



[KENYA] National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2018

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

<p>In accordance with IOTC Resolution 15/02, final scientific data for the previous year was provided to the IOTC Secretariat by 30 June of the current year, for all fleets other than longline [e.g. for a National Report submitted to the IOTC Secretariat in 2018, final data for the 2017 calendar year must be provided to the Secretariat by 30 June 2018)</p>	<p>YES</p>
<p>In accordance with IOTC Resolution 15/02, provisional longline data for the previous year was provided to the IOTC Secretariat by 30 June of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2018, preliminary data for the 2017 calendar year was provided to the IOTC Secretariat by 30 June 2018).</p> <p>REMINDER: Final longline data for the previous year is due to the IOTC Secretariat by 30 Dec of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2018, final data for the 2017 calendar year must be provided to the Secretariat by 30 December 2018).</p>	<p>YES</p>
<p>If no, please indicate the reason(s) and intended actions:</p>	

Executive Summary

The Kenyan tuna fishing fleet structure consists of an artisanal commercial segment and recreational fleets which all combined target and impact species under the IOTC mandate. The commercial artisanal fishing fleet is composed of a multi-gear and multi-species fleet operating in the territorial waters. The local boats are broadly categorized as outrigger boats or dhows which come with variants depending on the construction designs. It is estimated that 414 artisanal vessels are engaged in the fishing for tuna and tuna like species in 2017 within the coastal waters. The Main gears used are artisanal long line hooks, gillnets, monofilament nets and artisanal trolling lines. Catches of scombrids from artisanal fisheries were 1,931 tons which is a decrease from 3,431 tons, recorded in 2016. Other IOTC species landed during the year were sailfish (356 tons), Swordfish (166 tons), Sharks (466 tons), Rays and Skates (707 tons) and hammerhead sharks (20 tons). The main target species from the recreational fisheries are marlins and sailfish (*Istiophiridae*), swordfish (*Xiiphidae*) and tuna (*Scombridae*). Other species caught include small pelagic species such as barracuda, Spanish mackerel, Wahoo and sharks are landed. The artisanal fisheries and recreational fishing fleets have interactions with sharks where sharks are caught and the carcass is retained and fully utilised in artisanal fisheries and recreational trolling line fisheries have a voluntary shark release policy for sharks.

1. BACKGROUND/GENERAL FISHERY INFORMATION

Kenya’s straight coastline measures 640km long and 880Km including bays and inlets. Situated in the Western Indian Ocean, it borders Somalia to the north and Tanzania to the south. The declared Exclusive Economic Zone (EEZ) extends 200 nautical miles from the Kenya coastal baselines measuring 142,400Km. The most distinctive feature of the Kenyan coastline is its almost continuous fringing coral reef that runs parallel to the coast. The continental shelf is narrow (3-5 km) in most parts except in Ungwana bay, the shelf area measures 6500 km. The coastal and marine environment supports inshore marine fishing grounds located in and around Lamu Archipelago, Ungwana Bay, North Kenya Bank and Malindi Bank. The areas where the two major Kenyan rivers (Tana and Sabaki) empty into the sea are also very productive. The extensive fringing reef system supports vibrant artisanal fisheries for demersal, crustacean and molluscs fisheries vital for the livelihoods of the dependant coastal communities. The Annual production from

artisanal coastal fisheries average in 2017 was 23,286 MT consisting of demersal 48%, pelagic 33%, Sharks and rays 8% mollusc 9% and crustaceans 3% of the landed volumes. Annual catches of Scombridae family were the highest of the pelagic with 1,931 tons recorded. Several of the pelagic species caught are under the IOTC mandate and occur in the Kenyan territorial waters and the Exclusive Economic Zone.

Kenya’s entire artisanal fishing fleet consists of 3,500 small scale mostly wooden crafts usually for single day fishing trips. Fishing is heavily influenced by the monsoon season cycles, the most important fishing season is during the calm north east Monsoon from September to March. Landings of species under the IOTC mandate include tuna species (yellowfin tuna, skipjack tuna and Kawakawa) not always distinguished to species level in catches and kingfish. Billfish catches in the artisanal fishermen landings are represented mainly by Sailfish (Istiophoridae). A recreational trolling line fishery is also important in Kenya Kenya’s pelagic fisheries. The total catch is considered significant especially when compared to the artisanal commercial fisheries. The catch composition is varied with a total of fifteen pelagic species commonly landed however the mainstay of the fishery is composed of sailfish, marlins, tuna and swordfish.

2. FLEET STRUCTURE

The national tuna fishing fleet structure consists of an artisanal commercial segment and to a lesser extent recreational fleet which all combined target and impact species under the IOTC mandate. An estimate of the total fishing fleet for the entire artisanal sector is obtained from biennial frame surveys conducted regularly for the entire artisanal fishery since 2004. The fishing fleet estimates provided in this report are based on the frame survey estimates of February 2016.

The commercial artisanal fishing fleet is composed of a multi-gear and multi- species fleet operating in the territorial waters. The local boats are broadly categorized as outrigger boats or dhows which come with variants depending on the construction designs. It is estimated that 414 artisanal vessels are engaged in the fishing of tuna and tuna like species in 2017. A majority of the vessels are wooden planked propelled by sails and increasingly being motorised. These boats operate day fishing trips within the territorial waters. The mean craft size for tuna fishing vessels based on the frame survey was eight meters. The main gears used are

artisanal long lines (45), handlines (75), gillnets (150), trolling lines (106), monofilament nets (15) and other gears (23). Recreational fishing vessels use trolling lines.

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

Artisanal commercial fishing for tuna and tuna-like species in the territorial waters use artisanal long line hooks, gillnets, monofilament nets and artisanal trolling lines. Generally fishing for tuna species is highly seasonal activity where artisanal vessels in July-November target migratory tuna which occur in the coastal waters. The peak season for sailfish landings is during the November to March in coastal waters. Species landed are tuna yellowfin tuna, Skipjack tuna, Kawa kawa, sailfish and Spanish mackerel. Table 1 summarises artisanal catch data for the year 2015- 2017. In 2017, landings of tunas from artisanal fishers were 1,931 tons which was a reduction compared to 3,431 tons and 8,265 tons caught in 2015 and 2016 respectively.

The spatial representation of the catch by species and the fishing fleet dynamics is not possible primarily because the entire catch is caught by artisanal operators who do not have GPS devices equipped on their vessels. All the fleet operates within the territorial waters and mainly within the 5 nm area.

Species/Year	2015	2016	2017
Istiophoridae	162.5	371.5	356.1
Scombridae	8,264.9	3,430.9	1,931.1
Xiphiidae	75.9	199.8	166.0
Carcharhinidae	218.1	411.9	466.0
Dasyatidae	400.8	596.8	462.5
Myliobatidae	236.2	112.9	231.8
Sphyrnidae	12.1	30.8	20.3

Other rays	1.0	-	12.6
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4. RECREATIONAL FISHERY

Recreational trolling line fisheries in Kenya dates back to the 50 years historically restricted to more affluent individuals and tourists. The main target species being marlins, sailfish (*Istiophiridae*), swordfish (*Xiiphidae*) and tuna (*Scombridae*). Other species caught include small pelagic species such as barracuda, spanish mackerel, Wahoo and sharks. They are caught by trolling line with baits and artificial lures by sport- fishing enthusiasts using chartered boats. The common fishing locations are banks and reef drop offs, the Pemba Channel and sea mounts. Fishing has distinct high and low seasons occurring during the calm North east monsoon and from October to March and also fishing intensity heavily depended on the tourist arrivals.

5. ECOSYSTEM AND BYCATCH ISSUES

5.1 Sharks

Kenyan pelagic fisheries encounter sharks in the fishing operations of the artisanal longline, trolling line, handline and gillnet fisheries in territorial waters. Sharks are caught and the carcass is retained and fully utilised. Recreational trolling line fisheries encounter sharks as by catch but have a voluntary shark release policy for sharks caught. Sharks are also caught in industrial longline fishing tuna by licensed foreign vessels operating within the Kenya EEZ. The artisanal catches have not been distinguished to the species level nonetheless recent studies indicate that the following species are commonly landed in artisanal catches; *Sphyrna lewini*, *Carcharhinus melanopterus* and *Carcharhinus amblyrhynchos*. Generally there have been declines in shark catches in the recreational trolling fisheries over the years. Most species of sharks recorded in recreational fisheries include the black tip shark (*Carcharhinus limbatus*, the Whitetip reef shark (*Triaenodon obesus*) and silver shark (*Carcharhinus albimarginatus*. Specific measures towards the management and conservation of shark fisheries are included in the draft fisheries regulations. A National Plan of Action for sharks is being developed and the initial step of situation analysis completed and validated by the

stakeholders. Key recommendations from the action plan will form part of the fisheries regulations to enhance conservation and management of sharks species and their long-term sustainable use.

5.2 Seabirds

Kenya’s flagged longline vessel has been fishing in the Kenyan EEZ alone which does not fall in the bird zone. However, the captain has been instructed to report any incidences of bird viewing during the fishing expedition. The observers on board the longline vessel have also been supplied with bird identification guides in case they happen to encountering birds in their course of duty.

5.3 Marine Turtles

A national sea turtle conservation strategy 2010 -2014 implemented through a multi-stakeholder approach and by varying agencies. The strategy is very comprehensive with the aim of reducing and mitigating threats reverse declining sea turtle populations and enhance ecological, social, and cultural benefits of sea turtles. The Fisheries Act protects and prohibits the landing of turtles and all turtles caught incidentally in fishing operations must be released. Turtle exclude devices are mandatory in the Kenya prawn trawl fishery. Recent tests on the efficacy of the current TEDs recommended adopting new designs based on our vessels and area. Training of inspectors on TEDs inspections proposed. The results from a bycatch study recommend adoption of technics by artisanal fishers to mitigate sea turtle incidental capture. Stepping up awareness among the artisanal fishers on the importance of sea turtle conservation and use of the technics in key foraging areas is necessary. Reporting on the sea turtles gears interactions in the artisanal tuna fishing fleet is still limited due to the artisanal nature of the fishing operations.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

6.1. **Logsheet data collection and verification** (including date commenced and status of implementation)

Logbook data collection and verification started in 2007 and applied to the authorised long line vessel flying the Kenyan flag. Currently, Kenya has two (2) longliner flagged 2016 and 2018 year and

the verified logbook data will be availed to the IOTC as per the requirements. The rest of the fleet which is largely artisanal does not have a logsheet data collection system. The Fisheries Management and Development Act (FMDA) 2016 provides for data reporting by licenced operator in a prescribed. A simple artisanal logsheet has been developed to be implemented when the fisheries regulations are effected. A recreational fisheries logsheet was developed in collaboration with IOTC and introduced in some clubs. The form has been incorporated in integrated Fisheries Data and Information Management System (FDIMS) expected to be fully operation once the web based database is launched. Training of vessels operators and vessel agents on Electronic data reporting was undertaken in 2018

6.2. Vessel Monitoring System

The current fleet structure is artisanal tuna fishing vessels are small in size and cannot be fitted with the VMS equipment. All Kenyan flagged and licensed foreign vessels are registered on the country's VMS. The monitoring of fishing vessels is now effected.

6.3. Observer programme

The FMDA 2016 and small and medium purse seine net management plan provides that semi-industrial fleet operate with observers on board observer but the scheme has not been introduced. The current authorised tuna vessels are too small to accommodate observers while management plan is ready for gazetting. The scientific observers have been deployed onboard the Kenyan flagged longliners at all time during fishing voyage. The current observer coverage is 100%, with both scientific and compliance observers boarding simultaneously. The observer data has also been submitted to the IOTC.

6.4. Port sampling programme

Port sampling of vessels at the port of Mombasa has been boosted following the signing into law fisheries management and development act of 2016. The FMDA 2016 incorporated a lot of the port state measures agreement. The PSMA was ratified the port state measures in 2017 and recently

Kenya has launched the revival of a jetty towards development of a fishing port. Other guidelines including the standard operating procedures (SOPs) will be operational once the draft fisheries regulations are gazetted. The process awaits stakeholders’ endorsement.

6.4. Unloading/Transshipment

Data is collected for unloading and at port transshipment and submitted to the secretariat in the prescribed format.

7. National research programs

Research activities covering target species:

- Oceanographic research surveys have been initiated onboard Research Vessel Mtafiti. A regional training on scientific cruise planning, oceanographic sampling, fisheries and data management was conducted in April 2016 organized by Flanders Marine Institute (VLIZ) and the Kenya Marine and Fisheries Research Institute (KMFRI). The Kenya government has also invested in fitting the vessel with equipment including an acoustic eco-sounder and gears to facilitate biomass estimates of the offshore pelagic fish stocks, oceanographic data and biodiversity
- Characterisation of the artisanal tuna fishery has been initiated by KMFRI with support from KCDP. The research focuses on collection of baseline data to on catch composition and gear use to support stock assessment and includes species composition, catch per unit effort by gear type, as well as biological data on length, weight, sex and maturity of key selected species. Preliminary findings indicate Skipjack as most common tuna species captured in the artisanal fishery. A monitoring programme has been developed to continue with data collection.
- Stock assessment of small and medium pelagic with a focus on the small scale purse seine fishery. The study supported by the Kenya Coastal Development Project (KCDP) determined the species composition of catches and seasonal variations and determined stock indicators for selected species.
- Kenya has also acquired a patrol vessel which will be also assisting in collection of scientific data and is expected to be delivered early 2017.

Table 8. Summary table of national research programs, including dates.

Project title	Period	Countries involved	Budget total	Funding source	Objectives	Short description
Stock assessment of the small and medium pelagic fishery	2013–2016	Kenya		KCDP		As detailed above
Bycatch assessment and mitigation in the Western Indian Ocean (BYCAM)	2015 - underway	Kenya, Madagascar, South Africa, Tanzania, Mozambique	US\$ 654 269	WIOMSA	Bycatch assessment in coastal gillnet, longline and prawn trawl fisheries Mitigation of bycatch in coastal gillnet, longline and prawn trawl fisheries.	The project aims to re invigorate initiatives to reduce bycatch in WIO fisheries, and improve the uptake of TEDs and other mitigation methods



					Data mapping (spatial data management) Comprehensive Final Framework	
Dugongs (<i>Dugong dugon</i>) of the Western Indian Ocean Region: – Identity, Distribution, Status, Threats and Management	2015 - underway	Comoros, Mayotte, Kenya, Seychelles, Tanzania, and Mozambique	US\$ 480 000	WIOMSA	Identify historical and current distributions of dugongs across the Western Indian Ocean ii) Determine population structure iii) Identification anthropogenic vectors of population decline iv) Formulate and implement 'hotspot' specific dugong management and conservation protocols,	

8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC.

Table 9. Scientific requirements contained in Resolutions of the Commission, adopted between 2005 and 2017.

Res. No.	Resolution	Scientific requirement	CPC progress
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	Is on-going
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	Has been undertaken and Kenya is being assisted by IOTC on evaluation of the program
15/05	On conservation measures for striped marlin, black marlin and blue marlin	Paragraph 4	Marlins are caught by recreational fishers and all marlins caught have been released through the sports fishing organisation
13/04	On the conservation of cetaceans	Paragraphs 7– 9	They are protected in the Kenyan laws and it's illegal to exploit them
13/05	On the conservation of whale sharks (<i>Rhincodon typus</i>)	Paragraphs 7– 9	Are being addressed through FMDA 2016 and stakeholder awareness creation in collaboration with Marine mammal network
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	Are being addressed through the FMDA 2016



Res. No.	Resolution	Scientific requirement	CPC progress
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	Are being addressed through the FMDA 2016
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	Kenya is not in the bird zone. However, the operators have been notified on bycatch of sea birds
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	<ul style="list-style-type: none">• Review of the National Sea Turtle Strategy in progress through a stakeholder process and in collaboration with Kenya Wildlife Service (KWS)• Collation and analysis of nesting and mortality data in collaboration with WWR-Kenya, Watamu turtle Watch and Baobab trust• Research on bycatch from artisanal fishery concluded. Awaiting final results by Kenya Marine and Fisheries Research Institute (KMFRI)• Revival of the Kenya Sea Turtle Conservation and Management (KESCOM) network and support for community based turtle conservation initiatives• Testing of Turtle excluder device (TED) efficacy and process to adapt to tested TEDs ongoing.• Certification process of TEDs in shrimp trawling underway
11/04	On a regional observer scheme	Paragraph 9	Currently Kenya is undertaking 100% observer coverage on the Kenyan flagged longline vessels
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	Is being addressed through FMDA 2016
16/06	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraph 1	Kenya is being assisted by IOTC in fulfilling this mandate