

**Mozambique National Report to the Scientific Committee of the Indian Ocean Tuna
Commission, 2012**

NOVEMBER, 2012

prepared by

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Information on Fisheries, Research and Statistics

<p>In accordance with IOTC Resolution 10/02, final scientific data for the previous year was provided to the Secretariat by 30 June of the current year, for all fleets other than longline [e.g. for a National report submitted to the Secretariat in 2012 final data for the 2011 calendar year must be provided to the Secretariat by 30 June 2012)</p>	<p>The country has foreign fleet.</p>
<p>In accordance with IOTC Resolution 10/02, provisional longline data for the previous year was provided to the Secretariat by 30 June of the current year [e.g. for a National report submitted to the Secretariat in 2012, preliminary data for the 2011 calendar year was provided to the Secretariat by 30 June 2012).</p> <p>REMINDER: Final longline data for the previous year is due to the Secretariat by 30 Dec of the current year [e.g. for a National report submitted to the Secretariat in 2012, final data for the 2011 calendar year must be provided to the Secretariat by 30 December 2012).</p>	<p>Yes</p> <p>20th September 2012.</p>

Executive Summary

Purse seine and long line are the two main fishing techniques used in Mozambique in the tuna fishery. Those activities are undertaken by distant water fishing fleets, which operate in the EEZ as from 12 nautical miles off shore from January to December.

Purse seine fishing occurs mainly between the parallels 10° 32' and 20° south. The purse seine fleet is composed of vessels from France, Spain and Seychelles. Long line fishing occurs between 20° and 26° 52' south, with particular intensity below parallel 25° south. For the purse seine fleet, the peak period of fishing activities occurs between March and June. The longline fleet operates from January to December in Mozambique waters and the peak period is from December to February. During the last 5 years, the longline fleet was composed of vessels from Belize, Panama, Cambodia, Honduras, Japan, China, Korea, Spain and Taiwan. The fishery employs only foreign labour. The catches are conserved on board and transferred to cargo reefer ships or unloaded at foreign ports, mainly Seychelles, Madagascar, Mauritius and South Africa. The tuna fleet never calls to a Mozambican port for landing catches in Mozambique but call for pre-fishing briefing and inspection (Japan fleet).

Over the last 10 years, the total catch in Mozambique waters ranged from 948 to 17.470 tonnes per year (Pátria *et al.*, 2011). For the period 2007/2011, a total of 207 fishing licenses for purse seine vessels and 331 fishing licenses for longline vessels were issued, giving an average of 174 tuna fishing licenses issued per year. The number of longline vessels operating in Mozambique EEZ has declined substantially since 2007.

1. Background / general fishery information

Mozambique is located in the southeastern part of the African Continent, between latitudes 10°27' S to 26°52' S and longitudes 30°12'E and 40°51'E. The country has a total surface area of 784,032 km², splitted into 10 provinces. The country has the third longest coastline in the Indian Ocean covering a total distance of 2700 km. Total continental shelf area is about 104,300 km². The current population is slightly more than 20 million people with a growth rate of 2.5% per annum. Most of the population is concentrated in the southern provinces of Maputo, Gaza and Inhambane and in central and northern provinces of Zambézia and Nampula. About 60% of the population lives within the coastal region of the country.

Fisheries play an important role in the Mozambican economy both for food security, income, subsistence and for exports. However fishing should be sustainable taking into account the social and economic needs and the conservation of the resources.

It has been estimated that the maximum fisheries potential is around 310 thousand tons, (2010) and the main resources were shallow water shrimp caught in Sofala Bank and Maputo Bay, deep water crustaceans caught in the centre and south of the country, scad and mackerel (Sofala Bank) and demersal fish (north and south of the country).

The main fisheries in the country in terms of production and value consist of: shallow water shrimp, deep water shrimp, line fishing, kapenta (freshwater sardine) and tuna. All fisheries are regulated through the 1990 Fisheries Act and the extensive 2003 Marine Fisheries Regulations, and subsidiary decrees.

The main responsibilities of the Ministry of Fisheries, concern the establishment of fisheries development policies and strategies, implementing them through development plans, as well as coordinating implementation through guidance and control of the performance of the subsystems and creating a business environment favorable to the operators and to new investors. The management regime of the tuna fishery is still following a development process. A Plan to develop a tuna fishery was produced in order to improve the management of this fishery.

2. Fleet structure

For the period 2007/2011, a total of 207 fishing licenses to purse seine vessels and 331 fishing licenses to longline vessels were issued, giving an average of 174 tuna fishing licenses issued per year by the National Fisheries Administration.

Table 1. Number of fishing licenses issued per year and by distant water fishing nation, for the Mozambican EEZ during 2007 to 2011 (Source: ADNAP annual reports).

Year	Purse seine		Longline		National Flag
	No licenses	Flag country	No licenses	Flag country	
2007	51	France, Seychelles, Spain, Italy, Indonesia	110	Spain, Japan, Korea, Indonesia, China, Taiwan, Georgia	
2008	47	France, Seychelles, Spain, Italy	75	Portugal, Spain, Korea, Philippines, Japan, UK	
2009	41	France, Seychelles, Spain, Italy	70	Portugal, China, Spain, Korea, Philippines, Japan	
2010	34	France, Seychelles, Spain, Italy	37	Portugal, China, Spain, Korea, Japan, Namibia, UK	
2011	34	France, Seychelles, Spain	39	Portugal, Spain, Korea, Japan, Namibia	1

For the period 2007-2011, the number of fishing licenses issued to purse seine vessels operating in Mozambican waters ranged from 34 to 51 vessels with a flat trend (Table 1). For the longline vessels, the number of fishing licenses ranged from 37 to 110 with a decreasing trend since 2008, probably due to security concerns in the western Indian ocean region.

There were 39 vessels operating in 2011. The highest number of licenses was given to Japan (18), followed by Spain (12 - under the EU/Mozambique Fishery Partnership Agreement). Asian type longline vessels ranged in length from 43 to 54 m and a gross registered tonnage (GRT) ranging between 367 and 499. EU type longliners ranged in length from 24 to 32 m and a GRT between 193 to 517. The foreign purse seine fleet has fluctuated from 34–51 vessels from 2005 to 2011. The length of the purse seine vessels vary from 67 to 101 m with a GRT ranging from 1164 to 4406.

In 2011, fishing licenses were issued for France, Spain and Seychelles purse seiners. For the longline fleet, fishing licenses were issued for the following countries: Portugal, Spain, Korea, Japan, and Namibia. Since this year a national flag longliner started fishing in the Mozambican coast.

The reduction in the number of issued licenses either at Fishing Agreement with European Union or with other commercial contracts appointed as one of the main issue the lack of security along the Mozambican channel due to increasing piracy actions.

2.1 Purpose

The purpose of this document is to provide where available data on its historical fisheries in the IOTC area including nominal catches, number/ type of vessels regarding tuna fisheries in Mozambique and making them available to the Commission. A general introduction is given on aspects concerning the fisheries sector in Mozambique, while placing emphasis on tuna related issues. The report finishes by presenting information on sport and recreational fishing and implementation of IOTC resolutions.

3. Catch and effort (by species and gear)

All fishing vessels - foreign fleet

Table 2. Number of fishing vessels and annual catch per primary species, for the Mozambican waters from 2004 to 2011 (Source: ADNAP annual reports).

Year	No vessels	Skipjack	Albacore tuna	Bigeye tuna	Yellowfin tuna	Swordfish	Black marlin	Tuna	Total
2004									17470
2005	143								5629
2006	142								6668
2007	161	641	541	350	3402	218	1	428	5581
2008	122	2550	341	322	2647	209	9	471	6549
2009	111	1942	106	173	824	721	9	538	4313
2010	71	2345	248	274	1613	837	31	603	6640
2011	73	1162	663	387	2280	463	17	465	5925

Purse seine fleet

The distribution of total effort for the purse seine fleet in Mozambique from 1983-2006 is shown in Figure 1 (source IOTC database - EIA Exploratory Drilling Area 1 Commercial Fisheries – J D K Wilson –May 2008). It should be noted that part of the fishing effort is located at the eastern boundary limit of the Mozambique EEZ. The catch of the purse seine fleet and the spatial distribution in Mozambique from 1983-2006 are presented in Figure 2 (source IOTC database - EIA Exploratory Drilling Area 1 - Commercial Fisheries – JD K Wilson – May 2008).

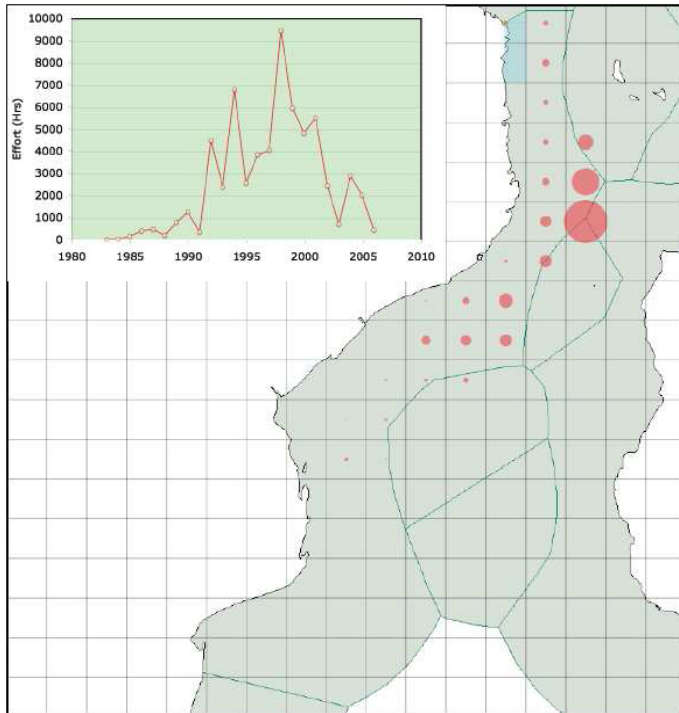


Figure 1. Distribution of the purse seine effort in the Mozambique EEZ from 1983 to 2006.

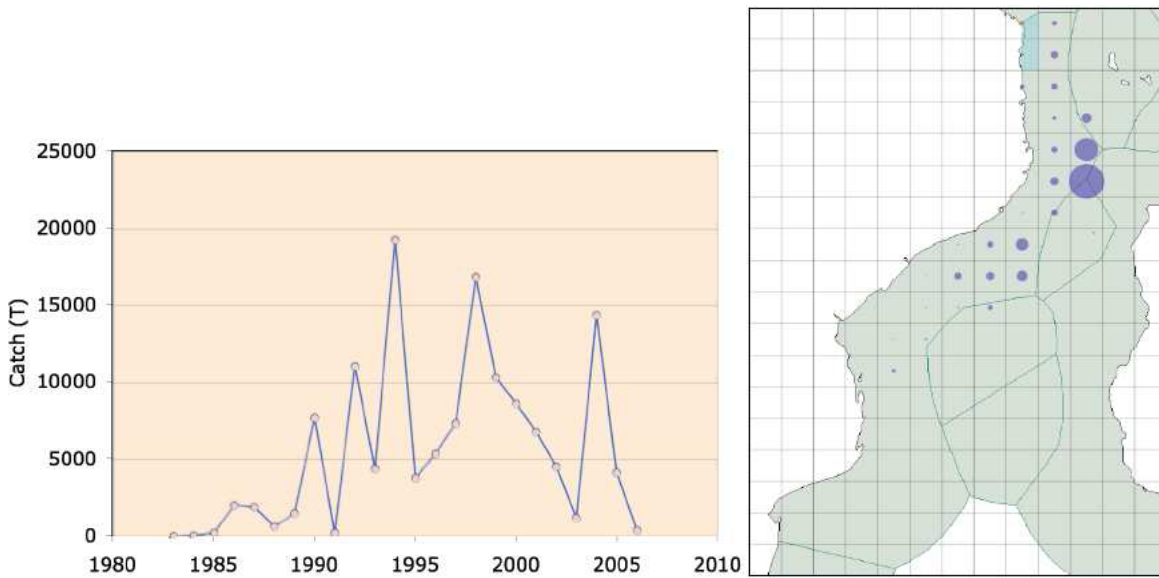


Figure 2. Evolution of the annual catch declared by the purse seine fleet in the Mozambique EEZ from 1983 to 2006 and distribution of the catch in Mozambique EEZ.

Part of the fishing effort is located at the eastern boundary limit of the Mozambique EEZ.

The composition of the catch in the purse seine fleet is about two thirds for skipjack and a little less than one third for yellow-fin tuna.

Tuna and tuna like species total catch recorded in 2010 was 6640 tons, obtained in 13697 fishing days with a mean daily catch rate of 485 kg per day. It should be noted that comparisons with previous years showed a reduction in mean daily catch rate probably due to security concerns.

Tuna and tuna like species total catch recorded in 2011 was 5925 tons, obtained in 2412 fishing days with a mean daily catch rate of 2457 kg per day (Table 3).

Table 3 Catches by species, fishing days and mean daily catch rate from 2010 and 2011.

Species	Catch (ton.) 2010	Catch (ton.) 2011	Fishing days 2011	Mean daily catch rate (kg/day) 2011
SKIPJACK	2345	1162	2412	2457
BLACK MARLIM	31	17		
SWORDFISH	837	463		
BIGEYE	274	387		
TUNA	776	465		
YELLOWFIN	1613	2280		
ALBACORE	248	663		
STRIP MARLIN	29	132		
SAILFISH	6	14		
SHARK	481	342		
TOTAL	6,640	5,925		

Longline fleet

The spatial distribution of total effort for the longline fleet in Mozambique from 1983-2006 is presented in Figure 3 (source IOTC database – EIA Exploratory Drilling Area 1 - Commercial Fisheries – J D K Wilson – May 2008).

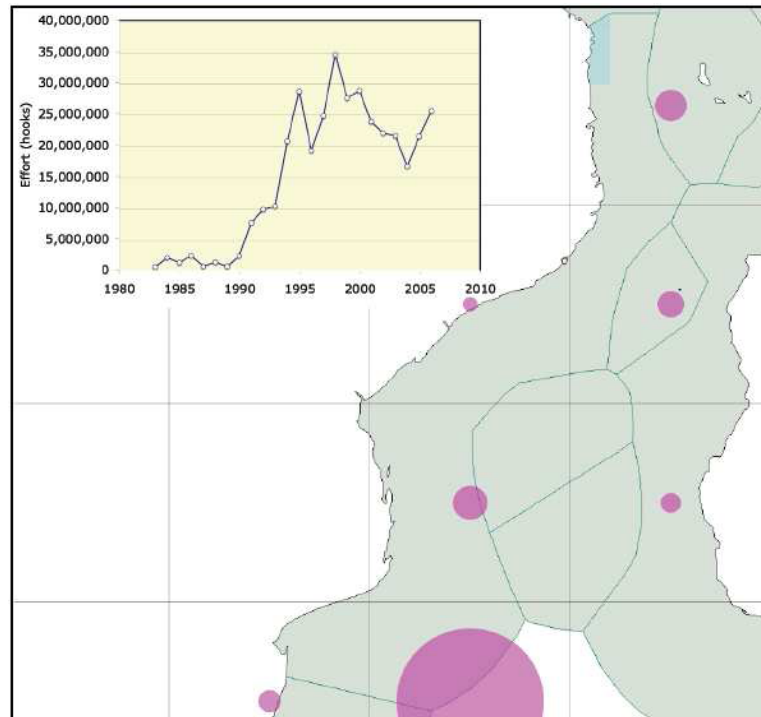


Figure 3. Spatial distribution of the longline effort in the Mozambique EEZ from 1983 to 2006.

The catch for the longline fleet in Mozambique EEZ from 1983-2006 is shown in Figure 4 in number of fishes (source IOTC database – EIA Exploratory Drilling Area 1 - Commercial Fisheries – J D K Wilson – May 2008). The highest catch in Mozambique EEZ was recorded in 1993. From 1993 to 2003 the longline catch has been fluctuating from 300.000 to 450.000 fishes per year.

The fishing effort for the longline fleet concentrates in the southern part of the Mozambican EEZ and during the months of December, January and February.

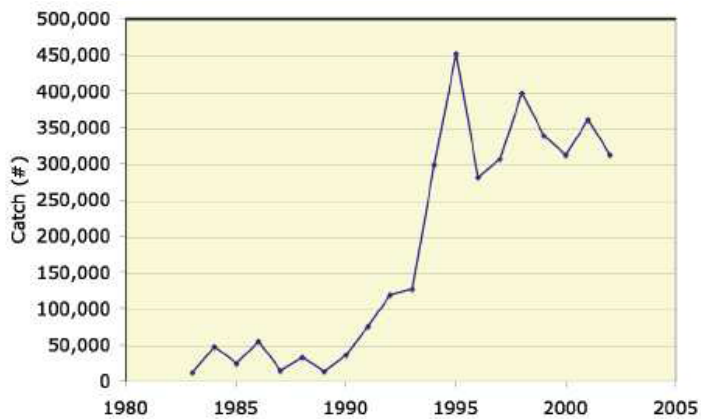


Figure 4. Evolution of the annual catch declared by the longline fleet in the Mozambique EEZ from 1983 to 2004.

5. Implementation of scientific committee recommendations

Since 2012, Mozambique is a full member of IOTC so the country will improve the ability to implement the scientific recommendations.

Some of the specific recommendations implemented are given below:

- IOTC logbook sheets was printed and filled for each observer trip in national flagged longliner since June this year. Based on data collected on this vessel the country will report to IOTC.

6. Ecosystem and bycatch issues

No information available.

7. National data collection and processing systems

Logbook data collection and verification is carried out by Fisheries Administration of Mozambique since 2001. The logbooks filled by EU vessels has been received through the EU commission in Mozambique, however this has not always been the case for some vessels. The other foreign fleets outside of the FPAs send logbooks directly to the Fisheries Administration. It is expected that this system will gradually improve with the current investments in monitoring control and surveillance and Mozambique's integration with the regional RFMO's and bilateral cooperation.

8. Vessel Monitoring System (including date commenced and status of implementation)

Vessel Monitoring System commenced in 2011 and is currently operational. The system was installed in Maputo and allow to see foreign vessels through the communication protocol established.

9. Scientific Observer programme (including date commenced and status; number of observer, include percentage coverage by gear type)

Scientific Observer programme has only been carried out in the national fleet targeting shallow water shrimps, deepwater shrimps, pelagic and demersal fish since the 1980s. Since June 2012 it has been implemented on a national flagged tuna longliner. The coverage of the foreign longliners has not yet been undertaken so far because local ports are never used for landing. Mozambique's commitment with IOTC initiatives in this field will improve the ability of the country to carry out scientific monitoring of tuna.

10. Port sampling programme (including date commenced and status of implementation)

Not in place regarding foreign vessels due to the fact that landings are outside the country.

11. Unloading/Transshipment (including date commenced and status of implementation)

No information available.

12. National Research Programs

The Fisheries Research Institute (IIP in its Portuguese acronym), under the Ministry of Fisheries, has the responsibility of undertaking research in fisheries related issues as well as the aquatic environment and aquaculture. The IIP does not possess a research vessel, but several demersal and oceanographic research surveys have been undertaken in the context of cooperation with fishing industry and with countries such as Norway, former Soviet Union, former German Democratic Republic, Portugal and others. Currently, since June this year there is an observer program on national flagged longliner in the Mozambican coast.

Recreational fishery

Recreational fishing activities are regulated by the Decree 51/99 "Regulation on recreational and sport fishing". The regulation provides a complete set of monitoring and control tools and measures to manage the activity: issue of license, authorized gears, prohibited gear, authorized species, protected species, catch limit, fishing zone. Since 2000, with the development of the tourism industry, sport fishing has also developed, targeting billfish, mainly marlin and sailfish. Sport fishermen keeping trophy of billfish are subject to pay an additional tax. To date, the catch reporting system for the sport fishing is not operational; consequently catches are not reported to the fisheries administration in all sports fishing events however the percentage of coverage has increased; the Fisheries Research Institute has had some involvement in catch and species composition recording to feed into line fishery regular stock assessments.

Sport fishing

During 2010, Fisheries Research Institute continued to collect data on game fish in different provinces, namely Maputo, Inhambane and Sofala. Kingfish (*Scomberomorus comerson*) was the species most

caught in Maputo, Inhambane and Sofala province followed by yellowfin and kawakawa (Anon, 2010). Sofala province recorded the highest catch of kingfish followed by Inhambane province. In 2011, the most abundant species in the three provinces was kingfish. Black marlin (*Makaira indica*) was the most abundant species in Inhambane (Table 4).

Table 4. Main species caught (kg) in sport fishing in 2011 at Maputo city, Inhambane and Sofala province.

<i>Scientific name</i>	<i>Common name</i>	<i>Maputo city (Kg)</i>	<i>Inhambane province (Kg)</i>	<i>Sofala province (Kg)</i>
<i>Acanthocybium solandri</i>	<i>Wahoo</i>	235.5	171.2	
<i>Auxis thazard</i>	<i>Frigate tuna</i>		2.0	
<i>Carcharhinus leucas</i>	<i>Shark</i>	7		
<i>Coryphaena hippurus</i>	<i>Dolphinfish</i>	96.3	77.6	
<i>Euthynnus affinis</i>	<i>Kawakawa</i>	113.7	255	35.7
<i>Istiophorus platypterus</i>	<i>Sailfish</i>			8
<i>Makaira indica</i>	<i>Marlin</i>	90.0	2066.0	
<i>Rachycentron canadum</i>	<i>Cod</i>	18.2	15.2	20.9
<i>Scomberomorus commerson</i>	<i>Kingfish</i>	1566.8	618.9	329.7
<i>Tetrapturus angustirostris</i>	<i>Shortbill spearfish</i>		13.0	
<i>Thunnus albacares</i>	<i>Yellowfin tuna</i>	171.5	298.7	
TOTAL		2408.1	4403.6	685.4

Source:IIP

14. Sharks

The shark catches are not split by species. Annual total catches from 2006 to 2011 ranged from 63 to 482 tonnes.

Finning, the practice of removing only the fins from the sharks and discarding the remainder of the shark at sea is strictly prohibited. However, the lack of compliance by most fishing vessels that land their catch in Mozambique, hinders any attempt at obtaining reliable shark species composition by the fisheries authorities. There are a number of attempts to curb this problem by the Mozambican authorities.

In line with IOTC Resolution 05/05 concerning the conservation of sharks caught in association with fisheries managed by IOTC, fishing vessels must not have fins onboard that total more than 5 % of the weight of sharks onboard, up to the first point of landing. The discard of any target species caught during the fishing operation is strictly prohibited.

There is no National Plan of Action for Conservation of Sharks (NPOA-sharks).

15. Protected species

15.1 Marine turtles

The release of marine turtle, dugong, whales and dolphins caught accidentally during fishing operations is mandatory. All dead animals must be kept on board and reported to ADNAP within not more than 12 hours.

There is a Mozambique Marine Turtle Monitoring and Tagging Program since 2003, which main aim is to monitor, marine turtles both nesting females and those accidentally caught, develop and implement a national tagging system.

15.2 Sea birds

Sea birds are not reported in Mozambique. But new fishing logbooks to be implemented from 2013 includes fields for sea birds reporting.

16. PROGRESS OF NATIONAL RESEARCH PROGRAM UNDER SWIOFP FISHERIES PROJECT IN MOZAMBIQUE

The South West Indian Ocean Project (SWIOFP) is a World Bank – Global Environmental Facility (GEF) initiative whose objective is to promote environmentally sustainable use of fisheries resources of the South West Indian Ocean coastal riparian countries. These are Kenya, Tanzania, Mozambique, South Africa, Madagascar, Comoros, France (Reunion), Mauritius and

Seychelles. The focus of the project is offshore ocean fisheries resources in the Exclusive Economic Zones of the participating countries.

There are different components in this project but the component 4 goal is **Assessment and sustainable utilization of pelagic fisheries**. Under this component, two Fish Aggregating Devices (FADs) were deployed in June 2012 but unfortunately both of them sank few months after, most probably due to sabotage. It is planned to deploy another two FADs before the end of the project on March 2013.

1. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC. [Mandatory]

Table 9. Respond with progress made to recommendations of the SC and specific Resolutions relevant to the work of the Scientific Committee [to be updated annually to include most recent Conservation and Management Measures adopted by the Commission].

Res. No.	Resolution	Scientific requirement	CPC progress
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	Fishing vessels must not have fins onboard that total more than 5% of the weight of sharks onboard, up to the first point of landing. The discard of any target species is prohibited. The authorized fishing gear is drifting longline.
10/02	Mandatory statistical requirements for IOTC members and cooperating non contracting parties	Paragraphs 1–7	All vessels fishing for tuna and tuna like species must complete a fishing logbook and submit to Fisheries Administration
10/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	No interactions with sea birds, reported by the national flagged tuna longliner. The country will obliged the longliners to use sea bird mitigation measures during licensing.
11/04	On a regional observer scheme	Paragraph 9	Regional observer scheme is not in place due to landings outside the country. Mozambique started an observer scheme in the national flagged longliner(1) in June 2012.
12/03	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–9	The country has only one national flagged tuna longliner since 2011 and catch and effort was reported in September 2012.
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	There have been no interactions with marine turtles by the national flagged tuna longliner. The country will obliged the longliners to use line cutters and de-hookers to facilitate the release of marine turtles.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	This resolution was not put yet in place.

References

Anon, (2010) Relatório anual 2010. Instituto Nacional de Investigação Pesqueira. 70p

Pátria E., Castiano, M., Malan, P. and F. Giroux (2011) Mozambique report to the Secretariat of the Indian Ocean Tuna Commission (IOTC) for attaining the status of Co-operating non Contracting Party. 65p.