



MAURITIUS National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2022

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Ministry of Blue Economy, Marine Resources, Fisheries and Shipping - Mauritius**

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 2022, final data for the 2021 calendar year must be provided to the Secretariat by 30 June 2022)</p>	<p>YES 30/06/2022</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 2022, preliminary data for the 2021 calendar year was provided to the IOTC Secretariat by 30 June 2022].</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 2022, final data for the 2021 calendar year must be provided to the Secretariat by 30 December 2022].</p>	<p>YES 30/06/2022</p>
<p>If no, please indicate the reason(s) and intended actions:</p>	



Executive Summary

In 2021, the Mauritian tuna fleet comprised 3 purse seiners, 1 supply vessel and 1 semi-industrial longliner operating. The three purse seiners are large freezer vessels having an overall length of 89.4 M each. The longliner is a semi-industrial boat of less than 24 Meters in length.

The semi-industrial longliner operated exclusively inside the Mauritius EEZ. The boat undertook 8 fishing trips for a total of 84 fishing days and a deployment of 84000 hooks. The majority of the catch consisted of yellowfin (54.0%) and albacore (36.5%). The total catch amounted to 21.8 tonnes with a CPUE of 0.26kg/ hook.

The Mauritian purse seiners operated between latitude 15 °N to 9 °S and longitude 46 ° to 78 °E. The total catch amounted to 25803.2t comprising 37.4% yellowfin, 54.8% skipjack and 7.4% bigeye tuna for 804 positive sets out of a total of 827 sets. The Observer Programme could not be covered in 2021 due to the precautionary measures put into place in the context of the COVID-19.

Sampling exercises were carried out on the catch unloaded from the semi-industrial, artisanal and purse seine fishery. A total of 4231 fishes were sampled for length frequency; 551 from the semi-industrial longliner, 331 from the artisanal fishery and 3349 from the Mauritian purse seiners when they unloaded at Port Louis.



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1. BACKGROUND/GENERAL FISHERY INFORMATION

The Industrial tuna fishing started in Mauritius in the late nineteen seventies. A first Mauritian purse seiner, 'Lady Sushil' was launched in 1979 and eight years later another purse seiner, the 'Lady Sushil II' joined the fleet. A third purse seiner, 'Cirn ', started operations in 1991. Until 1997, the three vessels were operating for the local canning factory. However, due to financial problems and change in the administration of the factory, the vessels were sold off and the factory had to rely on import of raw materials to meet its commitments. In 2013, a Mauritius-flagged vessel restarted operating in the purse seine fishery after an absence of 13 years.

Since 2019, three purse seiners are operating under the Mauritian Flag. In 2021, the Mauritius flagged three purse seiners operated in the IOTC area of competence between latitudes 15 °N to 9 °S and longitudes 45 ° to 78 °E. The total catch amounted to 25803.23t comprising of 37.4% yellowfin, 54.8% skipjack and 7.4% bigeye tuna for 804 positive sets out of a total of 827 sets. It is to be noted that no Observer Programme was conducted in 2021 due to precautionary measures put into place with regard to the COVID-19 pandemic.

The Mauritian longline fishery started in 1970 with a longliner under the aegis of the local tuna canning factory. The vessel operated for a very short period due to various constraints. The Mauritian surface longline fishery targeting swordfish (*Xiphias gladius*) started in the eighties. During experimental longlining for tuna during 1986-1988, a few swordfish were caught in the coastal waters of Mauritius (Roullot et al, 1988).

Commercial longline fishing started in 1999 when a small surface longliner started fishing for swordfish in the Mauritian waters. Since then, the number of vessels had gradually increased as promoters were encouraged to exploit the swordfish resource. All the Mauritian longline fishing vessels operating in the semi-industrial fishery are less than 24M in length. In 2021, there was one (1) semi-industrial longliner targeting tuna species and it operated inside the Mauritius EEZ. The semi-industrial longliner landed a total of 21.8tonnes of fish. The majority of the catch consisted of yellowfin (55.1%), followed by albacore (31.1%) and swordfish (1.74%).

An artisanal fishery around Anchored Fish Aggregating Devices (AFADS) exists since 1985. A number of FADs are set at distances ranging from 2 to 12nm from the coast. There are approximately 350 fishermen that are registered to fish around the AFADs. In 2021, catch around the AFADs amounted to 197 t.

2. FLEET STRUCTURE

In 2021, the Mauritian tuna fleet consisted of three purse seiners, one surface longliner and one supply vessel (Table 1). The purse seiners operated mostly outside the EEZ of Mauritius namely on the high seas and in the EEZ of Seychelles. Each has a length of 89.4 Metres and a GT of 2667t. The surface longliner operated inside the EEZ. Mauritius also has one supply vessel that services its three purse seiners. The supply vessel is 30M in length and has a GT of 287t. Table 1 shows the number of vessels of the National fleet by gear type and size which operated in the IOTC area of competence from 2017 to 2021.

Table 1: Number of vessels of the Mauritius fleet operating in the IOTC area of competence, by gear type and size (2017 – 2021)

Year	Gear	Number of vessels	Number of fishing days	GT	LOA (m)	Preservation Methods
2017	Purse seine	2	511	2667	89.4	Frozen
	Supply vessel	1	191 days at sea	287	30	NA
2018	Surface longline	13	1112	21.2 – 97	16.1 – 23.8	Chilled/Frozen
	Purse seine	2	511	2667	89.4	Frozen
	Supply vessel	1	183 days at sea	287	30	NA
2019	Surface longline	15	1326	17.27-97.40	13.50-23.80	Chilled/Frozen
	Purse seine	3	681	2667	89.4	Frozen
	Supply vessel	1	198 days at sea	287	30	NA
2020	Surface longline	2	141	38.41-49.0	13.50-20.10	Chilled/Frozen
	Purse seine	3	678	2667	89.4	Frozen
	Supply vessel	1	215 days at sea	287	30	NA
2021	Surface longline	1	84	49	20.1	Chilled/Frozen
	Purse seine	3	854	2667	89.4	Frozen
	Supply vessel	1	217 days at sea	287	30	NA

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

In 2021, the semi-industrial longliner licensed to operate within the EEZ undertook 8 fishing trips for a total of 84 fishing days and deployed 84000 hooks. The total catch of the semi-industrial longliner was 21.8t. The boat targeted tuna species mostly gilled and gutted with both the head and tail off. The CPUE was 0.26kg/hook. Yellowfin tuna made up 54.0% of the catch followed by 36.5% of albacore tuna. The percentage of the other species were: marlins (3.2%), swordfish (0.3%), and bigeye (0.1%). The remainder of the catch consisted of wahoo and sailfish.

A total of 854 fishing days was recorded for the three super freezer purse seiners and 827 sets were deployed out of which, 804 were positive (Table 2c). The total catch amounted to 25,803.2tonnes with a catch composition of 37.4% of yellowfin tuna, 54.8% skipjack tuna, 7.5% bigeye tuna and 0.04% albacore tuna. Miscellaneous fishes constituted 0.04% of the total catch. The purse seiners operated between latitudes 15 °N to 9 °S and longitudes 46 °E to 78 °E (Figure 2b). 75% of the catch (19,371.8t) was made on log-associated schools whilst 25% (6431.44t) was from free school. The majority of the log-associated catch originated from artificial logs (98%) and 2% was from natural logs. On the free schools, 64% of the catch comprised yellowfin whilst 30% of the catch was skipjack. On natural logs, skipjack made up 51% of the catch, yellowfin 39% and bigeye 5%. On artificial logs, skipjack made up 63% of the catch, yellowfin 28% and bigeye 8%.

The fishing activities of all the vessels operating under the Mauritian flag are monitored through the Vessel Monitoring System (VMS). Monitoring of the catches are carried out during unloading in port and through the verification of fishing logbooks which are submitted by the masters of the fishing vessels. It is to be noted that submission of fishing logbooks is mandatory under the Fisheries and Marine Resources Act 2007.

The tables below 2a, 2b and 2c show the annual catch and effort of the Mauritius flagged longliners fishing outside the EEZ (Table 2a) and inside the EEZ (Table 2b) and of the Mauritius flagged purse seiners (Table 2c) in the IOTC area of competence.

It is to be noted that from 2016 to 2019, there were some Mauritian flagged longliners that were active outside the EEZ. In 2020 and 2021, the Mauritius flagged longliners fished only in the EEZ.

Table 2a. Annual catch and effort of Mauritius flagged longliners (fishing outside the EEZ) in the IOTC area of competence (2016 – 2019)

Species	Catch (kg)			
	2016	2017	2018	2019
Yellowfin	40235	140068	213025	307124
Bigeye	49763	109313	79209	107723
Albacore	4772	2113	8970	4996
Swordfish	88698	203174	307974	255925
Marlins	23546	24004	22436	25610
Other billfishes	2107	6787	8027	7822
Sharks	825	1195	4029	7448
NEI	4822	26017	47624	29802
Effort (No. of hooks)	322532	701637	1148857	1328892

Table 2b. Annual catch and effort of Mauritius flagged longliners (fishing inside the EEZ) in the IOTC area of competence (2012 -2021)

Species	Catch (Kg)									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Yellowfin	5715	11265	11265	28270	52702	124797	46095	17748	33790	11774
Bigeye	2960	17185	7955	13284	20481	49243	7642	5320	183	20
Albacore	5555	6215	6451	12075	28789	34346	36869	13917	18090	7961
Swordfish	17065	28320	14015	42175	64076	115005	20782	11720	1010	65
Other billfishes	1810	2053	1055	3885	14709	23248	5672	3620	2540	690
Sharks	455	680	90	485	3339	5607	6602	690	0	0
NEI	2561	2255	1789	2695	7956	26174	6101	4813	2577	1278
Effort (No. of hooks)	182300	150560	105120	195850	439046	953344	296620	224574	129500	84000

Table 2c. Annual catch and effort of the Mauritius flagged purse seiners operating in the IOTC area of competence (2014 - 2021)

Species	Catch (tonnes)								
	2014	2015	2016	2017	2018	2019	2020	2021	
Yellowfin	4844	5448	7404	7681	11322	12287	9681	9641	
Bigeye	532	1430	530	1354	1784	1895	1515	1953	
Skipjack	3132	2849	3788	8503	9283	12742	9210	14129	
Albacore	49	78	55	134	16	16	19	10	
Total	8557	9805	11777	17672	22405	26940	20425	25733	
Effort (No. of sets)	482	490	463	719	650	808	691	827	

The figures 1a and 1b below show the historical annual catch for the Mauritius longline and purse seine fleet respectively. Regarding the longline fleet, there has been an increase in the catch made by all the longliners since 2014. This was mainly due to the development of the fleet from 5 to 15 vessels in 2019 except for the period 2009 to 2014 where there was a decrease in the number of active vessels in this fishery. In 2021, only one semi-industrial vessel was operational. It is to be noted that in 2016, 3 longliners started to operate in Mozambique and they were joined by 7 other longliners which continued their activities in the Mozambican waters up to 2019.

The catch of the Mauritius purse seine fleet has known a gradual increase from 2013 to 2019 except for 2020 where the purse seine catch was 20, 425t (Figure 1b). This was followed by an increase in 2021 mainly contributed by a higher catch of the skipjack tuna. In 2013, only one small purse seiner with a G.T of 678t was operational from October to December followed by the coming in operation of 5 additional small purse seiners of the same size and 1 super freezer purse seiner with a GT of 2667t in 2014. The 5 small purse seiners stopped operating in 2016. A third purse seiner joined the fishery in 2019. In 2021, the purse seine fishery consisted of 3 purse seiners and 1 supply vessel. Based on the historical catches, majority of the catch consisted of yellowfin (37%-63%) followed by Skipjack (29%-55%). A gradual increase was noted in the percentage catch of skipjack from 29 % in 2015 to 55% in 2021. This was reversed in 2019 with 47% of skipjack caught. The highest percentage of yellowfin in the total catch was observed in 2016 with 63%. It was followed by a decrease in 2017 and a slight increase in 2018. In 2019, the percentage of yellowfin in the catch decreased again to reach 46%. To be in line with the catch limitation imposed on the yellowfin tuna, there has been a further decrease in the catch of yellowfin in 2020 and 2021 as compared to the 2019 catches. In 2021, the percentage catch of yellowfin in the purse seine catch was 37%.

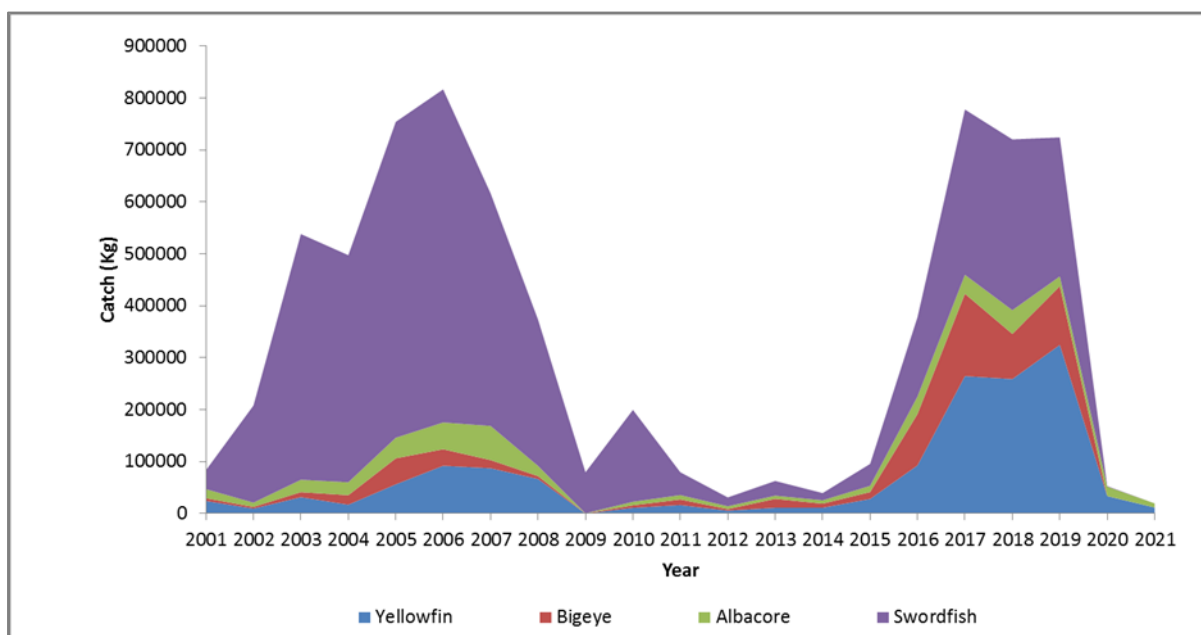


Figure 1a. Historical annual catch of the primary species for the Mauritius longline fleet in the IOTC area of competence (2001 – 2021)

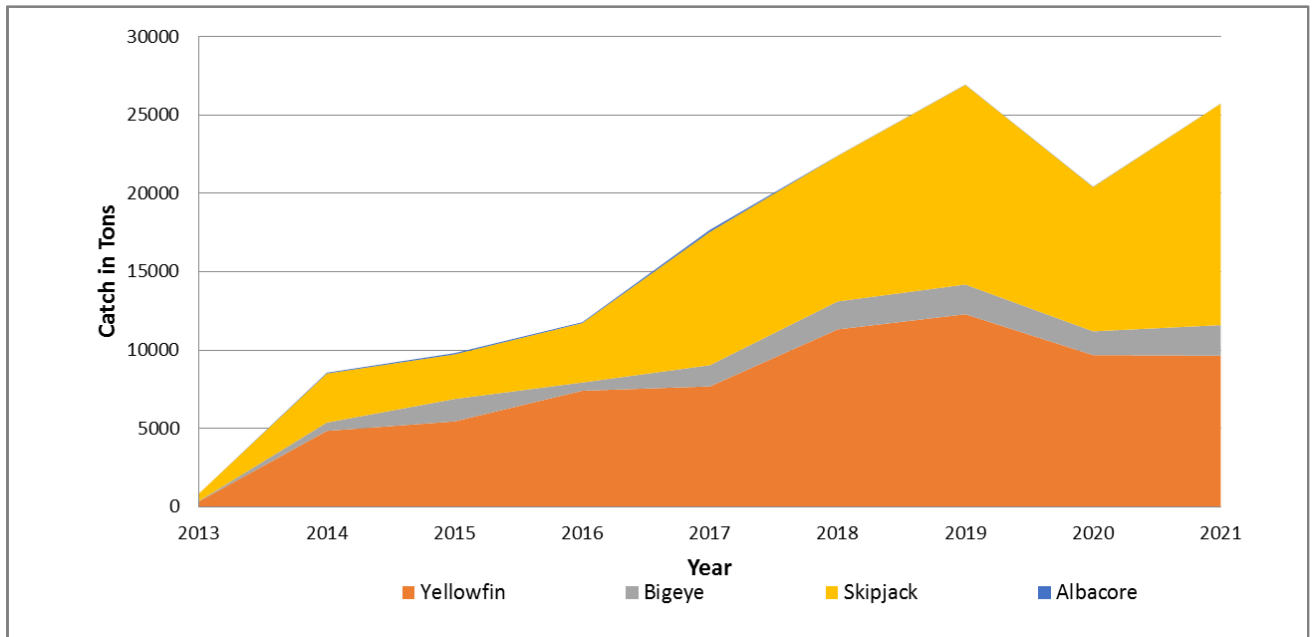


Figure 1b: Historical annual catch for the Mauritius purse seine fleet in the IOTC area of competence (2013 - 2021)

Figures 2a (i) and (ii) show the fishing effort of the Mauritius longline fleet and that of the Mauritius purse seine fleet in 2021. There was only one Mauritius flagged longliner involved in the semi industrial tuna fishery and a total of 84000 hooks was deployed within the EEZ of Mauritius. Regarding the Mauritius flagged purse seiners, fishing effort was concentrated in the region found to the North of the EEZ of Mauritius. The geographical distribution of the fishing effort extended mostly between 0° to 10°N and 50° to 70°E (figure 2a ii).

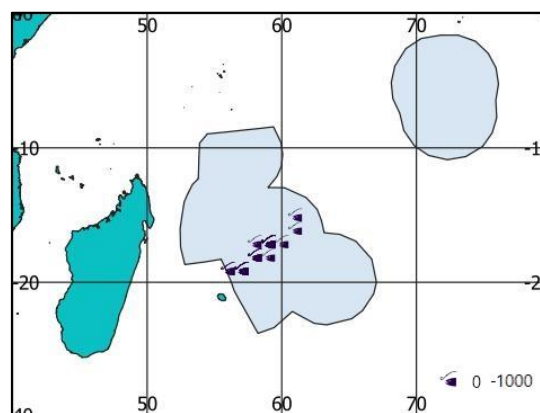


Figure 2a (i): Fishing effort (no. of hooks) -Mauritius-flagged longliners (2021)

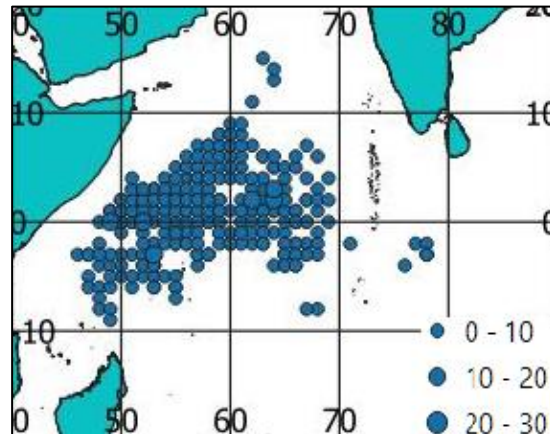


Figure 2a (ii): Fishing effort (no. of sets) - Mauritius-flagged purse seiners (2021)

Figures below 2b (i) and (ii) show the fishing effort of the Mauritius longline fleet inside the Mauritian EEZ and that of the Mauritius purse seine fleet from 2017 to 2021. The fishing effort of the national longline fleet operating in the EEZ was concentrated between latitudes 15°S to 20°S and 57°E to 62°E. . During the last five years, the fishing effort of the Mauritius purse seine fleet covered an extended area over the high seas and in the EEZ of Seychelles mostly concentrated between latitudes 10°N to 10°S and longitudes 50°E to 70°E.

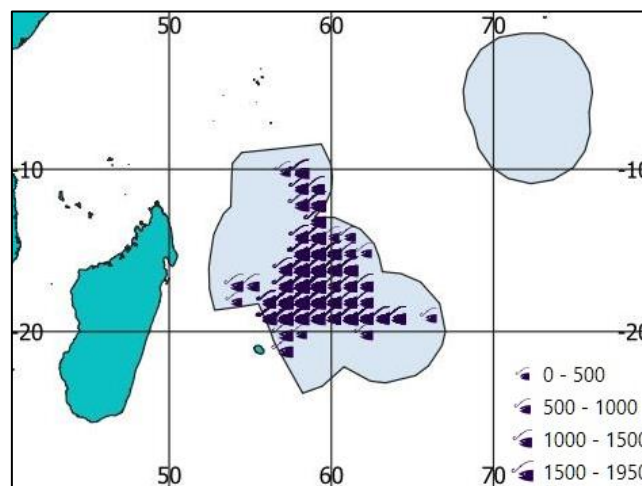


Figure 2b (i): Fishing effort (no. of hooks) -Mauritius-flagged longliners fishing in the EEZ (2017 -2021)

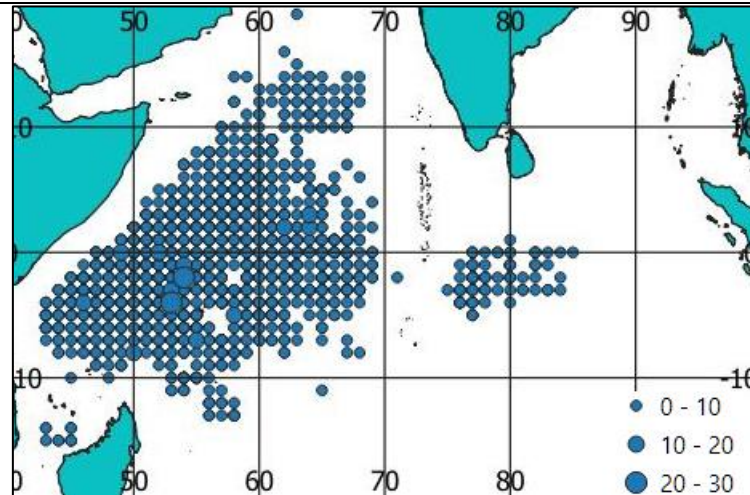


Figure 2b (ii): Fishing effort (no. of sets) - Mauritius-flagged purse seiners (2017 – 2021)

Figures 3a (i) to (ii) show the maps of distribution of catch for the longline and purse seine national fleets in 2021. The longline catches are concentrated around 14° to 19°S and 56° to 61°E in the EEZ. For the national purse seine fleet, catches of the tropical tuna were concentrated between 10°N to 08°S and 45°E to 70°E.

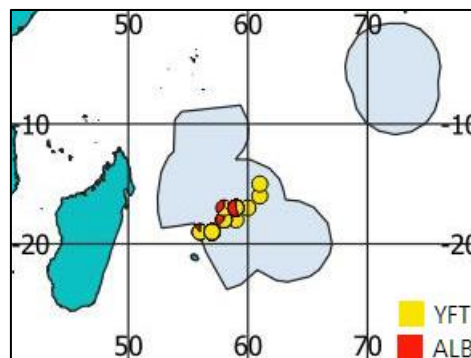


Figure 3a (i). Distribution of catch by species for the Mauritian flagged longliners in the EEZ (2021)

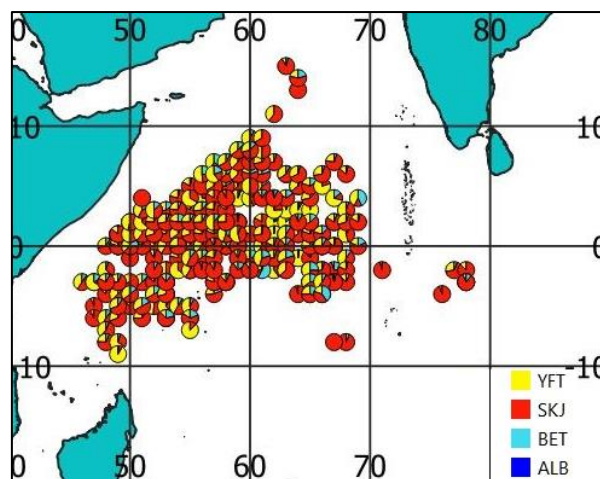


Figure 3a (ii). Distribution of catch, by species for the Mauritian flagged purse seiner in the IOTC area of competence (2021)

In figures 3b (i) to 3b (ii), the catches for the national longline and purse seine fleet have been aggregated for the last five years 2017 to 2021. The spatial concentration of catches from 10° to 20°S and 57° to 62°E can be observed for the national longline fleet in the last five years. Regarding the national purse seine fleet, there was no marked difference between the spatial catch distribution from 2016 to 2020 and 2017 to 2021. Catches were concentrated in areas extending from 6°N to 9°S and 50°E to 67°E.

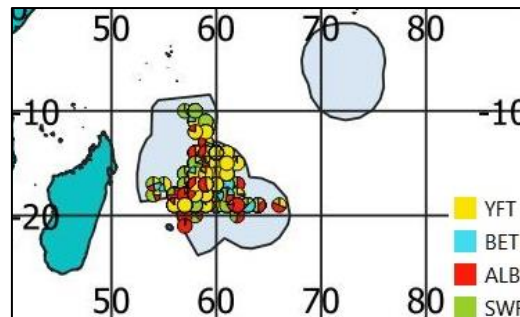


Figure 3bi. Distribution of catch by species for the Mauritian flagged longliners in the EEZ (2017–2021)

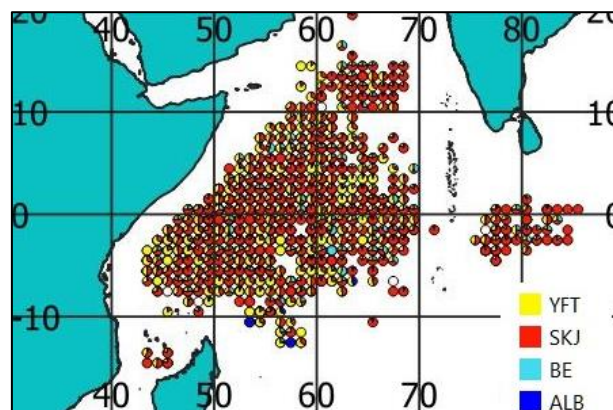


Figure 3bii. Distribution of catch (tons), by species for the Mauritian flagged purse seiners in the IOTC area of competence (2017–2021)

4. RECREATIONAL FISHERY

The sports/recreational fishing is an important activity for the tourism industry as well as for the local recreational fishermen. Around 60 sports/recreational fishing boats are involved in this fishery. The main fishing gear is trolling and the fishery supplies the local market with an estimated amount of about 350 tonnes. The main species comprises marlins, sailfish, tuna, common dolphinfish and wahoo. International big game fishing competitions which are usually held on an annual basis could not be carried out in the last two years due the COVID-19 pandemic. Hence, the estimation of the sports fishery was reviewed to 87.5 tons in 2021.

5. ECOSYSTEM AND BYCATCH ISSUES

Skippers, masters and agents of vessels have been sensitised on the conservations and management measures related to sharks; namely Resolutions 12/09, 13/05, 13/06, 17/05 and 18/02. Those resolutions have been included in the fishing licence as mandatory conditions. The skippers/masters have also been informed of their obligation to comply with Resolution 19/03 concerning mobulid rays. Furthermore, identification guides on pelagic sharks have been distributed to the masters of the national-flagged vessels. Mauritius has already implemented its NPOA-sharks and a shark identification workshop was organised in 2014.

5.1.1. NPOA sharks

Mauritius has a National Plan of Action for the Conservation and Management of Sharks (NPOA- Sharks, Mauritius) since 2015. A copy of the NPOA-Sharks, Mauritius was forwarded to the IOTC. In the NPOA, a series of actions have been described to ensure the conservation and management of sharks. These include:

- (i) Decrease fishing effort in any fishery where shark catch is unsustainable;
- (ii) Improve data collection and monitoring of shark fisheries;
- (iii) Train all concerned in identification of shark species;
- (iv) Facilitate and encourage research on sharks;
- (v) Improve the utilization of sharks caught; and
- (vi) Ascertain control over access of fishing vessels exploiting shark stocks.

5.1.2. Sharks finning regulation

Sharks finning are banned in Mauritius. All vessels licensed to fish for tuna and tuna -like species are bound by the licence conditions to comply with the different IOTC resolutions, more specifically to Resolution 17/05. The licence conditions are made under Section 37 of the Fisheries and Marine Resources Act 2007 and are thus legally binding.

5.1.3. Blue shark

Skippers/Masters are bound to report any catch of blue sharks. The skippers/masters have to abide by Resolution 18/02 as licence conditions are binding as per the Marine Fisheries and resources Act 2007. All blue sharks reported in the logbooks have been transmitted to the IOTC. The catch of blue sharks is monitored through the collection fishing logbook and submission of observer reports. Table 3 shows the total number and weight of sharks, by species, retained by the national fleet in the IOTC area of competence from 2017 to 2021 while the total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (2017 – 2021) are shown in table 4.

Table 3: Total number and weight of sharks, by species, retained by the national fleet in the IOTC area of competence (2017-2021)

Year	No. of sharks	Species	Weight (Kg)
2017	217	<i>Isurus oxyrinchus</i>	6552
	13	<i>Prionace glauca</i>	250
2018	138	<i>Prionace glauca</i>	3074
	432	<i>Isurus oxyrinchus</i>	6006
	104	<i>Isurus paucus</i>	1351
	1	<i>Carcharinus limbatus</i>	50
	10	<i>Carcharinus falciformi</i>	200
	18	<i>Sphyrna sp</i>	600
2019	65	<i>Prionace glauca</i>	1455
	394	<i>Isurus oxyrinchus</i>	5478
	62	<i>Isurus paucus</i>	810
	1	<i>Carcharinus falciformi</i>	202
	9	<i>Sphyrna sp</i>	573
2020	42	<i>Carcharinus limbatus</i>	1050
2021	1	<i>Carcharhinus falciformis</i>	11

Table 4: Total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (2017-2021)

Year	No. of sharks released	Species
2017	Nil	Not applicable
2018	1(released alive)	<i>Rhincodon typhus</i>
2019	Nil	Not applicable
2020	1	<i>Prionace glauca</i>
	982	<i>Carcharhinus falciformis</i>
	3	<i>Carcharhinus longimanus</i>
	1(released alive)	<i>Rhincodon typhus</i>
2021	462 (released alive)	<i>Carcharhinus falciformis</i>
	267	<i>Carcharhinus falciformis</i>
	1 (released alive)	<i>Rhincodon typhus</i>
	3 (released alive)	<i>Carcharhinus longimanus</i>
	2	<i>Carcharhinus longimanus</i>

5.2 Seabirds

As reported in the Implementation Report for Mauritius, there was no incidental bycatch of seabirds by the Mauritian longliners in 2021. Nil encounters with seabirds have been reported in all the fishing logbooks

received from the foreign-flagged and Mauritius-flagged licensed vessels in 2021. Furthermore, the Mauritius-flagged longliner being a semi-industrial vessel of less than 24 meters operated in the EEZ and did not beyond the zone of 25 degrees in the South Latitude explaining the nil encounters with seabirds.

All masters and agents of the licensed vessels have been provided with “Seabirds Identification cards for fishing vessels operating in the Indian Ocean” whereby identification techniques and mitigation measures are described.

5.3 Marine Turtles

The protection of marine turtles and eggs of marine turtles is ensured under Sections 16 (1) (c) and 17 (1) (c) of the Fisheries and Marine Resources Act 2007.

Furthermore, vessels’ agents and masters have been provided with the ‘Marine Turtle Identification Cards – for Indian Ocean Fisheries’ depicting different species of turtles, techniques of releasing hooked turtles as well as some literature related to the ecology of marine turtles, threats to marine turtles; amongst others. Also, the license conditions of Mauritius make provision for compliance to Resolution 12/04.

Other measures taken by Mauritius related to the conservation of marine turtles have been included in the ‘Reporting of progress of implementation of the FAO Guideline to Reduce Sea Turtle Mortality in Fishing Operation and on the implementation of resolution 12/04 on marine turtles’ already submitted to the Secretariat on the 17 March 2022. No Interaction with Marine turtles has been reported by the Mauritian purse seiners for 2021.

Year	Fishery – Purse Seine			Observed **		Observer data		
	Lat	Lon	Total effort	Total effort observed	Species	Captures (number)	Live releases (number)	Mortalities (Released dead) (number)
2021	-	-	-	-	-	0	0	0
2020	05S	45E	1	1	LKV-Olive Ridley Turtle	0	1	0
2020	09S	49E	1	1	TUG-Green Turtle	0	1	0
2020	04N	62E	1	1	TUG-Green Turtle	0	1	0
2020	01N	65E	1	1	TUG-Green Turtle	0	1	0
2019	04N	060E	1	1	LKV-Olive Ridley turtle	0	3	2
2019	10N	064E	1	1	LKV-Olive Ridley turtle	0	1	0
2019	11N	067E	1	1	LKV-Olive Ridley turtle	0	2	0
2019	02S	067E	1	1	TTH-Hawksbill turtle	0	1	0
2019	08S	055E	1	1	TTH-Hawksbill turtle	0	1	0
2019	07S	043E	1	1	TTL-Loggerhead turtle	0	1	0
2019	01N	050E	1	1	TTL-Loggerhead turtle	0	1	0
2019	07S	044E	1	1	TUG-Green Turtle	0	1	0
2019	00S	064E	1	1	TUG-Green Turtle	0	1	0
2019	11N	060E	1	1	TUG-Green Turtle	0	1	0
2018	02N	052E	3	3	LKV-Olive ridley turtle	0	1	1

2018	07S	061E	5	5	TTH-Hawksbill turtle	0	1	0
2018	03N	061E	4	4	TTX- Marine turtles nei	0	1	0
2018	05N	054E	2	2	TUG-Green Turtle	0	1	0
2018	03S	077E	1	1	TUG-Green Turtle	0	1	0
2017	02N	051E	4	4	LKV-Olive ridley turtle	0	0	1
2017	07S	049E	2	2	TTL-Loggerhead turtle	0	0	1
2017	03S	076E	1	1	TUG-Green turtle	0	0	1
2017	07S	055E	3	3	TUG-Green turtle	0	0	1
2017	04S	060E	4	4	TTH-Hawksbill turtle	0	0	1
2017	00N	048E	6	6	TTH-Hawksbill turtle	0	0	1
2017	02S	080E	4	4	TTX-Marine turtles nei	0	0	1

NB: Effort units = Number of sets

5.4 Other ecologically related species (e.g. marine mammals, whale sharks)

The Fisheries and Marine Resources Act 2007 makes provision for the protection of marine mammals under Section 17 (1) (d) as stipulated: “no person shall land or cause any person to land, sell or have in his possession in Mauritius or in the maritime zones any marine mammal”.

No catch of seabirds, marine turtles and marine mammals have been recorded for the national fleet in the IOTC area of competence for the most recent five years.

Table 5. Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the national fleet, in the IOTC area of competence 2017 – 2021.

YEAR	Turtles	Seabirds	Marine mammals
2017	0	0	0
2018	0	0	0
2019	0	0	0
2020	0	0	0
2021	0	0	0

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

6.1. Logsheet data collection and verification

Catch data is being collected from the fishing logbooks since 2001. The fishing licence conditions make it mandatory for all the fishing vessels to submit duly filled in logbooks to the Ministry upon arrival in port. All the fishing positions are verified for accuracy against the Vessel Monitoring System (VMS) and landing data from the Port State Control Unit (PSCU), Mauritius Ports Authority and fishing agents. 8 logbooks from the semi industrial longliners and 39 logbooks from the purse seiners were processed.

6.2. Vessel Monitoring System

The Vessel Monitoring System operates under the Fisheries and Marine Resources (VMS) Regulations Government Notice No. 87 of 2005, which came into operation on 01 June 2005 and is housed at the Fisheries Monitoring Centre (FMC) based at the Albion Fisheries Research Centre (AFRC). The VMS monitors the positions, speed and direction of fishing vessels by means of Inmarsat and Argos satellite-based tracking systems. At a regular interval (two hours for vessel with Inmarsat and one hour for those fitted with Argos transponders), the vessel sends the data reports to the Land Earth Station (LES) via a satellite network which transmit the data to a database of the Server of the FMC.

A Mauritian Fishing Licence is only issued to fishing vessels (local and foreign) equipped with valid and operational satellite-based reporting devices on-board. The VMS assists in the management of licensed vessels in the Exclusive Economic Zone (EEZ) of Mauritius. The reporting and movement of these vessels are monitored at the FMC on a regular basis. Any fishing vessel suspected of illegal fishing activities may be prosecuted and fined accordingly. Any discrepancies in the reporting and any anomalies in the logbook entries checked against the VMS database may result in the forfeit of the logbook deposit fee as well as revocation the Fishing Licence. In 2021, 81 licensed fishing vessels were monitored for tuna and tuna-like species.

6.3. Observer scheme

Deployment of observers on board national purse seiners has been initiated as from February 2015. Observers were deployed on purse seiners in 2016, 2017, 2018 and 2019. Regarding its purse seiners, Mauritius has been able to maintain an observer coverage of at least 15% throughout the years; for the 2019 Observer’s Program, a 25.6% coverage was achieved through the deployment of three observers covering a total of 181 sets and 169 days at sea. Table 6 shows the annual observer coverage on the Mauritius flagged longliners and purse seiners from 2015 to 2019. No map is available for 2021 as the programme could not be covered in the last two years due to the sanitary measures put in place as a result of the COVID-19 pandemic.

Table 6. Annual observer coverage (2015-2021)

Year	Gear	Period	Number of Days
2015	Purse seine	26/02/15 – 03/05/15	69
		06/04/15 – 17/06/15	71
		06/05/15 – 15/07/15	70
2016		23/03/16 – 01/06/16	78
		01/06/16 – 10/08/16	71
2017		08/09/16 – 17/11/16	71
	04/10/17 – 13/12/17	71	
2018	Purse seine	02/05/18 – 11/07/18	71
		30/05/18 – 05/08/18	68
	Longline	03/11/18 – 14/11/18	16
		17/11/18 – 28/11/18	12
		03/11/18 – 14/11/18	16
		17/11/18 – 29/11/18	13

2019	Purse Seiner	17/05/19 -07/06/19	20
		11/06/19 -22/06/19	11
		23/06/19 -01/07/19	8
		11/07/19 -21/07/19	11
		01/07/19 -18/07/19	16
		24/07/19 -25/08/19	31
		25/08/19 -02/09/19	6
		29/08/19 -02/10/19	35
		10/10/19 -01/11/19	23
2020	Longliner + Purse seiner	N/A	NIL
2021	Longliner + Purse seiner	N/A	NIL

6.4. Port sampling programme

Port sampling program started since the coming into operation of the first Mauritian purse seiners in the 1980's. The sampling programme consists of sampling exercises that are carried out on the catch of tuna unloaded by licensed longliners and purse seiners. Data collection sheets have been designed accordingly to enable the recording of length, weight and species composition data during unloading of catch from both foreign vessels and local boats. The vessel's name and date of unloading is also recorded during sampling. Fork length measurements are recorded for tunas while operculum to keel measurements is recorded for swordfish that are unloaded by local longliner. Table 7 shows the number of active vessels which were monitored.

Table 7. Number of vessels active monitored, by species and gear

Species	No. of vessels	
	Purse seine	Longline (inside the EEZ)
Yellowfin	3	1
Skipjack	3	NIL
Bigeeye	3	1
Albacore	NIL	1
Black marlin	NIL	1
Blue Shark	NIL	NIL
Blue Marlin	NIL	NIL
Oceanic white Shark	NIL	NIL
Striped marlin	NIL	NIL
Silky Shark	NIL	NIL
Swordfish	NIL	1

Table 8. Number of individuals measured, by species and gear

Species	No. of individuals measured	
	Purse seine	Longline (inside the EEZ)
Yellowfin	1377	341
Skipjack	1894	NIL
Bigeye	78	NIL
Albacore	NIL	189
Black marlin	NIL	18
Blue Shark	NIL	NIL
Blue Marlin	NIL	NIL
Oceanic white Shark	NIL	NIL
Striped marlin	NIL	NIL
Silky Shark	NIL	NIL
Swordfish	NIL	3

6.5. Unloading/Transshipment of flag vessels

Mauritius acquired its purse seine fleet in 2013 and transshipment activities were initially recorded in Victoria, Seychelles in October 2013. In 2021, the Mauritius-flagged purse seiners transhipped a total of 3437.8 tonnes of tuna in Seychelles out of which a certain quantity was destined for Mauritius and the remaining to various destinations including EU countries, Indonesia and Seychelles. Tables 9a and 9b shows the quantities of fish landed per species by the Mauritian flagged longliners and purse seiners in ports within the IOTC area of competence. Table 9c shows the quantities of fish transhipped by Mauritius flagged purse seiners in other ports in 2021.

Table 9a: Quantities landed by the Mauritius-flagged longliner by species in ports located in the IOTC area of competence

Species	Qty landed by gear in kg
	Longline (inside the EEZ)
Yellowfin	11774
Bigeye	20
Swordfish	65
Albacore	7961
Striped marlin	55
Black marlin	585
Blue marlin	50
Sailfish	340
Wahoo	938

Table 9b: Quantities landed by the Mauritius-flagged purse seiners by species landed in ports located in the IOTC area of competence

Species	Qty landed in tons
Yellowfin	9641
Skipjack	14129
Bigeye	1953
Albacore	10

Table 10: Quantities (tons) transhipped by Mauritius-flagged purse seiners in 2021

Gear	Species		
	YFT	SKJ	BET
Purse seine	775.1	2387.1	275.6

6.6. Actions taken to monitor catches & manage fisheries for Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish

Catches Striped Marlin, Black Marlin and sailfish are reported to the Secretariat as per Resolutions 15/02. Masters and Skippers have been sensitised to the need to report these species. Masters and skippers are bound to comply with Resolution 18/05. Mauritian vessels do not target these species and the catch limits referred in Resolution 18/05 do not apply. The Masters/ skippers are aware that they have to report their catch in accordance with the requirements of resolution 15/01. Monitoring of the catches is done through logbook data. Observers are also placed on the Mauritian vessels.

6.7. Gillnet observer coverage and monitoring

No gillnet vessel is registered under the Mauritian flag

6.8. Sampling plans for mobulid rays [Mandatory]

Up to now, no mobulid rays have been reported in the national fleet and since 2019, Resolution 19/03 for the conservation of Mobulid rays is mandatory as per the fishing licence conditions.

7. NATIONAL RESEARCH PROGRAMS

7.1. to 7.6 It is to be noted that no research programs are being carried out on blue shark, sharks, striped marlin, black marlin, blue marlin, indo-pacific sailfish, oceanic whitetip sharks, marine turtles and thresher sharks.

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 2012 and 2021

Res. No.	Resolution	Scientific requirement	CPC progress
11/04	On a regional observer scheme	Paragraph 9	No observers could be deployed in 2021 due to the COVID 19 pandemic
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	Licensed fishing vessels have been notified about the mitigation measures proposed under this resolution. Furthermore, marine turtles and their eggs are protected by the Mauritian law as specified in Sections 16 and 17 of the Fisheries and Marine Resources Act 2007, Act no. 27 of 2007. Also, information for Resolution 12/04 has already been submitted to the IOTC as per the FAO Guidelines on 17/03/22
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	No encounter with seabirds has been reported in the fishing logbooks. All vessels have been advised on the application of the seabird mitigation measures. Furthermore, 'Seabird Identification Cards' provided by the IOTC, have been distributed to the agents of the Mauritius-flagged vessels
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	Skippers of national flagged vessels have been trained in the identification of thresher sharks and have been informed to release live specimens of thresher sharks caught. They have also been provided with identification guides. No vessel has reported any encounter with thresher sharks
13/04	On the conservation of cetaceans	Paragraphs 7– 9	As per the logbooks of the fishing vessels, there has been no encirclement of cetaceans by the Mauritius-flagged purse seiners. Skippers have to report any interaction with cetaceans. Also, the Fisheries and Marine Resources Act 2007, Act No. 27 of 2007 has prohibited the fishing of marine mammals, under Section 17. Compliance with Resolution 13/04 for the conservation of cetaceans is mandatory as per the fishing licence conditions.
13/05	On the conservation of whale sharks (<i>Rhincodon typus</i>)	Paragraphs 7– 9	The masters and agents of the Mauritius-flagged vessels have already been sensitised on the importance to comply with Res 13/05.
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	Mauritius is not a shark-fishing nation and does not issue licenses to foreign vessels targeting sharks. However, guides related to the shark identification have been distributed among the agents of the Mauritius-flagged vessels to avoid the retention of endangered shark species under the IOTC mandate on board. Moreover, the NPOA-sharks of Mauritius highlights the conservation of sharks caught as bycatch. Data

Res. No.	Resolution	Scientific requirement	CPC progress
			on sharks was submitted to the IOTC on 30/06/22
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	As per the license conditions, it is mandatory for the vessels to keep on board a copy of the logbook which has provision for daily recording the catch and effort. Logbooks are collected and data after each trip of each vessels. The data is then input and analysed. Logbook data is also verified against VMS record and declarations at landing ports.
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	Data on mandatory statistical reporting is regularly submitted to the IOTC in June of every year. All the data pertaining to Resolution 15/02 for the year 2021 was submitted to the IOTC Secretariat on the 30/06/22 in accordance with the reporting requirements.
17/05	On the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 6, 9, 11	Mauritius is not a shark-fishing nation and does not issue licenses to foreign vessels targeting sharks. However, guides related to the shark identification have been distributed among the agents of the Mauritius-flagged vessels to avoid the retention of endangered shark species under the IOTC mandate on board. Moreover, the NPOA sharks of Mauritius highlights the conservation of sharks caught as bycatch. Data on sharks was submitted to the IOTC on 30/06/22.
18/02	On management measures for the conservation of blue shark caught in association with IOTC fisheries	Paragraphs 2-5	Mauritian vessels catching blue shark are required to record their catch in the logbooks. This data is reported as per Resolution 15/02. As per the fishing licence conditions it is mandatory for the skippers to record catch data on blue sharks.
18/05	On management measures for the conservation of the Billfishes: Striped marlin, black marlin, blue marlin and Indo-Pacific sailfish	Paragraphs 7 – 11	All fishing vessels have to report in their logbooks Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish catches and whether released alive and/or discarded. Data about marlins are submitted to the IOTC in accordance with the Resolution 15/02. Compliance with Resolution 18/05 for the conservation of bill fishes is mandatory as per the fishing licence conditions.
18/07	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraphs 1, 4	The Implementation Report was submitted to the Secretariat on 17/03/22 and includes all measures taken for the reporting obligations regarding the mentioned resolutions in the different sections of the report. All columns in the form IRC are filled as required and reporting of zero catches is done as per Resolution 18/07 in the appropriate format.



Res. No.	Resolution	Scientific requirement	CPC progress
19/01	On an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence	Paragraph 22	Meetings were held with operators to sensitise them on the need to decrease the yellowfin catches. A decrease in the yellowfin catch was noted both in 2020 and 2021 when compared to the catch of 2019. It is to be noted that during the Commission meeting in 2020, Mauritius took the commitment to pay back any excess catch if any this year and the next year if any. However, Mauritius did not make any over-catch.
19/03	On the Conservation of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence	Paragraph 11	Compliance with Resolution 19/03 for the conservation of Mobulid rays is mandatory as per the fishing licence conditions since 2019.

9. LITERATURE CITED

1. Fisheries and Marine Resources Act 2007
2. Implementation Report 2021 for Mauritius (IOTC-2021-CoC18-IR17)
3. National Report 2021 (IOTC-2021-SC24-NR17)
4. Compendium of active Conservation and Management measures for the Indian Ocean Tuna Commission