Updated on the implementation of the new Malaysia Logbook for tuna Fisheries in Indian Ocean.

Sallehudin, J[1], Samsudin, B[1].. Noor Hanis A.H[1], and Tengku Balkis T. S[2]. Nor_Azlin, M.[2]

Capture Fisheries Division,
FRI Kampong Acheh,
Department of Fisheries
32000 Sitiawan Perak.
Malaysia

[1]Capture Fisheries Division FRI Kg Acheh 3200, Sitiawan Perak, MALAYSIA
[2]Management and Licensing Division, Department of Fisheries, PUTRAJAYA , MALAYSIA

Abstract

As the need for conservation of the national marine resources increases, the need for more and better quality data on how these resources are utilized also increases. One of the most crucial data is the data for catch per unit effort. To meet these needs, Department of Fisheries Malaysia (DOFM) has started to implement vessel logbook programs since January 2018 and these programs were initiated for the pelagic longline fisheries. Fishermen are required to report the numbers of each species caught, the numbers of animals retained or discarded alive or discarded dead (longline gear is non-selective and unwanted or prohibited species such as, billfishes, sea turtles, etc., must be returned to the water), the location of the set, the types and size of gear, and the duration of the set. Since some of the needed catch/effort information for pelagic longline fisheries remains the same for the entire trip (i.e., it would be redundant to report it for every set), a supplemental form is used to report this type of data. The length frequency data form is the important part in this log book and this data requirement will be comply to the IOTC regulation.

1.0 Introduction

In geographical terms, Malaysian fisheries is divided into three regions; Peninsular Malaysia, Sabah and Sarawak. Peninsular Malaysia consists of two major fishing areas; the Strait of Malacca as part of Indian Ocean off the west coast of Peninsular and South China Sea in eastern coast, which together with Sarawak and Sabah. While Sabah fisheries include Sulu and Celebes Sea in the east coast Sabah. (Figure 1)

Figure 1: Malaysian fishing areas including the Straits of Malacca

1.1 Fisheries Sector Overview

Basically, the fisheries sector has three main subsectors, namely marine capture fisheries, aquaculture, and inland fisheries. The fisheries sector is an important sub-sector in Malaysia and plays a significant role towards the national economy. The fisheries sector contributed 1.07- 1.73% to GDP with more than 85% come from marine capture, and it provides employment for more than 79 000 fishermen and 20 000 fish farmers. Apart from contributing to the national Gross Domestic Product (GDP), it is also a source of employment, foreign exchange and a main and cheap source of protein supply, especially for the rural population in the country. Fish constitutes 60-70% of the national animal protein intake, with per caput consumption of 47.8 kg per year. The rate of demand for fish as the main source of protein is expected to increase from the current annual consumption of 630 000 tonne to over 1 579 800 tonne by 2020 (using an estimated population of 26 330 000 with a per caput consumption of 60 kg/year).

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Total estimate catch of marine fish from Malaysian waters in 2016 were 1.57 million mt, a slide increased 6% compared to 1.48 million in 2015. The total landing in 2016 were attributed to the catch from 56,111 registered vessels with trawlers, purse seines, drift nets contributed large percentage of the catches. In 2016, marine fish production from the west coast of Peninsular Malaysia (Malacca Straits) contribute 813,758 mt, which account for 51.8% out of the total catch. The remaining catches were from the South China Sea and Sulu Celebes Seas, east coast of Sabah. Coastal fisheries produced 76% (1,195,359 mt) and the rest were from offshore fisheries.

It is generally well accepted that the coastal fishery resources have been fully exploited. There is possibly

some extent of overfishing. Over the years, the DOFM has tried various measures in an attempt to reduce the coastal fishing effort.

Data Collection System.

2.1 Fisheries Statistics Data

The DOFM is responsible for the collection of national fisheries statistics. Administratively, the DOFM has set up offices at district and state levels in the country. District offices are responsible for collecting data of marine capture fisheries, aquaculture and inland capture fisheries. Each district office reports to the state office who then compile and submit to the headquarters where the data are processed and published in the Annual Fisheries Statistics (Volume 1) and uploaded in the DOFM website (www.dof.gov.my). These statistical data can be utilized to determine the status and trend of the fisheries. Furthermore, the information will be used to plan and create new policies and planning strategies for the development of the country's fisheries industry.

2 Tuna Landing sites

For the purpose of collection of marine fishes landing statistics, the DOFM divides the coastal belts into fisheries districts. There are 41 fisheries districts on the West Coast of Peninsular Malaysia, 18 on the East Coast, 15 in Sarawak and 12 in Sabah, giving a total of 68 fisheries districts. Landings data are gathered from all these districts, but the details are left out in the compilation of the Annual Fisheries Statistic published annually by the DOFM. Within each fisheries district, there can be several landing sites, so there are hundreds of landing sites throughout the country. Information on the quantity of fish landed at each of these landing sites is not available.

Landing of the tuna catch by Malaysia flag tuna vessels from the Indian Ocean in the port of Penang. Tuna port at Demaga Dalam Butterworth Penang was opened to the tuna vessels starting in 2017. Since the opening of the Penang Port as a hub of tuna landing, port inspection of tuna vessel, catch landings and sampling of tuna measurements was performed by staffs of DOFM.

Total catch and effort data collected from various tuna vessels are recorded in the computer system at the State Office and these data are then sent to the main database server in Fisheries Headquarters in Putrajaya. Recently the system has been upgraded where the data are keyed in from the district office computer system with direct network to the database server in the State office via a Wide-Area network. Data from the state database are then forwarded to the main server in Putrajaya also through the leased line. DOFM

Headquaters in Putrajaya uses a RISK UNIX based machine with Oracle data Base management System. Data processing is basically done using fixed application program to convert the data to structure report. The final product is the Annual Fisheries Statistical Bulletin.

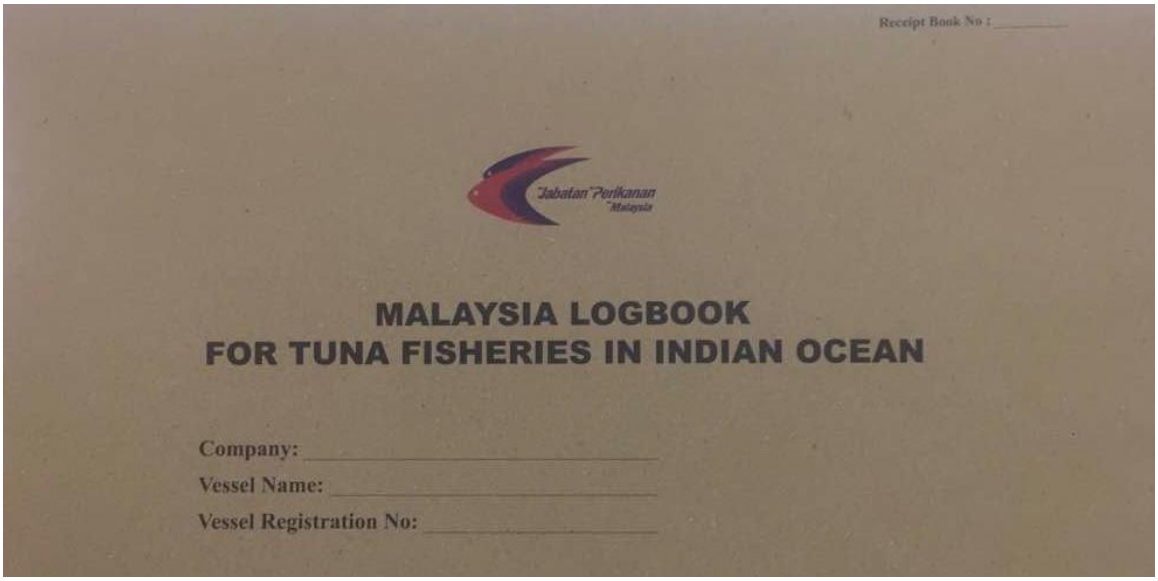
Logbook Programs

Logbook report submitted by fax or email to fisheries headquarters in Putrajaya. In order to ensure the operators of tuna fill in the logbook during fishing activities and not missing sheet, there is a serial number in each sheet of logbook (Figure 2). Information of vessel must be filled including number of the hook as an effort. The total number and the weight of catches were recorded for each single-species tuna and tuna-like species. Each species from shark and endangered sharks, marine mammals, and sea birds that was accidentally caught should be recorded whether released or dead together with their fishing position and the date of activities.

To meet a compliance of IOTC, measuring of length and weight by individual tuna caught has to be done by fishers and recorded in length frequency table. During port inspection of tuna vessel by staffs of DOFM, measurements length and weight activities of tunas was also done by technical staffs.

In the early implementation stage to fill up the form, there was a few confusing such as how to measure and how many sample will be collected but through explanation and technical support by DOFM officer in charge, this problem has been solved.

Catch Report Form



MALAYSIA

Flag: MALAYSIA	Gross Tonnage□□位:	Gear Configuration: Long Liner
Name of Vessel船名:	Hold Capacity□□容□:	Setline Length(m):
Registration No. 登□□□:	Vessel Length (m):	Branchline Length(m):
International Call Sign: IMO No:	Name of Captain船□名:	Floatline Length(m):
IOTC No:	Number of Crew船□人□:	Length between branches(m):
Vessel's Owner船□:	Report Date:	Type of bait :
Address地址:	Report By:	No of Hooks:
		Day in fishing area:

Departure

Mth	Day	Year	Port 出港港口	

Arrival

Mth	Day	Year	Port 出港港口	

FISHING OPERATION

Day	Date		Position		Sea Water Temp	No of Hooks	Southern Bluefin Tuna (SBF)		Yellowfin Tuna (YFT)		Bigeye Tuna (BET)		Albacore (ALB)		Skipjack Tuna (SKJ)		Swordfish (SWO)		Striped Marlin (MLS)		Blue Marlin (BUM)		Black Marlin (BLM)		Indo-Pacific Sailfish (SFA)		Shortbill spearfish (SSP)		Other Bony Fish (MZZ)		Total	
	日期		□□度		水□				串仔		大目		□串				□旗		旗□						旗□		其他				□□	
	mth	day	Lat N/S	Long E/W	C	No.	No.	Kg.	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg	No.	Kg.	No.	Kg
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Day	Date		Position		Blue Shark (BSH)		Mako Shark (MAK)		Tiger Shark (TIG)		Crocodile Shark (PSK)		Great White Shark (WSH)		Porbeagle Sharks (POR)		Hammerhead Sharks (SPN)		Silky Sharks (FAL)		Thresher Sharks (THR)		Oceanic Whitetip Sharks (OCS)		Other Sharks (SKH)		Seabirds		Marine Mammals (MAM)		Marine turtle (TTX)	
	日期		□□度																													
	mth	day	Lat N/S	Long E/W	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D
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SIZE FREQUENCY

No.□ of□ Fish	Southern Bluefin Tuna (SBF)		Yellowfin Tuna (YFT)		Bigeye Tuna (BET)		Albacore (ALB)		Skipjack Tuna (SKJ)		Swordfish (SWO)		Striped Marlin (MLS)		Blue Marlin (BUM)		Black Marlin (BLM)		Indo-Pacific Sailfish (SFA)		Shortbill spearfish (SSP)		Blue Shark (BSH)		Mako Shark (MAK)		Tiger Shark (TIG)		Crocodile Shark (PSK)		Great White Shark (WSH)		Porbeagle Sharks (POR)		Hammerhead Sharks (SPN)		Silky Sharks (FAL)		Thresher Sharks (THR)		Oceanic Whitetip Sharks (OCS)	
	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)	Weight (gram)	*Fork Length* (□cm□)
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Figure 2: Malaysian logbook for tuna fisheries in Indian Ocean

CCTV Monitoring system

Further action has been taken by DOFM to implement monitoring tuna vessel by CCTV. The CCTV connection system for installation as shown in figure 3. The objective of this action is to monitor tuna vessels that were involved in any illegal activities and to be replace observer on board. In April 2018, three tuna longline vessels were selected to install with 24 hour CCTV (night vision) in front and rear views of vessel. The system able to keep the data within 6-month period. The first data storage was collected in October 2018 in one of tuna vessel and all the data are still in the observation procedure by technical staffs. If any suspicious activities of illegal activities was recorded, DOFM will show the cause letter to the owner of tuna vessel.

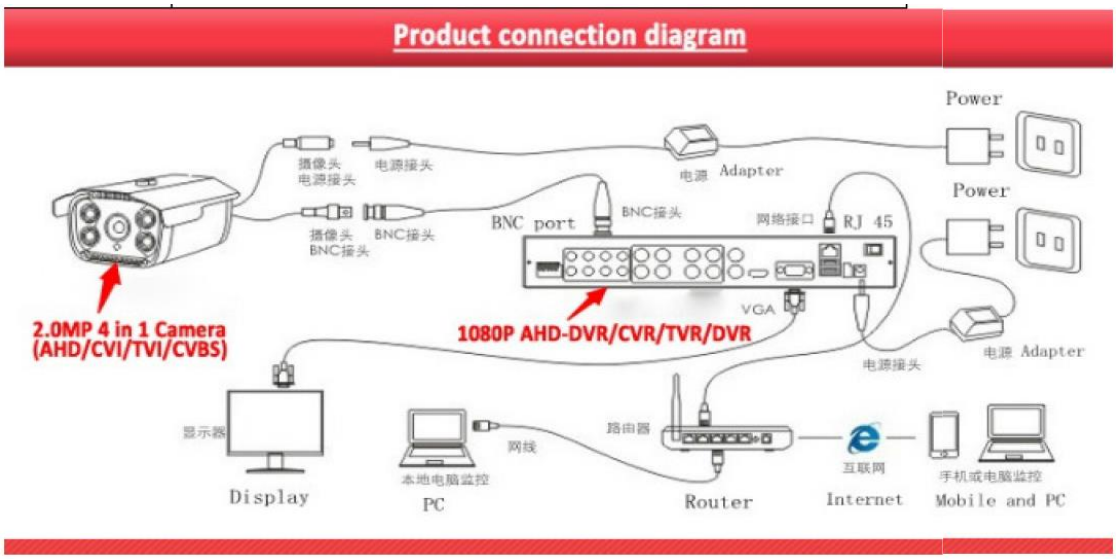

Figure 3. show the diagram of CCTV installation.

Conclusions

The DOFM is always working to improve our performance in implementation logbook to meet IOTC compliance. Data collection through logbook is seem to have a positive impact in the data collection process especially in the collection of long tuna frequency data. The installation of CCTV is expected to have a positive impact in order to prevent the involvement of tuna vessels in illegal activities such as transhipment. Installation of CCTV 24-hours version is expected to help in overcoming observer on board work on tuna vessels.