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Catches of billfishes by the Malaysian tuna longliners targeting tropical and temperate tuna in the Indian Ocean.

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ABSTRACT

A total of 4 plus Malaysian tuna longliners plus one carrier began to fish for frozen albacore in the vicinity of southern Mauritius since the 3rd quarter of 2011. For this paper, the catch and effort data were analyzed from the record since 2003 to 2010 for tropical tuna and from January 2012 – June 2013 for temperate tuna. Swordfish and marlin contributed 6.85% and 6.34% respectively from the total tuna catch in weight. The highest catch of swordfish and marlin from temperate tuna fishing were recorded in at 7.7 tons (July 2012) and 9.7 tons (December 2012) respectively. Annualy catch ranges for both species vary greatly from 30 – 217 tons for swordfish and 35 – 225 tons for marlin. The average catch rate for swordfish and marlin were 0.36 ton/vessel and 0.31 tone/vessel respectively and 0.23 ton/vessel for sailfish. There were no record of sailfish caught by all the Malaysian tuna longliners and this require further consultation with the vessel operators to identify the problem.

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 10^0 N and 10^0 South. No Malaysian vessels were targeting billfishes. 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 langka 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 dolphinfish 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 shashimi markets while rejected tuna and bycatch fishes were exported countires 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 paticularly 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 joint 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 Langka and western Indian Ocean in vicinity of Seychelles and Mauritius waters. There were two transhippment ports used by Malaysian tuna vessels; Malaysian International Tuna Port (MIPT), Penang Malaysia and Prot Louis, Mauritus. 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.

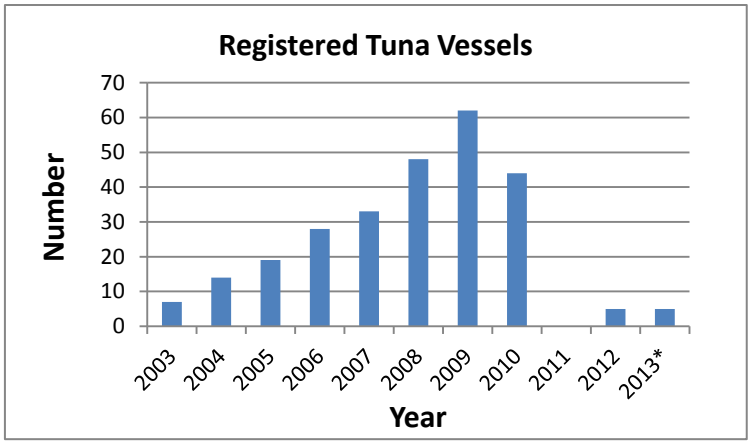

Figure 1: Registered tuna vessels under Malaysian flag operating in the Indian Ocean.

Catch Trend of Billfish

Billfishes are not the targes species for Malaysian tuna longline vessels. The billfishes were the by-catch of the Malaysian longliners. The by-catch species caught by the Malaysian fishing vessels included black marlin, striped marlin, swordfish, sailfish, sharks, skipjack, common dolphinfish and several other low value species. Figure 2 shows annual catches of marlin, swordfish and sailfish. Other bycatch species were grouped into mixed/miscellaneous species. From 2003 to 2005, sailfish catches were not recorded as a single group species, instead were included under miscelleneous species. Similar thing happened in 2012 and 2013 where catch of sailfishes were not recorded as a species, but declared as mixed fish with other bycatch species which attributed 7% from the total catches of the tuna longliners.

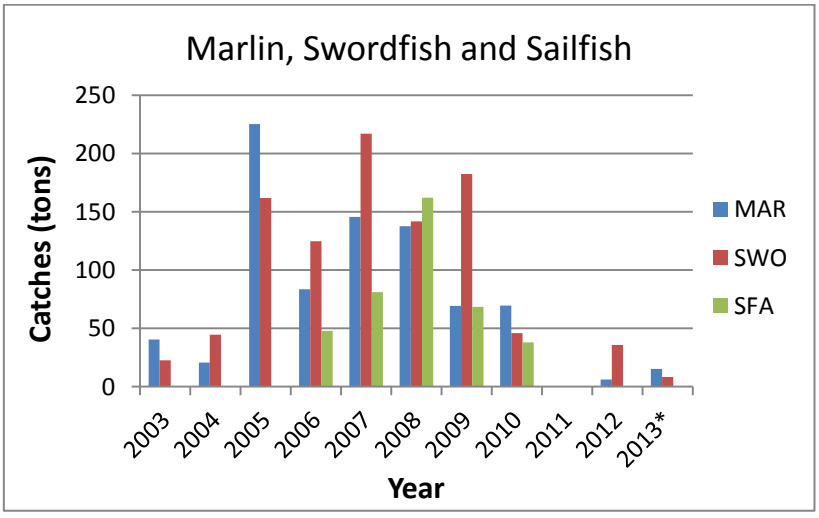

Figure 2: Total annual catch of marlins, swordfish and sailfish by Malaysian flag tuna vessels in the Indian Ocean.

Marlin species caught by the Malaysia longliners included black marlin(*Makaira indica*), blue marlin (*Makaira mazara*) and stripped marlin (*Tetrapturus audax*). They accounted between 2.6 – 6.6 % of total catches of the tuna longline vessels with the average 4.5 ± 2.0%. The highest catch was in 2006 with 225.3 tons and the lowest in 2012 at 6.0 tons.

Swordfish *(Xiphias gladius*) , local known as 'ikan todak' were caught along with marlin species. They made up between 2.7 – 7.6 % of the total tuna vessels catches with the average 5.5 ± 1.9%. The highest catch was in 2007 at 217 tons and in 2009 at 182 tons (Figure 2). Comparatively, the percentage of both marlin and swordfish caught by tropical tuna longlines and temperate tuna longlines were at the same percentage.

The catch of sailfish were only recorded as single species from 2006 – 2010. Before and after that period, the sailfish catches were grouped in miscellaneous/mixed fishes. The catch of sailfish ranged between 0.12 – 0.41% with the average 0.23%. The highest catch was in 2008 at 162 tons.

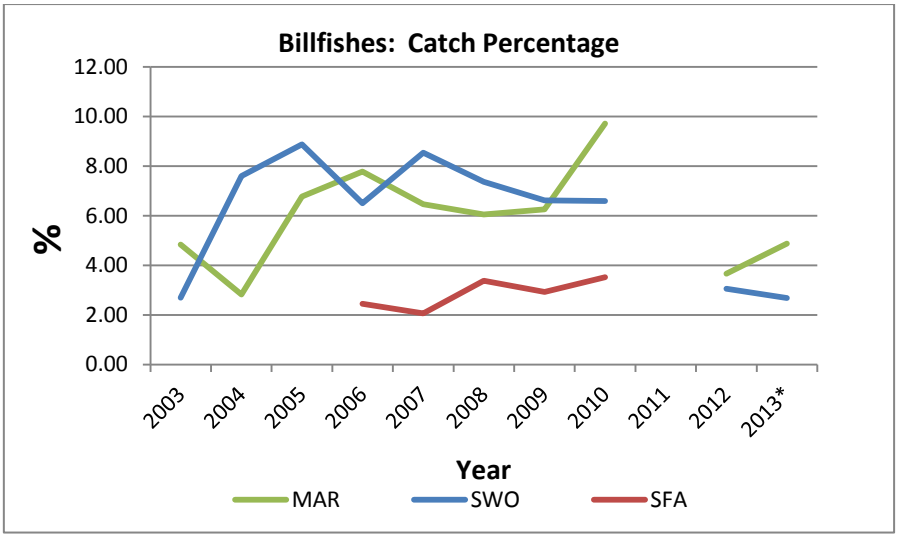

Figure 3: Percentage of billfish catch by Malaysian tuna vessel.

Figure 3 shows the trend of billfish catches (percentage) out of total landings by tuna vessels. The percentage seemed near constant from year 2005 to 2009 for marlin species and swordfish. The range of catches were between 6 – 8.2% and for sailfish, the range were between 2 – 4 %. However, the catch percentage of

billfishes by temperated tuna longliners were lower than that of the tropical tuna longliners. They ranged from 2.6% to 4.9% of the total catches.

Fishing Efforts

To analyze the catch rates of billfishes caught by the Malaysian tuna vessels the fishing efforts were estimated. For catches unloard by a single tuna vessel at the MITP Penang were the catches of 5 fishing vessels. Figure 4 shows the trend of fishing efforts by the Malaysian vessels unloaded the catches at the MITP Penang (2003 – 2010) and at the Port Louis Mauritius (2012 – June 2013). From year 2008, some vessels unloaded their catches at other fishing ports such as Port Louis Mauritius. That explained the decrease in fishing efffort during that period at the Penang MITP. In 2010, the number of tuna longline vessels registered under Malaysian flag decreasing to only 44 vessels from 60 vessels in previous year. And this further decreasee the fishing effort at the MITP Penang. In 2012 and 2013, with only 4 registered tuna vessels, the fishing effort were at 50 and 23 respectively.

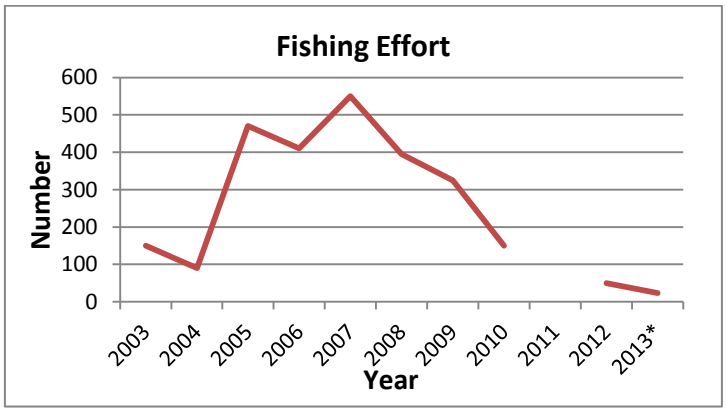

Figure 4: Trend of fishing efforts at MITP Penang from 2003 to 2013.

Billfish Catch Rates

Catch rates of 3 species of billfishes by Malaysian vessels were shown in Figure 5. From 2003 to 2010, the catch rates of marlin and swordfish fluatuated within the range of 0.2 – 0.6 tons/vessel For sailfish, the catch rates showed increasing trend from 0.1 ton/vessel in 2006 to 0.25ton/vessel in 2010. In 2012 and 2013, the catch rates of marlin by temperate tuna longliners were higher between 0.6 – 0.7 ton/vessel. But for swordfish, the catch rates declined from 0.6 ton/vessel in 2012 to 0.3 ton/vessel in 2013.

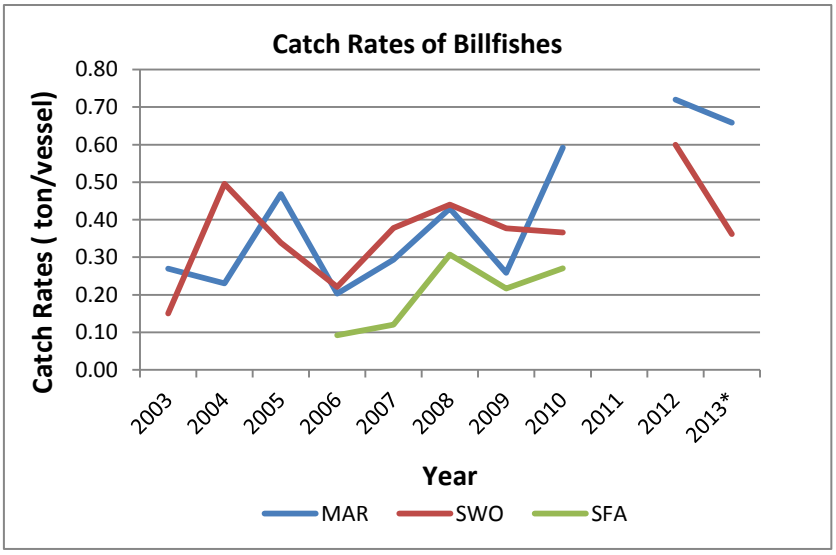

Figure 5: Catch rates of three common billfishes by Malaysian tuna vessels.

CONCLUSION:

Catch and effort data for billfishes from Malaysian flag vessels which consisted of tropical tuna and temperate tuna fisheries only covered for 10 years. Beside, the catch of saiflfish were not recorded as a single species and to overcome this, Malaysian Fisheries Authority has requested a cooperation from the vessel operator to overcome this issue. 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.