

Billfish caught in the recreational and sport fishing of south coast of Mozambique: Results of the first census of recreational and sport fishing in 2007 and the sampling program in 2012.

Rui J. Mutombene¹

¹ **Instituto Nacional de Investigação Pesqueira**

Av. Mao Tsé Tung, nr.389, P.O.Box 4603. Maputo, Mozambique

Abstract

Despite recreational fishery in Mozambique has been practiced in different modalities, ranging from shore (without boat) to offshore boat based, it was found billfish only in offshore boat based recreational fisheries. These fishes are caught either in recreational fishery for leisure or within the fishery competition (sport fishery). In both modalities (offshore recreational and sport) the gear used to target billfish is hook and line operated with a fishing rod and manual reel. In these fisheries the billfish represent the trophy and the specimens are usually released alive.

The results of the first census of recreational fisheries in south coast of Mozambique performed in 2007 revealed that billfish was one of the main target groups in recreational fisheries, together with Narrow-barred Spanish mackerel, yellowfin tuna and other tropical tunas. According with the census the main representative billfish species in south coast was the indo-pacific sailfish, but in the subsequent years the monitoring program revealed that black marlin is equally and even more represented in the catches of sport fisheries.

In 2012, it was estimated billfish to represent 12% of the total catch in weight of sport fishery. The species of billfish recorded was black marlin with an estimated number of ten individuals captured. The lengths of the specimens ranged from 280 to 350 cm. There was no catches of billfish recorded in offshore recreational fishery for leisure.

1. Introduction

Billfish occurring along the Mozambican marine waters include *Istiophorus platypterus* (indo-pacific sailfish), *Makaira indica* (black marlin), *Makaira mazara* (blue marlin), *Tetrapturus angustirostris* (shortbill spearfish), *Tetrapturus audax* (striped marlin) and *Xiphias gladius* (swordfish) (Fischer *et. al.* 1990).

According to the Recreational and Sport Fishing Regulation of Mozambique (Decree 51/99 of August 31st), these group of fishes are considered as fishing trophy. In the Recreational and Sport fishing only catch and release is authorized for billfish and retain of billfish are only permitted throughout a special licence.

This brief report provides the summary information on the billfish species composition targeted by recreational and sport fishing. The results here presented are based in the information of the first census of recreational and sport fisheries in Mozambique performed in 2007 in the south coast of Mozambique and also on the results of the sampling program undertaken in 2012 by the Fisheries Research Institute of Mozambique.

2. Information on billfish according to the results of the first census of recreational and sport fishing in Mozambique

The first census of recreational and sport fisheries in Mozambique was performed in 2007. The census covered the area from 21°S to 26°S comprising the coast of Maputo province, Gaza province and Inhambane province. A structured questioner was addressed to sport and recreational fishers and managers of the coastal resorts.

The census did not cover the area north of parallel 21°S (central and northern coast) due logistical limitations. Also at that time the preliminary information indicated that recreational and sport fishing was more active in the southern coast where coastal tourism was more developed and where the main nautical clubs area based and normally operate.

The information on which are the modalities of the recreational fishery are practiced in Mozambique, and species composition of the catch of each modality where assessed. The results of the census formed the basis for implementation of a continuous monitoring program for recreational fisheries in the south of Mozambique in subsequent years and also gave lesson on how to move for assessment of the other area relevant for this practise.

The results of the census revealed that billfish are caught either in the fishing competitions (sport fishery) or recreational fishery. In both, the gear used to target billfish is hook and line operated with a fishing rod and manual reel. The operations are boat based (fibreglass; 3-9m length), mainly confined in the southern region (21°S to 26°S) and practitioners include both national and foreign fishers.

In Mozambique, billfish are one of the main targets gamefishes in sport fishing, together with Narrow-barred Spanish mackerel, yellowfin tuna and other tropical tunas (Torres 2008). According with the census the main representative billfish species in south coast was the indo-pacific sailfish (Table 1 and Table 2).

Table 1. Catch composition of the recreational fishing in southern Mozambique. Source: Torres 2008.

Place/area	Species / group		Estimates of CPUE individuals/boat.day
Maputo city	<i>Scomberomorus commerson</i>	Pelagic	4
	Tunas	Pelagic	3
	Carangids / trevallies	Pelagic	3
	<i>Istiophorus platypterus</i>	Pelagic	Rare/ catch and release
	<i>Scomberoides spp/ wahoo</i>	Pelagic	3
	Groupers	Demersal	4
	<i>Sphyraena spp</i>	Bento-pelagic	4
Maputo Province	<i>Scomberomorus commerson</i>	Pelagic	3
	Emperors	Demersal	3-4
	Groupers	Demersal	3-4
	Seabreams	Demersal	2
	Parrotfish	Demersal	1
	<i>Diagramma pictum</i>	Demersal	3
	<i>Cheimerus nufar</i>	Demersal	3-4
	<i>Sphyraena spp</i>	Bento-pelagic	1
	Snappers	Demersal	1
	<i>Chrysoblephus puniceus</i>	Demersal	4-5
	<i>Rachycentron canadum</i>	Pelagic	1
	Carangids / trevallies	Pelagic	2
Gaza Province	Groupers	Demersal	5-10
	Carangids / trevallies	Pelagic	4
	<i>Chrysoblephus puniceus</i>	Demersal	10
	<i>Scomberomorus commerson</i>	Pelagic	3-10
	<i>Istiophorus platypterus</i>	Pelagic	Rare/ catch and release
	<i>Cheimerus nufar</i>	Demersal	3-5
	<i>Polysteganus coeruleopunctatus</i>	Demersal	4

Table 2. Annual catch composition of sport fishing in 2007. Source: Torres 2008

Species	Family	Maputo City (kg)	Guinjata bay (Inhambane) (Kg)
<i>Acanthocybium solandri</i>	Scombridae	137.8	
<i>Auxis thazard</i>		44.8	
<i>Euthynnus affinis</i>		95.5	98.46
<i>Scomberomorus commerson</i>		943.4	630.38
<i>Thunnus alalunga</i>		14.3	132.62
<i>Thunnus albacares</i>		1374.5	54.38
<i>Thunnus obesus</i>			128.72
<i>Thunnus tongol</i>			122.64
<i>Katsuwonus pelamis</i>			45.1
Sub total			2610.3
<i>Caranx heberi</i>	Carangidae	5.9	
<i>Caranx ignobilis</i>		29.7	49.26
<i>Scomberoides commersonnianus</i>		7.2	
Sub total		42.8	49.26
<i>Aprion virescens</i>	Lutjanidae	37	
Sub total		37	
<i>Coryphaena hippurus</i>	Coryphaenidae	261.8	
Sub total		261.8	
<i>Rachycentron canadum</i>	Rachycentridae	39.8	129.61
Sub total		39.8	129.61
<i>Sphyraena barracuda</i>	Sphyraenidae	11.6	13.5
Sub total		11.6	
<i>Istiophorus platypterus</i>	Istiophoridae	39.8	
Sub total		39.8	
Other species		13.8	359
Sub total		13.8	359
Total		3056.9	1750.17

3. Results of the sampling program in 2012

The sampling program for recreational and sport fisheries has been implemented by IIP since 2008 after the census and other previous research initiatives conducted by IIP in collaboration with ORI (Oceanographic Research Institute of SA). Monitoring of recreational fishing is based on logbooks, which IIP provides to the coastal resorts. The logbooks are voluntarily filled by the practitioners per outing/fishing day and then returned to the resorts. Despite this system is in place since 2008 the level of logbooks returned to IIP is low, less than 5 %, mainly associated with logistical limitation of IIP to regularly move their technical staff to collect them on the resorts across the coastline.

Sport fishing is monitored throughout sampling on landing sites when a fishing tournament takes place. The level of coverage of this is reasonable in the southern coast but as said before no sampling is being conducted in the central and north region.

The results presented here are based on sampling program during the year 2012. The catch composition of tuna and tuna-like species caught during fishing competitions in south coast Mozambique is presented in Table 3. The monitoring of recreational and sport fishing in 2012 was only confined to Maputo Province due to logistical limitation thus, according with the information registered the black marlin was the main billfish targeted by sport fishing. It was estimated that the billfish represented 12% of the total catch in weight of sport fishery. During the same year, there was no catches of billfish recorded in offshore recreational fishery, out of fishing tournaments.

Table 3. Annual catch composition of tuna and tuna-like species caught by sport fishing (south region: Maputo province).

Species	Catch (kg)	Catch (number)	Effort (Boat.days)	CPUE (kg/boat.day)
<i>Makaira indica</i>	1149.6	10	698	1.6
<i>Thunnus albacares</i>	1299.6	180	698	1.9
<i>Katsuwonus pelamis</i>	2010.6	300	698	2.9
<i>Thunnus alalunga</i>	218	36	698	0.3
<i>Thunnus obesus</i>	1049	60	698	1.5
<i>Scomberomorus commerson</i>	2225.2	268	698	3.2

Length distribution of some specimens of black marlin caught during the fishing competitions in Maputo is presented in the table below.

Table 4. Length distribution of Black marlin recorded in fishing tournaments in Maputo (south region).

TL(cm)	<i>Makaira indica</i> (Frequency)
280	1
330	1
350	1
N	3

4. Final remarks

The results of the first census of recreational fisheries in Mozambique performed in 2007 revealed that billfish was one of the main target groups in recreational and sport fishing. The main representative billfish species in south coast was the indo-pacific sailfish, but in the subsequent years (2012), the monitoring program revealed that black marlin is equally and even more represented in the catches of sport fisheries.

It is recognized that coverage of monitoring recreational and sport fishing in Mozambique is low; less than 5% and only confined to same areas of the south coast. Thus, it urges to put in place a more effective system that may allow to gather more information and have a spatial-temporal coverage. One suggestion is to have catch and effort data submitted by competition organizers, resort managers and individual fishers as a permit conditions. IIP should be uncharged of collecting biological information when needed and also to conduct a regular 5 year census of the recreational and sport fishing. It will be necessary in the future to quantify the total amount of billfish caught and released and also the real amount of specimens retained. The last point can be assessed based on number of special licences issued for trophies but this would be likely underestimated.

Costal tourism activity is growing faster during the last decade in Mozambique. And considering that recreational and sport fishing constitute an attractive for both domestic and foreign tourists it is recommended an improvement in the level of coverage of these fishing activities to ensure that more accurate statistic information is being collected.

References

- Decree 51/99 of August 31st. (1999). Regulation of Mozambique Recreational and Sport Fisheries. Ministério das Pescas. Mozambique..
- Fischer, W., Sousa, I., Silva, C., Freitas, A., Poutier, J.M., Schneider, W., Borges, T.C., Feral, J.P. & Massinga A. (1990). Guia de Campo para Identificação das Espécies Comerciais Marinhas e de Águas Salobras de Moçambique. FAO, Roma.424pp.
- Torres, R. (2008). Relatório do Censo da Pesca Recreativa e Desportiva no Sul de Moçambique (Maputo Cidade, Maputo Província, Gaza e Inhambane). IIP. Maputo. 28pp.