

High Seas Billfish Catches by Kenyan Longliner

Collins K. Ndoro¹, Stephen W. Ndegwa²

¹ State Department for Fisheries and Aquaculture and the Blue Economy, Ministry of Agriculture, Livestock, fisheries and Irrigation, P.O Box 90423-80100, Mombasa Kenya.

² State Department for Fisheries and Aquaculture and the Blue Economy, Ministry of Agriculture, Livestock, fisheries and Irrigation, P.O Box 48511- 00100 Nairobi, Kenya

Abstract

A Kenyan long liner fished in the high seas during the period of July to November 2017. A total of 74 lines were set during the fishing voyage. The number of fish caught was 2,577 weighing a total weight of 51,278 Kg, recorded in the five months of fishing expedition. For the billfishes, a total of 164 pieces of fish with a total weight of 4,442 Kg belonging to three species were recorded. The species recorded included *Makaira indica* (Black marlin) *Xiphias gladius* (Swordfish) and *Istiophorus platypterus* (Indo-Pacific sailfish). Numerically, the three species had 73, 54, 37 pieces of fish respectively. In terms of weight, *Xiphias gladius* had 2,141Kg, *Makaira indica* had 1,916 Kg and 385 Kg was recorded for *Istiophorus platypterus*. Most of the weight was recorded in November (1,809Kg), September (1,215Kg) and August (673 Kg). October and July recorded the least weight of 515 Kg and 230 Kg respectively. *Xiphias gladius* was caught in all five months while *Istiophorus platypterus* was caught in three months. The billfish catches represented 8.7 % of the total catches during the five months fishing period.

1.0 Introduction

A Kenyan longliner namely FV Shangy Jyi was authorized to fish in the high seas in 2017, targeting Tuna and Tuna like fish species. The vessel fished in areas off the EEZ of Mauritius, Reunion and Madagascar (Fig. 1). The vessel fished for five months covering a period from July to November 2017. A similar fishing voyage had been done in the Kenyan EEZ in 2016 covering the same period (Fig. 2). This paper provides information on the Billfish landed during this fishing voyage.

2.0 Material and methods

The Study areas are the High seas off the EEZ of Mauritius, Reunion and Madagascar. The data was collected and recorded in Excel sheets by the ship captain and sent to the Fisheries Office on weekly basis. Excel was used to analyze the data.



Figure 1. A map showing the fishing points in the High seas covered by FV Shangy Jyi in 2017.

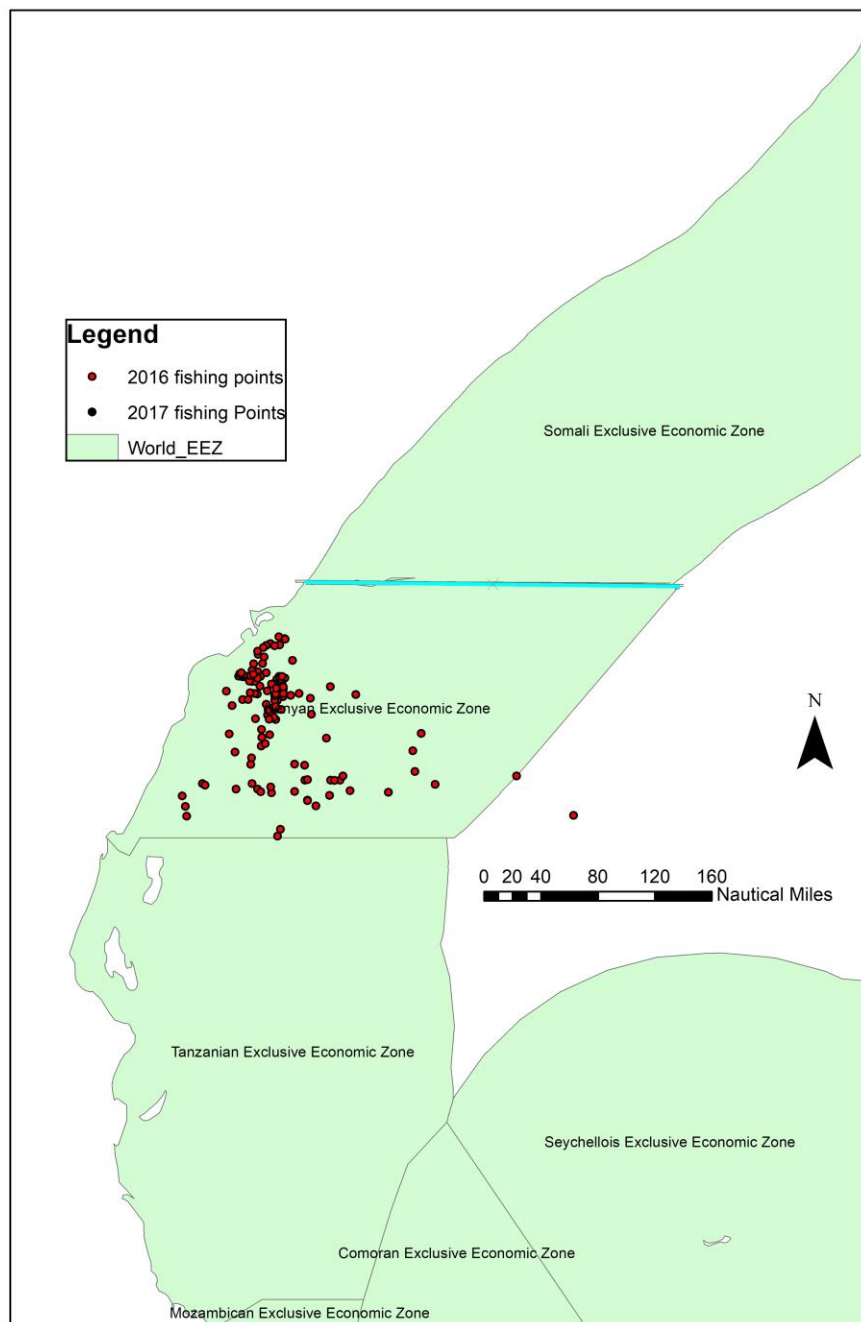


Figure 2. A map showing the fishing points in the Kenyan EEZ overed by FV Shangy Jyi in 2016

3.0 Results

3.1 Species composition

A total of 2,577 individuals were recorded with a total weight of 51,278 Kg during the five months fishing period (Table 1). Three species of billfishes were recorded during the five months period. The species included *Makaira indica*, *Xiphias gladius* and *Istiophorus platypterus* which had a total of 164 individuals with a total weight of 4,442 Kg. The three species represented 4.2, 3.7 and 0.8 % respectively of the total catch (Table 1).

Table 1. Percentage composition of the catch by fish species

Species Caught	Total Weight (Kg)	Total Number of individuals	Average weight (Kg)	% number	% weight
<i>Thunnus alalunga</i>	14,235	852	16.7	33.1	27.8
<i>Thunnus albacares</i>	9,151	336	60	13	17.8
<i>Thunnus obesus</i>	7,527	213	35.3	8.3	14.7
<i>Sphyrna zygaena</i>	3,354	136	24.7	5.3	6.5
<i>Prionace glauca</i>	1,600	95	16.8	3.7	3.1
<i>Carcharhinus limbatus</i>	624	56	11.1	2.2	1.2
Other assorted fish	10,345	725	14.3	28.1	20.2
<i>Xiphias gladius</i>	2,141	54	39.6	2.1	4.2
<i>Makaira indica</i>	1,916	73	26.2	2.8	3.7
<i>Istiophorus platypterus</i>	385	37	10.4	1.4	0.8
Grand Total	51,278	2,577		100.0	100.0

The species *M. indica*, *X. gladius* and *I. platypterus* recorded 73, 54, 37 individuals respectively (Fig. 3)

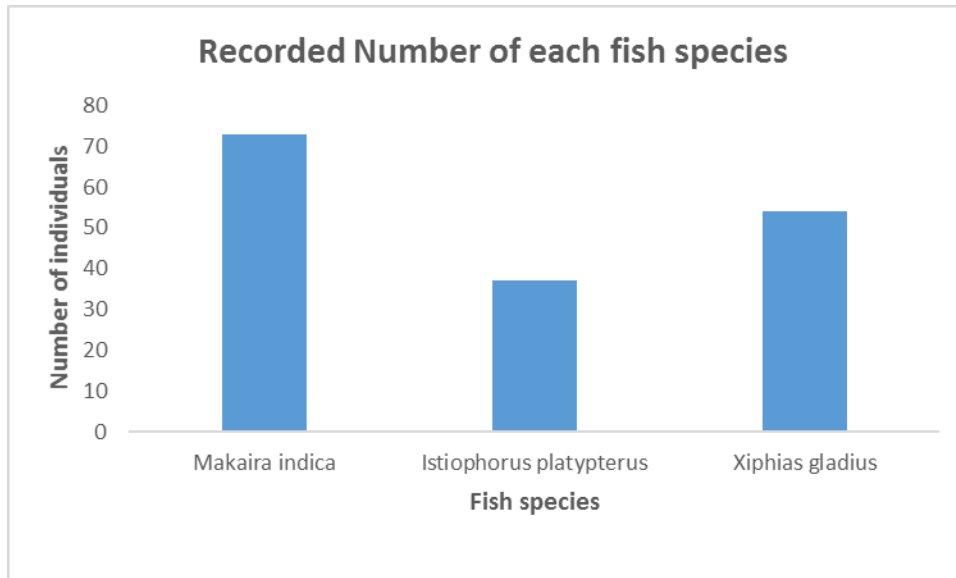


Figure 3. A bar chart showing the number of each species landed during the study period

The species *X. gladius* recorded most of the weight of 2,141Kg while *M. indica* had 1,916 Kg and 385 Kg was recorded for *I. platypterus* (Fig. 4).

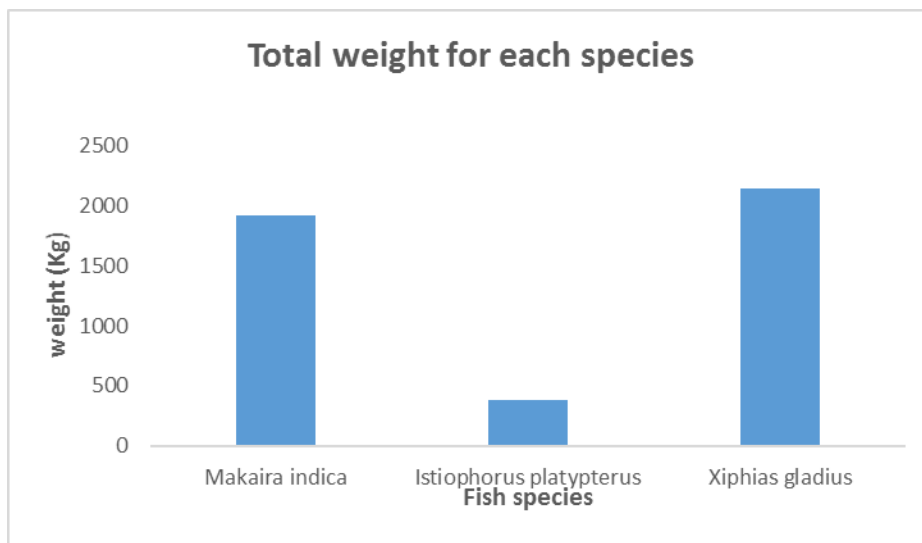


Figure 4. A bar graph showing the weight of each species landed during the study period.

3.2 Monthly Billfish Catches

More individuals were caught in the month of November (104), September (27) and August (16). The months of October and July recorded the least number of individuals of 10 and 7 respectively (Fig.5).

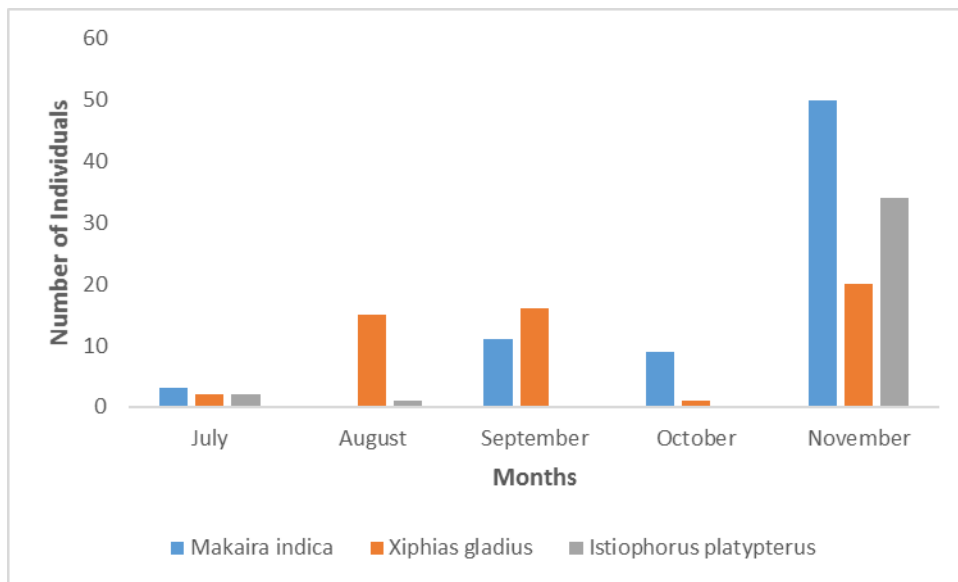


Figure 5. A bar graph showing the number of fish landed for each species in every month.

Most of the fish was caught during the month of November (1,809 Kg), September (1,215Kg) and August (673 Kg) October and July recorded the least weight of 515 Kg and 230 Kg respectively. *Xiphias gladius* was caught in all five months while *Istiophorus platypterus* was caught in three months (Fig. 4).

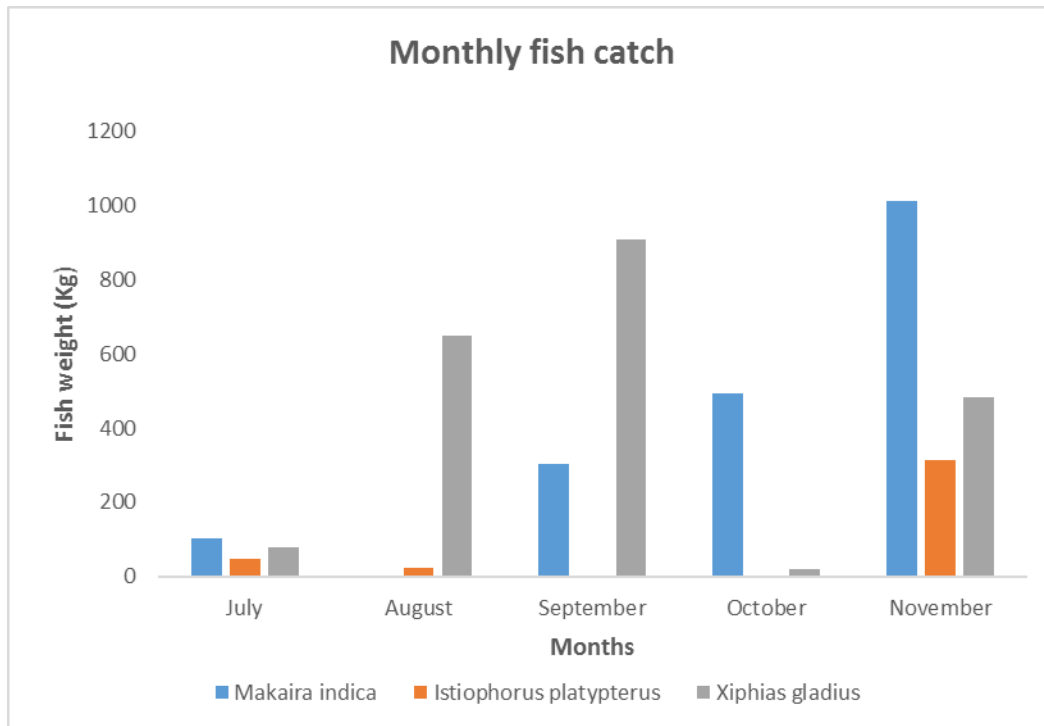


Figure 6. A bar graph showing the fish weight for all species for every month

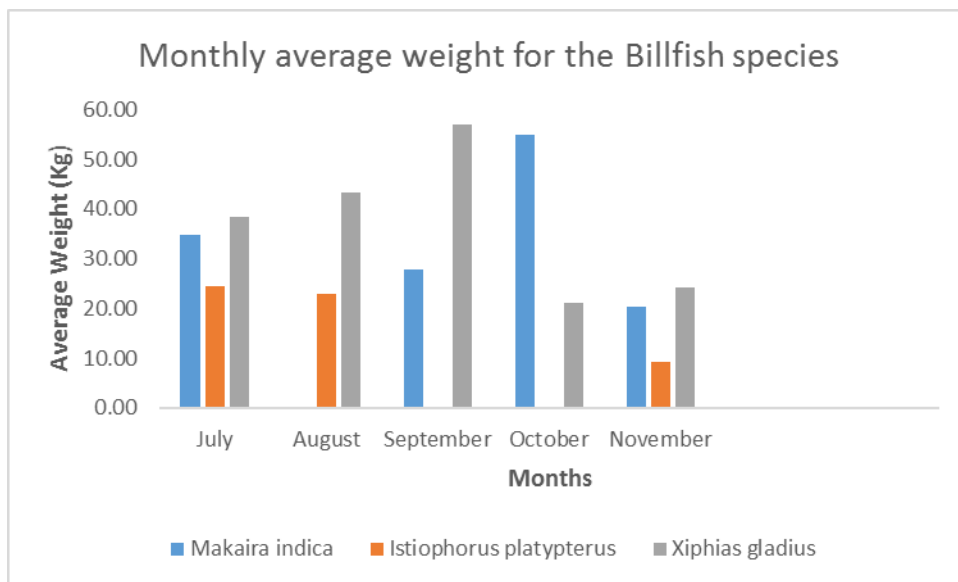


Figure 7. A bar graph showing the average fish weight for each species in every month.

Table 2 summarizes data from the same long liner fishing in the Kenyan EEZ during the same period in 2016. The table shows that a total of 673 individuals were recorded which had a total weight of 18,229 kg. *Xiphias gladius* had a total of 589 pieces while *Makaira indica* and *Istiophorus platypterus* recorded 79 and 5 pieces respectively. The fish weighed 14,871, 3260 and 98 kg respectively. *Istiophorus platypterus* was only recorded in the month of November.

Table 2: A table showing the number of fish pieces recorded with their respective weights for the three bill fish species caught in Kenyan EEZ during July-November 2016 Period.

		<i>Makaira indica</i>	<i>Istiophorus platypterus</i>	<i>Xiphias gladius</i>	<i>Total</i>
Jul-16	Pieces	14	0	116	130
	Weight (Kg)	479.00	0.00	2558.00	3037
	Average weight (Kg)	34.21	0.00	22.05	23
Aug-16	Pieces	10	0	59	69
	Weight (Kg)	343.00	0.00	2234.00	2577
	Average weight (Kg)	34.30	0.00	37.86	37
Sep-16	Pieces	2	0	189	191
	Weight (Kg)	134.00	0.00	4063.00	4197
	Average weight (Kg)	67.00	0.00	21.50	22
Oct-16	Pieces	21	0	131	152
	Weight (Kg)	1022.00	0.00	3393.00	4415
	Average weight (Kg)	48.67	0.00	25.90	29
Nov-16	Pieces	32	5	94	131
	Weight (Kg)	1282.00	98.00	2623.00	4003
	Average weight (Kg)	40.06	19.60	27.90	31
Total	Pieces	79	5	589	673
	Weight (Kg)	3,260.00	98.00	14,871.00	18,229.00
	Average weight (Kg)	41.27	19.60	25.25	27.09

4.0 Discussions/Conclusion

Billfishes make a significant by-catch of the longliner FV Shangy Jyi. The main billfish species caught by the vessel are the *Makaira indica* (Black Marlin) *Xiphias gladius* (Swordfish) and *Istiophorus platypterus* (Indo-Pacific sailfish). *Makaira indica* is the most abundant species by numbers while *Istiophorus platypterus* is the least abundant. *Xiphias gladius* recorded the highest quantity of catch by weight while *Istiophorus platypterus* had the lowest catch weight. From the two landings i.e, 2016 and 2017, most of the billfish are caught in the months of September, October and November and also the vessel caught more billfish from the Kenya EEZ than from the High seas.

5.0 Acknowledgements

We sincerely thank you the operators of FV Shangy jyi; Sandiago Holdings for their cooperation in data collection and recording which has enabled us to carry out the study.