between 3.55 tonnes to 946.60 tonnes. The catch started to decreased from 2007 to 2009, before it increase rapidly in 2012 and 2013. In 2010, the previous longline company started having management problem before it stopped the operation in 2011 and a new company take over in 2012. Starting from 2012, there's an apparent increase in albacore catch

compared to previous years. The catch in 2012 was 732.12 tonnes and 2013 was 946.60 tonnes. The albacore catch increase from 349.62 tonnes in 2007 to 946.60 tonnes in 2013.This drastic increase was due to Malaysian longliners were targeting albacore solely after 2012 (Fig.5).

The trend of albacore tuna catch and CPUE in 2013

The highest number of albacore caught is in the month of November with 9276 individuals (205.23 tonnes) followed by July and June with 8949 individuals (138.32 tonnes) and 8663 (109.39 tonnes) respectively (Fig. 6 & Table 1). The lowest catch of albacore was in March with 141 individuals (2.74 tonnes). The CPUE in 2013 were analysed and result showed that the highest CPUE was in October with 57.82 fish/1,000 hooks followed by January (57.34 fish/1,000 hooks) and June (39.74 fish/1,000 hooks). The CPUE trend in 2013 showed a small fluctuations over the months.

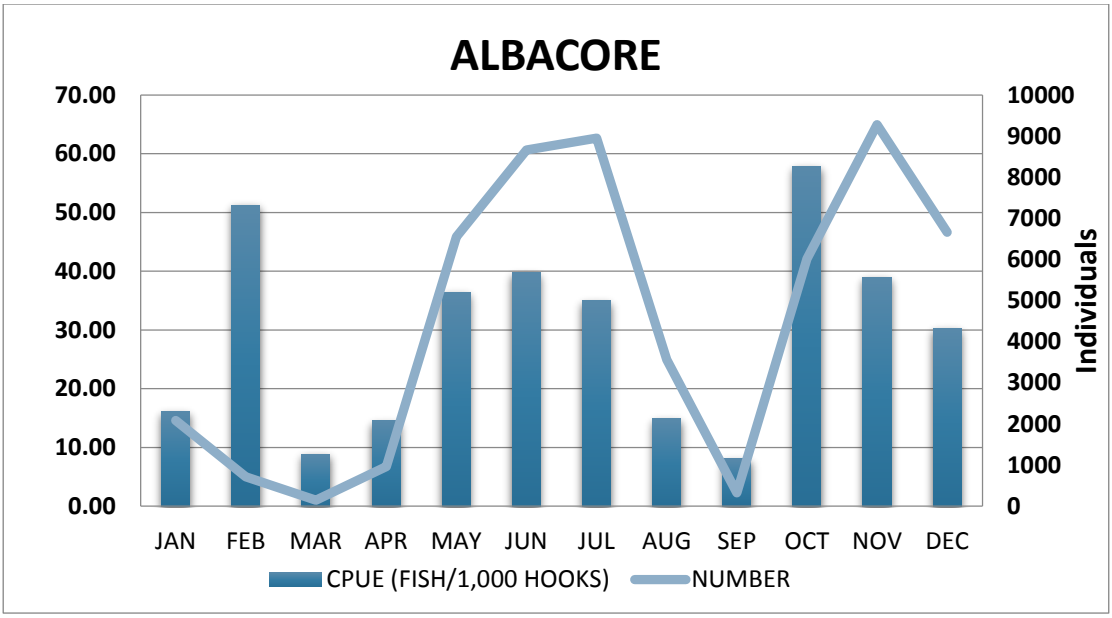

Figure 6 : Number and CPUE of albacore tuna by Malaysian flag longline vessels by month in 2013

Table 1 : Fishing efforts, catches and CPUEs of Malaysian longliners in the Indian Ocean for every month in 2013

Month	No. of hooks	No. of days	Total no. of fish	No. of albacore	Catches weight (tonnes)				CPUE (Fish/1,000 hooks)	CPUE of Albacore (Fish/1,000 hooks)
					ALB	YFT	BET	TOTAL		
JAN	130000	17	3401	2087	42.64	11.92	4.67	59.23	26.16	16.05
FEB	14000	26	1518	717	14.09	6.07	1.73	21.90	108.43	51.21
MAR	16000	3	259	141	2.74	0.60	0.25	3.59	16.19	8.81
APR	66000	7	1585	960	20.68	4.56	0.09	25.33	24.02	14.55
MAY	180000	15	7397	6552	72.88	7.12	4.27	84.26	41.09	36.40
JUN	218000	23	10223	8663	109.39	15.88	5.86	131.13	46.89	39.74
JUL	256000	28	11447	8949	138.32	31.60	7.13	177.05	44.71	34.96
AUG	240000	28	4832	3566	57.91	11.14	2.85	71.89	20.13	14.86
SEP	40000	24	424	323	6.55	0.44	0.15	7.14	10.60	8.08
OCT	104000	12	7012	6013	134.75	3.41	1.19	139.35	67.42	57.82
NOV	238000	25	11411	9276	205.23	6.85	1.39	213.47	47.95	38.97
DEC	220000	23	9959	6665	142.03	7.93	2.72	152.68	45.27	30.30

Conclusion

Catch and effort data for albacore from Malaysian flag vessels only covered for 7 years. Department of Fisheries Malaysia has requested a cooperation from the vessel operator to continue collecting data on albacore. From 2012 onward, the catch and effort data is expected to be improving as the recording system applied by the operator is in accordance with the format required by the IOTC.