REPORT ON IOTC DATA COLLECTION AND STATISTICS

PREPARED BY: IOTC SECRETARIAT[1], 21 NOVEMBER 2014

Purpose

To provide the IOTC Working Party on Data Collection and Statistics with an overview of the status of data holdings in the IOTC Secretariat, in particular statistics of catch, effort, size frequency and other biological data for IOTC species, sharks, and other species that are caught incidentally by fisheries directed at IOTC species.

Background

Prior to each IOTC Working Party (WP) meeting the IOTC Secretariat prepares a number of tables, figures and datasets that highlight historical and emerging trends in the fisheries data held by the IOTC Secretariat. This information is used during WP to inform discussions around stock status and in developing advice to the Scientific Committee.

This document presents the status of data in the IOTC databases, including: the status of reporting and availability of datasets for the year 2013, as per the requirements set in IOTC Resolution 10/02 and other IOTC measures calling for IOTC CPCs to report data on their IOTC fisheries; an overview of the status of IOTC statistics over the time series; other datasets available at the Secretariat.

The report covers the following areas:

- Overview;
- Availability of IOTC statistics for 2013 (timeliness and completeness of data);
- Status of the IOTC databases for nominal catch (NC), catch and effort (CE) and size frequency (SF);
- Other IOTC data holdings: observer data, biological data, tagging data.

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Bibliographic entry: M. Herrera; Pierre, L.; Geehan, J. (IOTC Secretariat), 2014. Report on IOTC data collection and statistics. Victoria, Seychelles, 2-4 December 2014. *IOTC–2014–WPDCS10–06.*

1. OVERVIEW

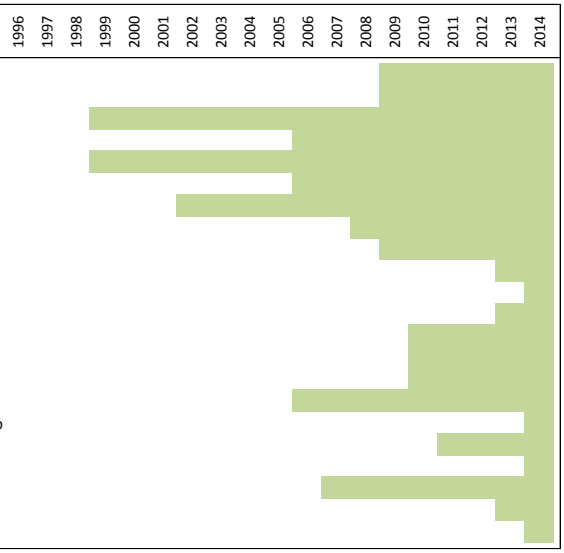
This document summarises the standing of a range of information received in accordance with IOTC resolutions and recommendations from its technical groups. Table 1 presents a summary of the information that needs to be reported. The time of application of each Resolution is presented in Table 2. **Appendix I** includes more details on the Resolutions referred to below.

Table 1. Summary of IOTC Data Requirements applicable to species managed by the IOTC

Statistical Requirements Summary	Coastal fleets	Industrial surface and longline fleets		
	EEZ vessels less than 24 m LOA	Vessels with LOA ≥ 24 m and all high seas vessels		
Annual catches (NC+DI)	Nominal catches (weight) of IOTC Species, main species of pelagic sharks, and other bycatch, per IOTC Area, gear, species and Year			
	Discard levels IOTC species, sharks, seabirds, marine turtles, Cetaceans per IOTC Area, gear, species and Year (in number of weight)			
Active Crafts (FC)	Number of fishig craft per boat-gear type category per year	Individual vessel data for all fishing ships catching IOTC species		
Catch-and-Effort (CE)	CE Data by fishery (type of boat-gear), area and period	Surface fisheries: CE by fishery, 1° grid and month	#FADs [Anchored & Drifting: CE by 1° grid and month (PS-BB)]	Supply vessels Purse seine fishery: Effort 1° grid and month
		Longline fisheries: CE by fishery, 5° grid and month		
Size data (SF)	Individual lengths of IOTC species sampled, by fishery, species, 5° grid, and month			
Scientific observer data	Sample of catches in land to cover at least 5% vessel activities	Sample of catches at-sea to cover at least 5% fishing operations		
Socio-economic data	No standards have been set as yet			
Foreign fleets EEZ catch	Not applicable	CE data for foreign licensed fishing vessels (above CE standards)		

Table 2. Timeline of implementation of IOTC Resolutions as an indication of the year since which they are in force. For more details refer to **Appendix I**.

	Resolution : Provisions on data	Applies to	
10/02	Minimum Data Requirements: NOMINAL CATCH	All Fisheries	IOTC species
			Main sharks
	Minimum Data Requirements: CATCH-AND-EFFORT	All Fisheries	IOTC species
			Main sharks
	Minimum Data Requirements: SIZE DATA	All Fisheries	IOTC species
			Main sharks
	Minimum Data Requirements: FADs and SUPPLIES	Purse seine	n/a
13/03	Minima data requirements LOGBOOK	Purse seine	IOTC and sharks
		Longline	IOTC and sharks
		Pole-and-line; Gillnet	IOTC and sharks
		Handline; Trolling	IOTC and sharks
13/08	FAD LOGBOOK and reporting requirements	Purse seine, Pole-and-Line	As 10/02
11/04	REGIONAL OBSERVER SCHEME	Coastal fleets	As 10/02
		Industrial fleets >=24m LOA	All species
		Industrial fleets <24m LOA	All species
05/05	Data requirements SHARKS	As 10/02	Main sharks
13/06	Data requirements OCEANIC WHITETIP SHARK	Authorized Vessels	Oceanic whitetip
12/09	Data requirements THRESHER SHARK	Authorized Vessels	Thresher sharks
13/05	Data requirements WHALE SHARK	Authorized Vessels	Whale shark
12/06	Data requirements SEABIRDS	Authorized Vessels	Seabirds
12/04	Data requirements MARINE TURTLES	Authorized Vessels	Marine turtles
13/04	Data requirements CETACEANS	Authorized Vessels	Cetaceans



Major data categories covered by the report

Nominal catches which are highly aggregated statistics for each species estimated per fleet, gear and year for a large area. If these data are not reported the Secretariat estimates a total catch from a range of sources (including: partial catch and effort data; data in the FAO FishStat database; catches estimated by the IOTC from data collected through port sampling; data published through web pages or other means; and data reported by other parties on the activity of vessels, data collected through sampling at the landing place or at sea by scientific observers, or on imports of bigeye tuna from vessels under the flag concerned.

Catch-and-effort data which refer to the fine-scale data – usually from logbooks, and reported per fleet, year, gear, type of school, month, grid (one degree square for surface fisheries, five degrees square for longline fisheries, and the most convenient resolution for coastal fisheries) and species. Information on the use of fish aggregating devices (FADs) and supply vessels is also collected. The standards of reporting to the IOTC are defined in IOTC Resolution 10/02. IOTC Resolution 13/03 *On the recording of catch and effort data by fishing vessels in the IOTC area of competence* sets the minimal data requirement that IOTC CPCs shall implement for fleets using their flag or licensed to operate within their EEZs.

Length frequency data: individual body lengths of IOTC species per fleet, year, gear, type of school, month and 5 degrees square areas, as defined in IOTC Resolution 10/02.

Biological data: data used to derive length-weight, non-standard weights-live weight, non-standard measurements-standard lengths, sex-ratios, maturity, or any other data required for the assessments of IOTC and shark species, as defined in IOTC Resolution 10/02.

Observer data: summaries of the data collected by observers on fishing vessels of IOTC CPCs implementing the Regional Observer Scheme (trip reports), as defined in IOTC Resolution 11/04**.**

Tag release and recovery data: information on the release and recovery of tunas with tags, as collected from the Regional Tuna Tagging Project-Indian Ocean (RTTP-IO), or other small-scale Projects implemented in the Indian Ocean.

2. AVAILABILITY OF IOTC STATISTICS FOR 2013

Tables4i-4v list the fleets for which the Secretariat received or estimated catches for the year 2013. The fleets are listed according to the size of their most recent catches. The standing of the catch, effort, size frequency and craft statistics information received is indicated using colours. Timeliness of reporting and data source are also shown. The availability and standing of statistics for tropical tunas (4i), temperate tunas (4ii), billfish (4iii), neritic tunas (4iv) and sharks, seabirds and sea turtles (4v) are presented separately. The availability of statistics on fishing crafts operating for each fleet is also presented in a separate table (4vi).Brief comments on bycatch, discards and Fishing craft statistics and active vessels are made at the end of this section.

Timeliness and completeness of data

IOTC statistics were available for 17 fishing parties before the deadline of June 30 (cf. 18 in 2013). Partial statistics were provided in some cases. Requests were sent to over fifty countries[2] in March-April 2014. Second and third requests were needed in most cases. Levels of reporting concerning statistics for the years 2012 and 2013 were generally poor before the deadline, in particular with regards to neritic tuna species. Five parties have not reported statistics to the IOTC at all for a period longer than four years (Sierra Leone; Yemen; Eritrea; Sudan; Guinea).

Table 1. Proportion of the NC, CE and SF statistics available at the IOTC Secretariat compared to the total catches estimated for 2013 (as of 15th November 2013).

Statistics available for 2013	Estim. Catch	NC		CE		SF	
		BD	WP	BD	WP	BD	WP
IOTC species (x1,000t)	1,695	1,254	1,503	681	814	805	834
%Available for 2013		**74**	89	**40**	**48**	**48**	**49**
%Available for 2012		44	90	43	58	31	43
Tropical tunas (x1,000t)	935	789	866	573	650	625	625
Temperate tunas (x1,000t)	44	41	42	30	31	29	29
Billfish (x1,000t)	94	64	78	38	41	24	24
Neritic tunas (x1,000t)	621	359	517	41	92	128	157

Estim. Catch: Total catches estimated
NC: Amount of catch available
CE: Amount of catch for which catches and effort are available
SF: Amount of catch for which size frequency data are available
Available before the deadline for data submission (**BD**, 30th June) and at the time of the Working Party on Data Collection and Statistics Meeting (**WP**)

Table 1 shows the extent to which 2013 catch data was available in the IOTC Nominal Catches (NC) database by the deadline for data submission (30 June) and before the WPDCS Meeting (December 2013)[3]. 74% of the catch was

[2] Note that specific requests were sent to EU countries having vessels known to operate in the IOTC Area (France, Portugal, Spain and the UK)

[3] Note that the IOTC Secretariat uses alternative sources to estimate the catches of non-reporting fleets; the percentages in this section represent the proportion that the NC, CE or SF available before the deadline or the SC represent over the totals estimated

available by 30 June and 89% of the catch was available by November. The proportion of statistics available for 2012 is shown for comparison. Levels of reporting for 2013 improved for size frequency data and worsened for catch-and-effort data.

Late reports compromise the validation, verification and utility of data, especially when data are submitted close to or during Working Party meetings.

- **FADs and supply vessels**: Japan is the only CPC that has provided complete information on FADs and supply vessels, including data as requested in IOTC Resolution 13/08. As for other CPCs, EU-Spain and EU-France provided information on the amount of Fish Aggregating Devices (FADs) set by purse seiners under its flag, by type and quarter, for 2010-2013. In addition, EU-Spain provided information on the activity of supply vessels for 2009-13, and EU-France indicated that it has not had supply vessels in operation in recent years. Australia indicated that purse seiners under its flag do not set FADs or use other vessels in support of fishing activities. No data was received for other fleets on FADs, or activities of supply vessels (including Seychelles, Iran, South Korea, Mauritius, Sri Lanka, and Indonesia).
- **By-catch levels**: Some CPCs (Iran, Sri Lanka, Maldives, EU-PS, Australia, Korea, South Africa, EU-UK) provided partial estimates of bycatch levels for their fisheries for 2013, including bycatch levels for sharks, seabirds or marine turtles. In spite of the better reporting levels recorded for bycatch data during 2014, few statistics are still available for sharks, seabirds and sea turtles (Table 4v) (and other non-IOTC species caught by fleets targeting tunas and/or tuna-like species); for this reason, the quality of the data available is still poor. The statistics are seldom available by species and refer usually to the shark carcasses that are retained on board, not including the amounts of sharks that are discarded.

4vii – Discards

Fleet	Gear type	Units	Catch (species or species group and numbers or kg of bycatch reported as recorded in column Units)
EU-Portugal	Longline		
EU-France	Purse Seine	# fish	Baleen whales nei (80), Green turtle (36), Hawksbill turtle (14), Loggerhead turtle (7), Marine turtles (7), Olive Ridley turtle (14), whale sharks (14)
		kg	Mackerel scad (86), Great barracuda (23), Ocean triggerfish (283), Silky shark (334), Tripletail (9)
France-OT	Purse Seine		nil
Australia	Longline	# Fish	Albacore tuna (171), Bigeye tuna (205), Black Marlin (62), Indo-Pacific Blue Marlin (11), Seerfishes NEI* (5), Skipjack (1), Swordfish (114) ,Tunas and Bonitos NEI* (1), Yellowfin tuna (27), Thresher sharks (84)
UK-OT			nil
Korea Rep	Longline	# Fish	Albacore (1293), Bigeye tuna (98), Skipjack (40), Southern bluefin tuna (126), Pomfrets nei (16), Butterfly kingfish(8), Opah (40), Black-browed Albatross (8), Blue shark (4028), Crocodile shark (476), Longfin mako (12), Pelagic Thresher Shark (12), Porbeagle (1679), Shortfin mako (112), Shy Albatross (24), Velvet dogfish (16), Yellow-nosed albatross (16);
	Purse Seine	# Fish	Marine Turtles (1)
	Purse Seine	kg	Silky Shark (6), Blue Marlin (4.78), Pomfrets nei (0.013), Common Dolphinfish (5.471), Wahoo (4.339)
Sri Lanka	Gillnet	# Fish	Marine Turtles (2)
	Longline	# Fish	Marine Turtles (5), Bigeye Thresher shark (41)
South Africa	Longline (foreign flags)	# fish	Atlantic Yellow-nosed Albatross (10), Black-browed Albatross (10), Green turtle (1), Leatherback turtle (1), Marine turtles (93), Shy Albatross (12), White-chinned Petrel (144), Yellow-nosed albatross (81)
Maldives	Longline	# fish	Hammerhead sharks nei (124), Mako sharks (544), Marine turtles (93), Oceanic whitetip shark (388), Sharks various nei (698) , Thresher sharks nei (426)

- **Discard levels**: Table 4vii presents the information available for discards for the year 2013. Discard levels are only available for Australia, EU-France purse seiners, EU-Portugal longliners (nil discards), France Overseas Territories purse seiners (nil discards), Isl. Rep. of Iran drifting gillnets, Republic of Korea longliners and purse seiners, South Africa longliners, Sri Lanka (all gears), Maldives longliners and the UK Overseas Territories (nil discards) in 2013. Discard rates are believed to be high for fisheries using longlines and oceanic gillnets, and moderate for purse seine sets on associated schools (mainly with FADs). However, the nets of FADs may also contribute substantially to ghost fishing.
- **Fishing craft statistics and active vessels (4vi)**: The number of vessels fishing for IOTC species in the Indian Ocean is thought to be more accurate in recent years thanks to the information collected after the implementation of IOTC Resolutions that call for countries to report yearly lists of domestic and foreign fishing vessels,

by the Secretariat. The amount of catches not reported is further reduced as countries that did not report statistics in time provide the missing datasets.

information collected through the IOTC Transhipment Programme and market data provided by the International Seafood Sustainability Foundation (ISSF). Fishing craft statistics are generally available for industrial fleets whose catches are available. Craft statistics are not available, incomplete or inaccurate for many artisanal fleets. The number of non-reporting vessels operating in the Indian Ocean was re-estimated this year from new information reported by IOTC CPCs and data collected through the IOTC Sampling Programs, and other sources.

Table 4: Availability of IOTC statistics for the year 2013[4]

Key Tables 4i - 4vi

Gear	Industrial purse seine (**PS**), industrial longline (**LL**) and artisanal gears (**ART**)		**NC**	Nominal Catch	Fully available
Catch	Recent catches amounting to (thousands of tonnes)		**CE**	Catch and Effort	Partially available
			SF	Size Frequency	Not available
TI	Timeliness	Good (before 1st July) Fair (whithin July) Poor (after 1st August)	**SO**	Data Source	Statistics fully available from flag country Statistics partially available from flag country Statistics available from sources other than flag country

4i – Tropical tunas (YFT, BET, SKJ)

Gear	Fleet	Availability of statistics					TI	SO	Comments
		Catch	Sps	NC	CE	SF			
PS	EUROPEAN UNION	212.3	YS						
	SEYCHELLES	57.3	YS						
	KOREA REP.	12.2	SY						
	IRAN ISLAMIC REP.	3.7	YS						SF not reported by IOTC grid
	SRI LANKA	2.0	SY						CE not reported by IOTC grid
	JAPAN	1.2	SB						
	MAURITIUS	0.9	SY						
	AUSTRALIA	0.0	S						
LL	CHINA	5.2	BY						Less than 1 fish measured per metric ton of catch
	TAIWAN,CHINA	34.0	BY						Less than 1 fish measured per metric ton of catch (fresh-tuna longliners)
	INDONESIA	28.0	YB						
	JAPAN	10.0	BY						Less than 1 fish measured per metric ton of catch
	SRI LANKA	9.9	YB						CE not reported by IOTC grid
	SEYCHELLES	7.7	BY						SF not reported for the deep freezing longline component
	NEI.FROZEN	5.2	BY						
	NEI.FRESH	3.7	YB						
	EUROPEAN UNION	1.6	BY						No data reported for EU fleet based in Mayotte; CE/SF EU-Spain only for Swordfish
	PHILIPPINES	1.1	BY						SF reported for BET only
	KOREA REP.	1.1	YB						Less than 1 fish measured per metric ton of catch (YFT)
	MALDIVES	1.0	YB						
	OMAN	0.9	Y						
	SOUTH AFRICA	0.3	YB						SF reported for foreign fishing vessels only
	THAILAND	0.3	BY						
	TANZANIA	0.3	YB						
	VANUATU	0.2	BY						
	MALAYSIA	0.1	YB						NC/CE not reported for Malay flagged vessels based outside Malaysia
	AUSTRALIA	0.1	BY						Less than 1 fish measured per metric ton of catch (YFT)
	MADAGASCAR	0.1	BY						
	BELIZE	0.0	BY						CE/SF for the same trip fully assigned to a unique IOTC Grid
	MAURITIUS	0.0	BY						
	INDIA	0.0	Y						NC likely to be too low for a fleet the size of India's
Other fleets	MALDIVES	121.6	SY						Less than 1 fish measured per metric ton of catch
	INDONESIA	120.9	SY						
	SRI LANKA	91.7	SY						Data not fully reported by gear and species
	INDIA	68.9	YS						CE data only reported for India's pole-and-line fleet; not by Grid
	IRAN ISLAMIC REP.	63.7	SY						Less than 1 fish measured per metric ton of catch
	YEMEN	35.8	Y						
	PAKISTAN	11.6	YS						
	OMAN	7.7	Y						
	COMOROS	4.6	SY						Data collection resumed in 2014
	TANZANIA	3.6	Y						
	MOZAMBIQUE	2.1	B						
	MADAGASCAR	1.5	SY						
	EUROPEAN UNION	1.0	SY						No data reported for EU fleet based in Mayotte
	KENYA	0.1	YS						
	MAURITIUS	0.1	YS						
	JORDAN	0.0	SY						
	UK.TERRITORIES	0.0	Y						
	MALAYSIA	0.0	S						
	EAST TIMOR	0.0	Y						
	SOUTH AFRICA	0.0	Y						
	SEYCHELLES	0.0	Y						
	AUSTRALIA	0.0	Y						

Sps	Yellowfin tuna (**Y**), bigeye tuna (**B**) and skipjack tuna (**S**)
Gear	Industrial purse seine (PS), industrial longline (LL) or other gears (pole-and-line; small purse seines, large and small gillnets, and small lines)
1	Freezing longliners whose catches are not reported by the flag states concerned
2	Fresh-tuna longliners whose catches are not reported by the flag states concerned

[4] Note that Table 4 disregards blank reports, i.e. fishing parties that did not report statistics for a species group will not show in the corresponding table.

4ii – Temperate tunas (ALB, SBF)

Gear	Fleet	Availability of statistics					TI	SO	Comments
		Catch	Sps	NC	CE	SF			
PS	AUSTRALIA	4.2	S						
	EUROPEAN UNION	0.4	A						
	SEYCHELLES	0.0	A						
	KOREA REP.	0.0	A						
LL	CHINA	1.0	A						Less than 1 fish measured per metric ton of catch
	TAIWAN,CHINA	18.4	A						Less than 1 fish measured per metric ton of catch (fresh-tuna longliners)
	INDONESIA	7.8	A						
	JAPAN	3.2	AS						
	NEI.FRESH	1.4	A						
	KOREA REP.	1.0	AS						
	MALAYSIA	0.9	A						NC/CE not reported for Malay flagged vessels based outside Malaysia
	EUROPEAN UNION	0.5	A						No data reported for EU fleet based in Mayotte; CE/SF EU-Spain only for Swordfish
	NEI.FROZEN	0.4	A						
	SEYCHELLES	0.3	A						
	PHILIPPINES	0.2	A						
	TANZANIA	0.2	A						
	MADAGASCAR	0.1	A						
	BELIZE	0.0	A						CE/SF for the same trip fully assigned to a unique IOTC Grid
	SOUTH AFRICA	0.0	AS						SF reported for foreign fishing vessels only
	AUSTRALIA	0.0	A						
	VANUATU	0.0	A						
	MAURITIUS	0.0	A						
	MALDIVES	0.0	A						
	THAILAND	0.0	A						
OTH	INDONESIA	3.2	A						
	EUROPEAN UNION	0.2	A						No data reported for EU fleet based in Mayotte
	MAURITIUS	0.2	A						
	COMOROS	0.0	A						
	MOZAMBIQUE	0.0	A						
	SOUTH AFRICA	0.0	A						
	AUSTRALIA	0.0	A						

Sps	Southern bluefin tuna (**S**) and albacore (**A**)
Gear	Industrial purse seine (PS), industrial longline (LL) or other gears (OTH: pole-and-line; small purse seines, large and small gillnets, and small lines)
1	Freezing longliners whose catches are not reported by the flag states concerned
2	Fresh-tuna longliners whose catches are not reported by the flag states concerned

4iii – Billfish (SWO, MARL, SFA, SSP)

Gear	Fleet	Availability of statistics					TI	SO	Comments
		Catch	Sps	NC	CE	SF			
PS	IRAN ISLAMIC REP.	0.2	MF						
	KOREA REP.	0.0	M						
LL	CHINA	1.0	SM						SF not reported for all billfish species
	TAIWAN,CHINA	11.8	SM						Less than 1 fish measured per metric ton of catch (fresh-tuna longliners)
	INDONESIA	8.0	SM						
	EUROPEAN UNION	7.8	SM						No data reported for EU fleet based in Mayotte; CE/SF EU-Spain only for Swordfish
	SRI LANKA	4.6	SM						CE not reported by IOTC grid
	SEYCHELLES	1.8	SM						SF not reported for the deep freezing longline component
	NEI.FROZEN	1.6	SM						
	JAPAN	1.1	SM						Less than 1 fish measured per metric ton of catch (observer data)
	TANZANIA	0.8	SM						
	NEI.FRESH	0.5	MS						
	SOUTH AFRICA	0.3	SM						SF reported for foreign fishing vessels only
	AUSTRALIA	0.2	SM						Less than 1 fish measured per metric ton of catch
	MALDIVES	0.2	SM						
	KOREA REP.	0.1	SM						SF only for Swordfish
	PHILIPPINES	0.1	SM						
	MADAGASCAR	0.1	SM						
	VANUATU	0.1	SM						
	THAILAND	0.1	SM						
	OMAN	0.1	FM						
	MALAYSIA	0.1	MS						NC/CE not reported for Malay flagged vessels based outside Malaysia
	MAURITIUS	0.0	SM						SF only for Swordfish
	BELIZE	0.0	MS						CE/SF for the same trip fully assigned to a unique IOTC Grid
	INDIA	0.0	FM						NC likely to be too low for a fleet the size of India's
Other fleets	IRAN ISLAMIC REP.	14.1	FM						
	PAKISTAN	10.1	FM						
	INDIA	9.9	FM						
	SRI LANKA	8.2	FS						Data not fully reported by gear and species
	INDONESIA	4.4	MF						
	OMAN	3.1	FM						
	TANZANIA	1.4	F						
	MADAGASCAR	0.8	F						
	UN. ARAB EMIRATES	0.5	F						
	YEMEN	0.4	F						
	MALDIVES	0.4	F						NC/CE aggregated by species group
	COMOROS	0.3	SM						Data collection resumed in 2014
	KENYA	0.1	F						
	EUROPEAN UNION	0.1	SM						No data reported for EU fleet based in Mayotte
	SEYCHELLES	0.0	M						
	SAUDI ARABIA	0.0	F						
	UK.TERRITORIES	0.0	F						
	MOZAMBIQUE	0.0	F						

Sps	Swordfish (**S**), blue marlin and/or black marlin and/or striped marlin (**M**), Indo-Pacific sailfish (**F**) and short-billed spearfish (**P**)
Gear	Industrial purse seine (PS), industrial longline (LL) or other gears (pole-and-line; small purse seines, large and small gillnets, and small lines)
1	Freezing longliners whose catches are not reported by the flag states concerned
2	Fresh-tuna longliners whose catches are not reported by the flag states concerned

4iv – Neritic tunas (FRZ, LOT, KAW, COM, GUT)

Gear	Fleet	Availability of statistics					TI	SO	Comments
		Catch	Sps	NC	CE	SF			
PS	IRAN ISLAMIC REP.	1.5	L						SF not reported by IOTC grid
	SEYCHELLES	0.0	F						Statistics incomplete; refers mostly to discards
	EUROPEAN UNION	0.0	F						Statistics incomplete; refers mostly to discards
LL	SRI LANKA	0.1	C						CE not reported by IOTC grid
Other fleets	INDONESIA	190.4	FC						
	IRAN ISLAMIC REP.	126.5	LK						Less than 1 fish measured per metric ton of catch
	INDIA	106.8	KC						
	PAKISTAN	36.7	KL						
	MALAYSIA	29.0	LK						SF only for Kawakawa
	SRI LANKA	23.5	FK						Data not fully reported by gear and species
	OMAN	22.5	LK						
	YEMEN	17.8	KC						
	THAILAND	15.1	KL						
	MYANMAR	12.9	X						
	UN. ARAB EMIRATES	9.6	C						
	SAUDI ARABIA	6.8	CK						
	MADAGASCAR	6.0	CK						
	TANZANIA	4.1	CK						
	MOZAMBIQUE	3.2	CK						
	BANGLADESH	3.0	X						
	QATAR	1.8	C						
	MALDIVES	1.6	KF						
	EGYPT	0.5	KC						
	COMOROS	0.3	K						Data collection resumed in 2014
	DJIBOUTI	0.3	X						
	AUSTRALIA	0.3	C						
	KENYA	0.2	CK						
	SEYCHELLES	0.2	K						
	BAHRAIN	0.2	K						
	KUWAIT	0.1	C						
	ERITREA	0.1	C						
	EUROPEAN UNION	0.1							No data reported for EU fleet based in Mayotte
	JORDAN	0.1							
	SUDAN	0.0							
	UK.TERRITORIES	0.0							
	MAURITIUS	0.0							

Sps Longtail tuna (**L**), frigate tuna and/or bullet tuna (**F**), kawakawa (**K**), narrow-barred Spanish mackerel (**C**), Indo-Pacific king mackerel (**G**), Seerfish(X)

Gear Industrial purse seine (PS), industrial longline (LL) or other gears (pole-and-line; small purse seines, large and small gillnets, and small lines)

1 Freezing longliners whose catches are not reported by the flag states concerned

2 Fresh-tuna longliners whose catches are not reported by the flag states concerned

4v – Sharks seabirds and sea turtles*

Gear	Fleet	Species							Comments
		Sharks			ALV	OCS	Sea Birds	Marine	
		NC	CE	SF					
PS	EUROPEAN COMMUNITY						n/a		Catches of sharks and marine turtles as reported by observers (not raised)
PS	SEYCHELLES						n/a		
PS	IRAN I R						n/a		
PS	AUSTRALIA						n/a		
PS	JAPAN						n/a		
PS	KOREA REP						n/a		NC refers only to discard of Silky shark
PS	SRI LANKA						n/a		
PS	MAURITIUS						n/a		
LL	CHINA TAIWAN,CHINA								
LL	EUROPEAN COMMUNITY								EU-France: NC/CE not by species; EU-Spain: no CE/SF data reported
LL	INDONESIA								ALV/OCS Fate of the sharks not specified
LL	JAPAN								
LL	SRI LANKA								CE not by IOTC grid; ALV/OCS Fate of the sharks not specified
LL	TANZANIA								
LL	OMAN								NC/CE not reported by species
LL	KOREA REP								ALV Fate of the sharks not specified
LL	SOUTH AFRICA								Discards of Seabirds and marine turtles reproted for foreign fleets
LL	SEYCHELLES								OCS Fate of the sharks not specified
LL	NEI-FROZEN								
LL	MOZAMBIQUE								
LL	NEI-FRESH								
LL	INDIA								NC/CE not by species; ALV/OCS reported for research boats
LL	MADAGASCAR								
LL	MALDIVES								
LL	THAILAND								
LL	BELIZE								CE/SF for the same trip fully assigned to a unique IOTC Grid
LL	PHILIPPINES								Refers only to Blue shark
LL	AUSTRALIA								
LL	MALAYSIA								NC/CE not by species
LL	VANUATU								NC not by species
LL	MAURITIUS								NC not by species / CE refers only to shortfin mako
Other Offshore & Coastal	INDONESIA				n/a	n/a	n/a	n/a	NC not by species
Other Offshore & Coastal	YEMEN AR RP				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	OMAN				n/a	n/a	n/a	n/a	NC/CE not by species
Other Offshore & Coastal	IRAN I R						n/a		
Other Offshore & Coastal	MADAGASCAR				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	PAKISTAN				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	SRI LANKA						n/a		NC/CE not reported for all fishing activities
Other Offshore & Coastal	BANGLADESH				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	UN ARAB EMIRATES				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	TANZANIA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	MALAYSIA				n/a	n/a	n/a	n/a	NC/CE not by species
Other Offshore & Coastal	SAUDI ARABIA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	ERITREA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	KENYA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	SUDAN				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	SEYCHELLES				n/a	n/a	n/a	n/a	NC/CE not by species
Other Offshore & Coastal	EGYPT				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	COMOROS				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	FRANCE-TERRITORIES				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	MAURITIUS				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	EUROPEAN COMMUNITY				n/a	n/a	n/a	n/a	NC/CE Not by species
Other Offshore & Coastal	AUSTRALIA				n/a	n/a	n/a	n/a	NC Not by species
Other Offshore & Coastal	ERITREA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	JORDAN				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	MALDIVES						n/a		Maldives banned catches of sharks in 2010
Other Offshore & Coastal	BAHRAIN				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	DJIBOUTI				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	SUDAN				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	KUWAIT				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	SOUTH AFRICA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	EAST TIMOR				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	INDIA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	KENYA				n/a	n/a	n/a	n/a	
Other Offshore & Coastal	MOZAMBIQUE				n/a	n/a	n/a	n/a	

Catches of seabirds are not likely to occur (**n/a**) or may occur (**?**)

1 Freezing longliners whose catches are not reported by the flag states concerned

2 Fresh-tuna longliners whose catches are not reported by the flag states concerned

*ALV and OCS refer to thresher sharks and oceanic whitetip shark, respectively, for which specific reporting requirements apply (ban on retention of catches and report on the number of sharks incidentally caught and released, and its fate; this measure is only in force for authorized vessels).

Measures for seabirds and marine turtles apply only to authorized vessels.

4vi – Fishing craft statistics and list of active vessels

Gear	Industrial purse seine (**PS**), industrial longline (**LL**) and artisanal gears (**ART**)	**Availability**	Fully available Partially available Not available
Catch	Recent catches amounting to (thousands of tonnes)		
Craft	Number of craft operated (2006) (blank if unknown)		
FC	Fishing craft	**SO** Data Source	Statistics fully available from flag country Statistics partially available from flag country Statistics available from sources other than flag country
AV	List of active vessels		

Gear	Fleet	Availability				SO	Comments
		Catch	Craft	FC	AV		
PS	EUROPEAN UNION	212.7	27				
	SEYCHELLES	57.3	7				
	KOREA REP.	12.3	4				
	IRAN ISLAMIC REP.	5.7	7				
	AUSTRALIA	4.2	6				
	SRI LANKA	2.0	8				
	JAPAN	1.2	1				
	MAURITIUS	0.9	1				
	SUPPLY VESSELS-NEI		10				Reported by flag countries and/or third parties
LL	CHINA	7.5	36				
	TAIWAN,CHINA	69.9	451				
	INDONESIA	49.1	1,238				
	EUROPEAN UNION	16.4	52				
	SRI LANKA	15.8	7				
	JAPAN	15.5	72				
	SEYCHELLES	12.1	40				
	NEI.FROZEN	8.0	9				
	NEI.FRESH	6.3	34				
	KOREA REP.	2.4	9				
	TANZANIA	2.0	5				
	PHILIPPINES	1.5	9				
	MALAYSIA	1.2	5				
	MALDIVES	1.2	7				
	OMAN	1.2	9				
	SOUTH AFRICA	1.1	10				
	MADAGASCAR	0.4	8				
	VANUATU	0.4	3				
	AUSTRALIA	0.4	4				
	THAILAND	0.3	2				
	BELIZE	0.1	3				
	MAURITIUS	0.1	3				
	INDIA	0.0	7				
	SENEGAL	Nil	0				No activity
	SIERRA LEONE						No information
	GUINEA						No information
Other Offshore & Coastal	INDONESIA	343.7			n/a		
	IRAN ISLAMIC REP.	220.7	6,748				
	INDIA	192.7			n/a		
	SRI LANKA	143.0	4,279				Number refers to high seas boats only
	MALDIVES	123.7					
	YEMEN	67.8					
	PAKISTAN	63.5			n/a		
	OMAN	41.1	22,420		n/a		
	MALAYSIA	30.2	20,966		n/a		
	TANZANIA	15.3			n/a		
	THAILAND	15.1	1,015		n/a		
	MADAGASCAR	14.0			n/a		
	MYANMAR	12.9			n/a		
	UN. ARAB EMIRATES	11.4			n/a		
	COMOROS	8.1			n/a		
	SAUDI ARABIA	7.9			n/a		
	BANGLADESH	6.9			n/a		
	MOZAMBIQUE	5.4			n/a		
	QATAR	2.4			n/a		
	EUROPEAN UNION	1.5	151		n/a		No data reported for EU fleet based in Mayotte
	KENYA	1.1			n/a		
	EGYPT	0.5			n/a		
	DJIBOUTI	0.4			n/a		
	ERITREA	0.3			n/a		
	AUSTRALIA	0.3	45		n/a		
	SEYCHELLES	0.3			n/a		
	MAURITIUS	0.2			n/a		
	BAHRAIN	0.2			n/a		
	KUWAIT	0.1			n/a		
	SUDAN	0.1			n/a		
	JORDAN	0.1			n/a		
	UK.TERRITORIES	0.0	47		n/a		
	EAST TIMOR	0.0			n/a		
	SOUTH AFRICA	0.0			n/a		
	SOMALIA				n/a		No information

1 Freezing longliners whose catches are not reported by the flag states concerned
2 Fresh-tuna longliners whose catches are not reported by the flag states concerned

3. STATUS OF THE IOTC NOMINAL CATCHES (NC), CATCH AND EFFORT (CE) AND SIZE FREQUENCY (SF) DATABASES

Tables 5a-3f show the presumed quality of the nominal catches of tropical tunas, temperate tunas, billfish and neritic tunas for the last forty years (1974-2013), by species, and year (overall and by type of fishery). Keys to the scoring system used to assess the quality of the statistics available for each species are presented below. Figures 1a-1c show the proportion of nominal catches, catch and effort, and size frequency data that are presumed uncertain for the period 1974-2013, by main fleet and species group, including tropical and temperate tunas (i), billfish (ii), and neritic tunas (iii). The importance that the catches of each species group under each individual gear had over the total catches for that same group during the last decade (2004-2013), all gears combined, is presented in Figures 2a-2e. Figures 3a-3e show the proportion of catches that are presumed uncertain for the period 1974-2013, by type of dataset, main fleet and fishery. It is important to note that the quality of the statistics for the last two years is likely to improve in the future, as more information is collected from the fisheries and reported to the Secretariat.

Key to tables 5a-f and scoring system used to assess the quality of statistics of IOTC species available in the IOTC databases

Key:

Species	Species code (Albacore ALB; bigeye tuna BET; black marlin BLM; bullet tuna BLT; blue marlin BUM; narrow-barred Spanish mackerel COM; frigate tuna FRI; Indo-Pacific king mackerel GUT; kawakawa KAW; longtail tuna LOT; striped marlin MLS; southern bluefin tuna SBF; Indo-Pacific sailfish SFA; skipjack tuna SKJ; swordfish SWO; yellowfin tuna YFT)
%Catch	Contribution (in %) that the catches of the species make out of the total combined catches of all IOTC species, over the entire time series of catch
Yfirst	Availability and quality of data in the IOTC database for the year, species, and gear
Ylast	concerned, by type of dataset

e.g.;

Species	%Catch	YearYY

$Species_1^n$ — % Catch, as defined above

- Availability and quality of **nominal catch** data
- Availability and quality of **catch-and-effort** data
- Availability and quality of **size frequency** data

Key to IOTC Scoring system

Nominal Catch	By species	By gear
Fully available	0	0
Partially available (part of the catch not reported by species/gear)*	2	2
Fully estimated (by the IOTC Secretariat)	4	4

*Catch assigned by species/gear by the IOTC Secretariat; or 15% or more of the catches remain under aggregates of species

Catch-and-Effort	Time-period	Area
Available according to standards	0	0
Not available according to standards	2	2
Low coverage (less than 30% of total catch covered through logbooks)	2	
Not available at all	8	

Size frequency data	Time-period	Area
Available according to standards	0	0
Not available according to standards	2	2
Low coverage (less than 1 fish measured by metric ton of catch)	2	
Not available at all	8	

Key to colour coding

- Total score is 0 (or average score is 0-1)
- Total score is 2 (or average score is 1-3)
- Total score is 4 (or average score is 3-5)
- Total score is 6 (or average score is 5-7)
- Total score is 8 (or average score is 7-8)

Table 5a: Overall status of IOTC catch, effort, and size frequency statistics, by year and species (1974-2013)

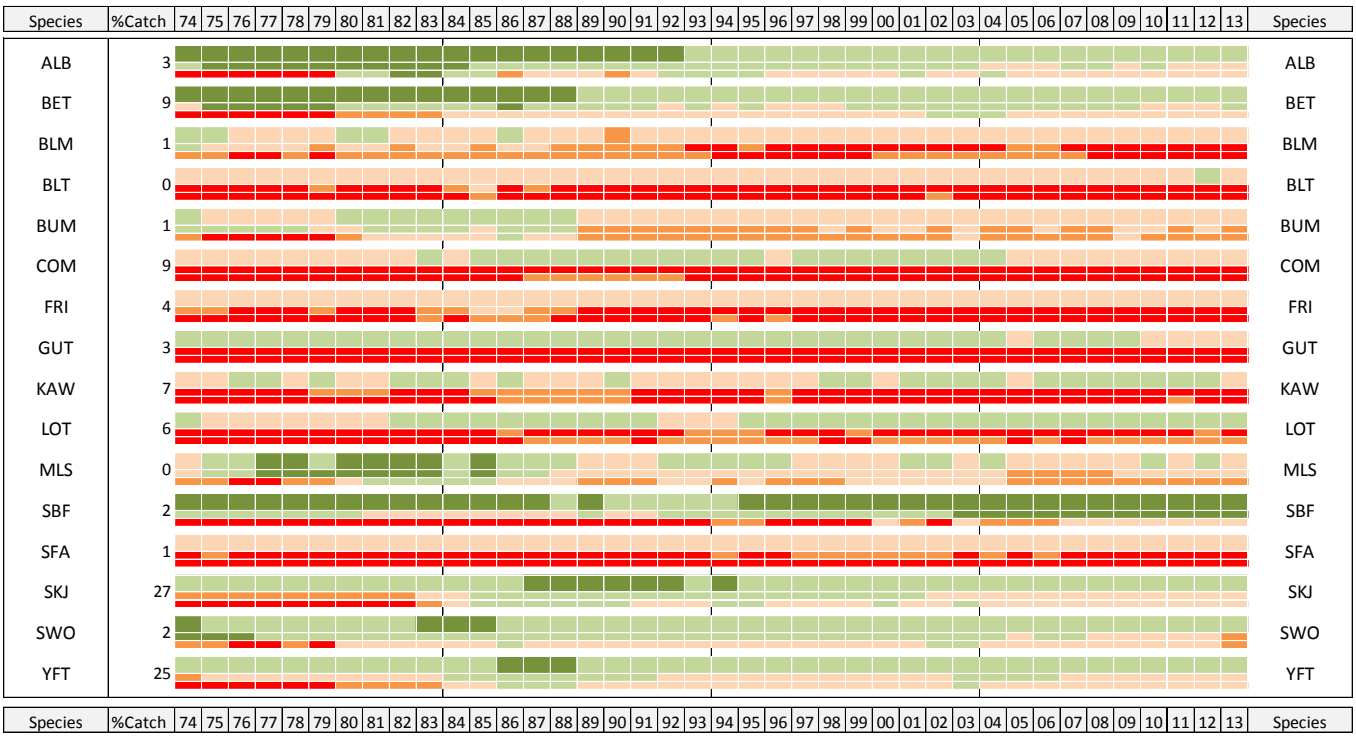
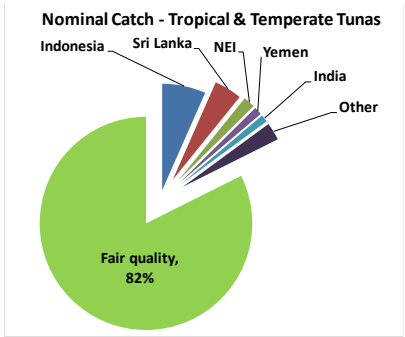
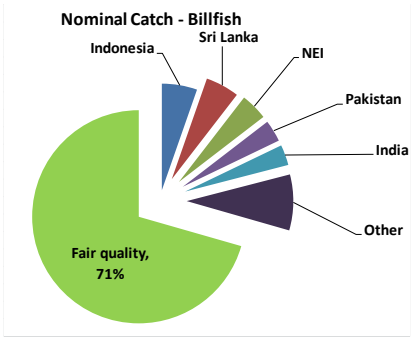
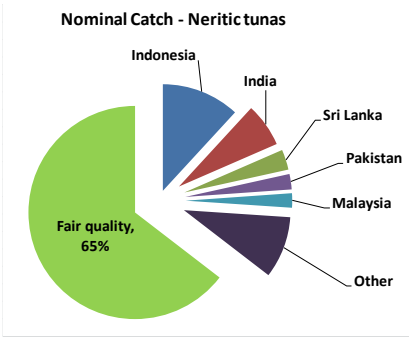
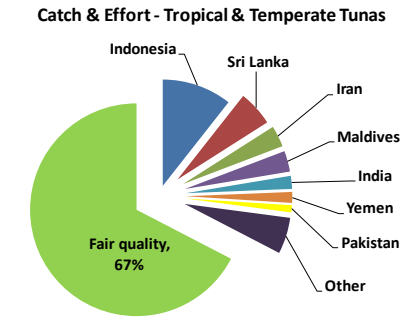


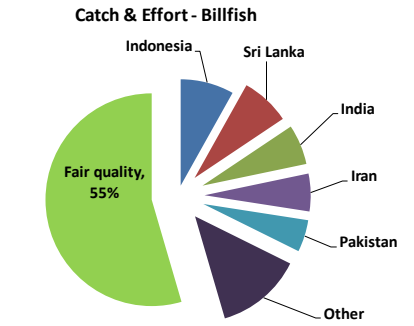
Fig. 1a-i: Presumed uncertainty of the nominal catch (top), catch-and-effort (mid), and size data (bottom) available in the IOTC databases for tropical and temperate tunas (left), billfish (mid), and neritic tunas (right), and main fleets that contribute to that uncertainty, for the period 1974-2013 (all gears combined)

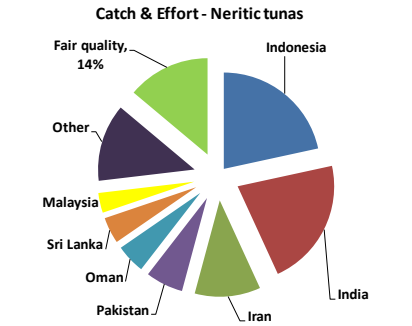


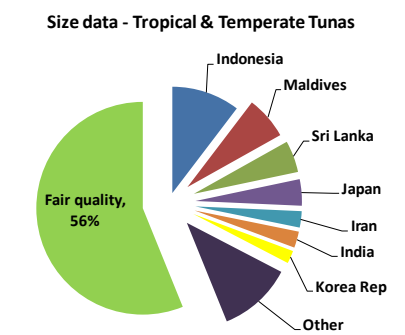


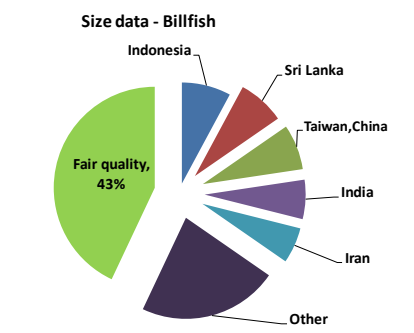


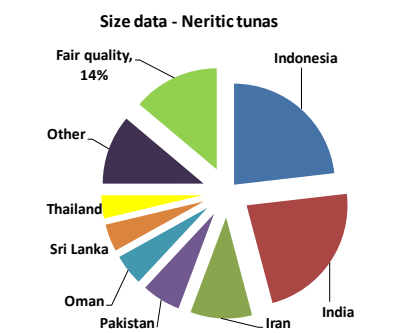












Surface fisheries: Purse seine

Table 5b: Status of IOTC catch statistics for purse seine fisheries, by year and species (1974-2013)

Figure 2a: Contribution (in %) that the purse seine catches for each species group, and for all species combined, made out of the total catches of that same group, for all fisheries combined (2004-2013)

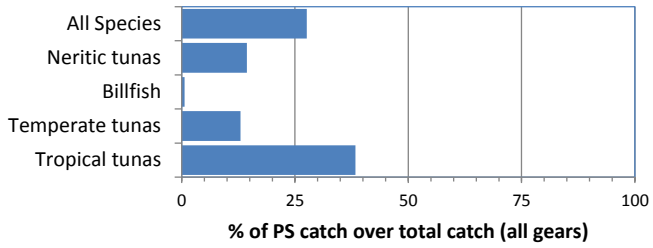
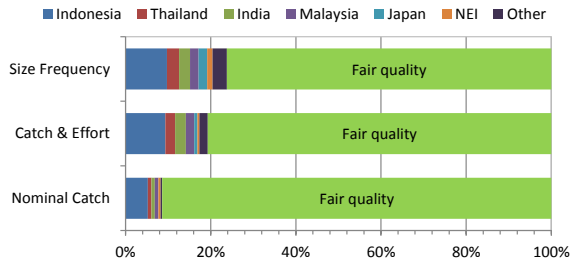


Figure 3a: Amount of PS statistics (in %) presumed to be uncertain, by type of dataset and fleet, over the total PS catch (1974-2013)



Overall, the nominal catches recorded for purse seine fisheries in the IOTC database are considered to be of **fair to good quality**, in particular for tropical and temperate tunas (Table 5b). Purse seiners target tropical tunas or neritic tunas, depending on the type of vessel, and area operated: over the last forty years (1974-2013) tropical tunas made 84% and neritic tunas 14% of the total purse seine catches (Table 5b).

During the last decade, **purse seine gears have reported over 25% of the catches of IOTC species in the Indian Ocean**, especially tropical tunas (≈38%), neritic tunas (≈15%), and temperate tunas (≈13%, the majority southern Bluefin tuna) (Figure 2a).

Over the last forty years (1974-2013), **92% of the nominal catches**, **81% of the catch-and-effort**, and **76% of the size frequency statistics** of purse seine fisheries recorded in the IOTC database are considered to be of **good quality** (Figure 3a). The statistics for the following purse seine fleets are considered to be of uncertain quality (1974-2013):

- **Indonesia**: The Secretariat estimated catches for the coastal purse seine fishery of Indonesia (target is neritic tunas) from the total aggregated catches reported by Indonesia; since 2006 Indonesia has been reporting catches by gear to the Secretariat, but the completeness and quality of the datasets reported remains uncertain. To date, Indonesia has not reported catch-and-effort and size data for its purse seine fisheries.
- **Thailand**: The catches of large and coastal purse seine vessels reported by Thailand are not fully by species; this affects the quality of the nominal catches and catch-and-effort of both tropical tunas and neritic tunas. To date, Thailand has not reported size data for its purse seine fisheries. The Thai large PS fleet is not operating any more in the Indian Ocean (in the Atlantic Ocean since July 2010).
- **India**: To date, India has not reported catch-and-effort and size data for its purse seine fisheries.
- **Malaysia**: To date, Malaysia has not reported size data for its purse seine fisheries.
- **Japan**: Japan has only reported size data for its purse seine fisheries in recent years.
- **NEI**: The catches of ex-Russian vessels, recorded under the flag of Belize and other unidentified flags, were estimated by the Secretariat in the past; between 2005 and 2010 these vessels operated under the flag of Thailand for which the statistics are considered to be of better quality. However, the amount of size data available for this fleet is very low.

Surface fisheries: Pole-and-line

Table 5c: Status of IOTC catch statistics for pole-and-line fisheries, by year and species (1974-2013)

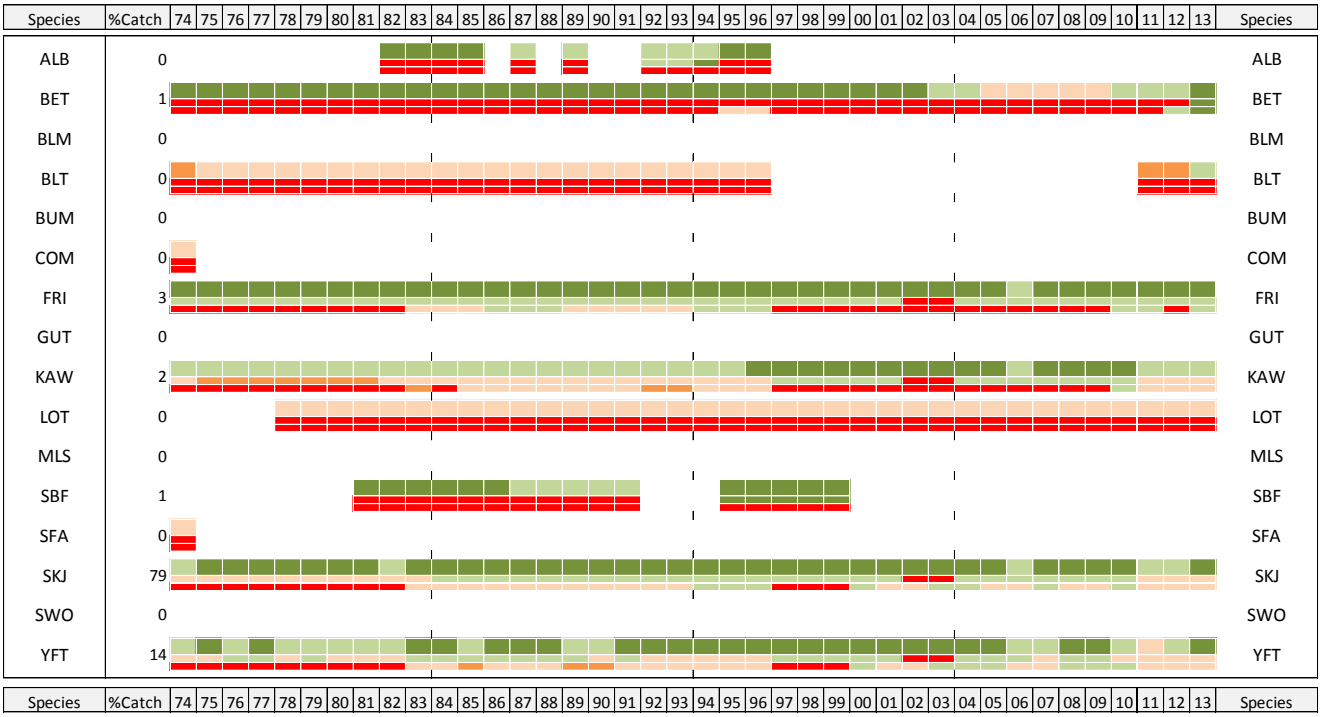


Figure 2b: Contribution (in %) that the pole-and-line catches for each species group, and for all species combined, made out of the total catches of that same group, for all fisheries combined (2004-2013)

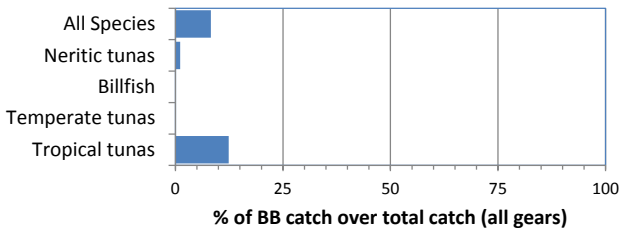
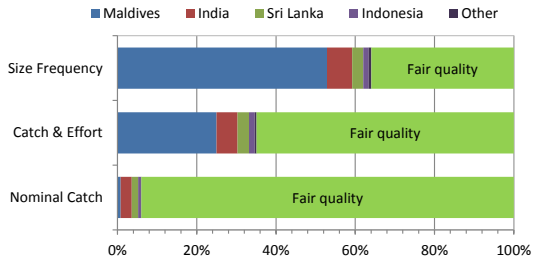


Figure 3b: Amount of BB statistics (in %) presumed to be uncertain, by type of dataset and fleet, over the total BB catch (1974-2013)



Overall, the nominal catches recorded for pole-and-line fisheries in the IOTC database are considered to be of **fair to good quality** (Table 5c). Baitboats target tropical tunas in the Indian Ocean: over the last forty years (1974-2013) 94% of the baitboat catches were made of tropical tunas (Table 5c).

During the last decade, **pole-and-line gears caught around 8% of the IOTC species in the Indian Ocean**, especially tropical tunas (≈12%) (Figure 2b).

Over the last forty years (1974-2013), **94% of the nominal catches, 65% of the catch-and-effort**, and **36% of the size frequency statistics** of pole-and-line fisheries recorded in the IOTC database are considered to be of **good quality** (Figure 3b). The statistics for the following baitboat fleets are considered to be of uncertain quality, for the species and time-periods identified (1974-2013):

- **Maldives**: A small proportion of the catches and catch and effort reported by Maldives are not by species, in particular some neritic tuna species. In addition, Maldives has not provided catch-and-effort and size data fully by the IOTC standards.
- **India** (Lakshadweep): The Secretariat estimated catches for the pole-and-line fishery of India from the total aggregated catches for years in which India had not reported catches by gear. With the exception of a partial report of catch-and-effort data for 2013, to date India has not reported catch-and-effort and size data for its pole-and-line fisheries.
- **Sri Lanka:** The majority of the nominal catches reported by Sri Lanka are not by gear and some are not by species. To date, Sri Lanka has not reported catch-and-effort and size data for its pole-and-line fisheries.
- **Indonesia**: The Secretariat estimated catches for the pole-and-line fishery of Indonesia from the total aggregated catches reported by Indonesia; since 2006 Indonesia has been reporting catches by gear to the Secretariat, but the completeness and quality of the datasets reported remains uncertain. To date, Indonesia has not reported catch-and-effort and size data for its pole-and-line fisheries.

Surface fisheries: Gillnet

Table 5d: Status of IOTC catch statistics for gillnet fisheries, by year and species (1974-2013)

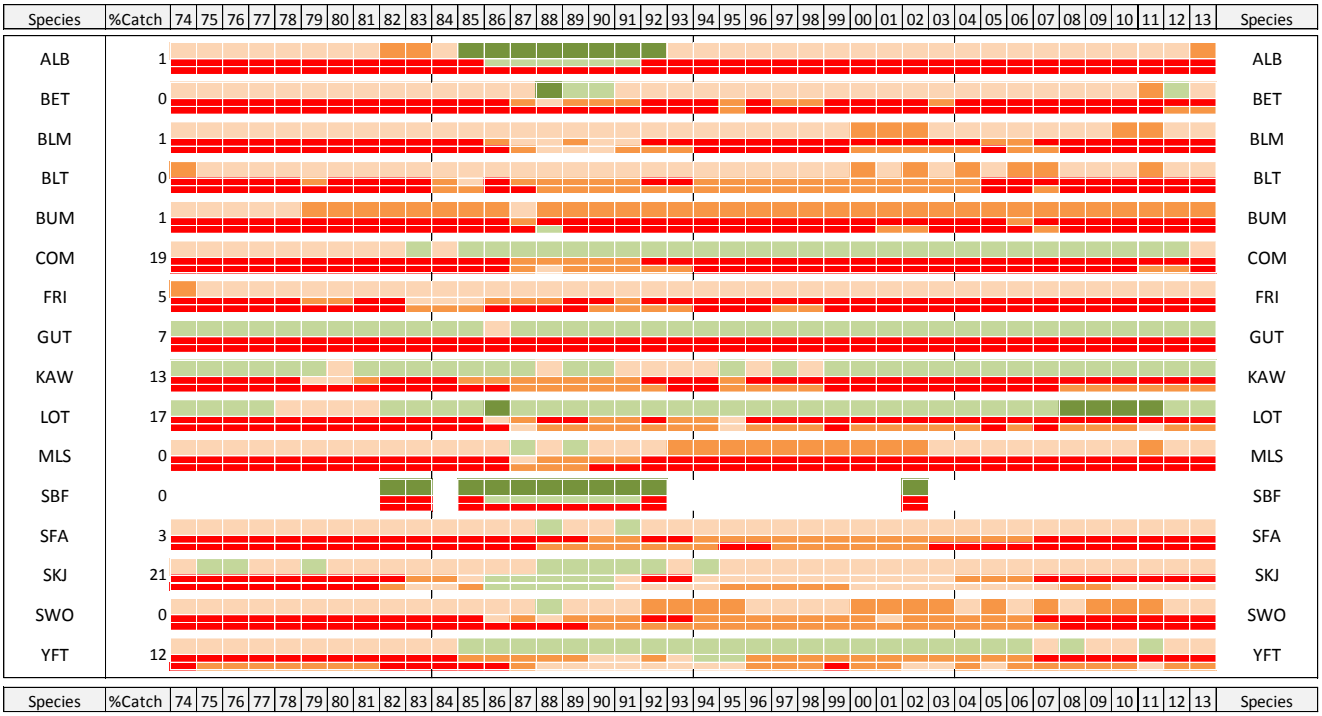


Figure 2c: Contribution (in %) that the gillnet catches for each species group, and for all species combined, made out of the total catches of that same group, for all fisheries combined (2004-2013)

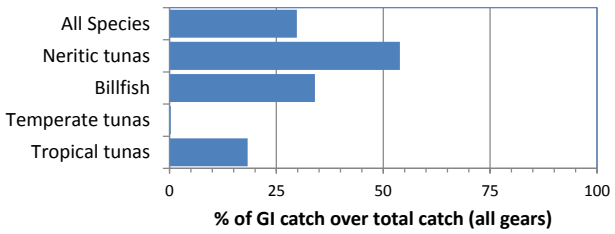
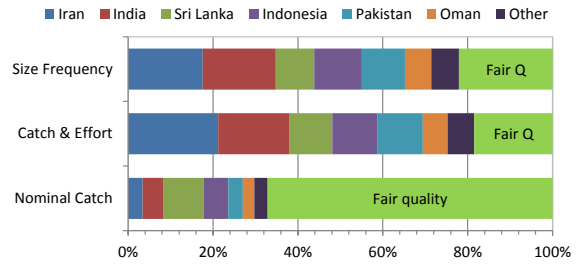


Figure 3c: Amount of GI statistics (in %) presumed to be uncertain, by type of dataset and fleet, over the total GI catch (1974-2013)



Overall, the nominal catches recorded for gillnet fisheries in the IOTC database are considered to be of **poor to fair quality,** depending on the fleet and time period (Table 5d). Over the last forty years (1974-2013) 63% of the gillnet catches were made of neritic tunas and 33% of tropical tunas (Table 5d).

During the last decade, **gillnet gears caught around 30% of the IOTC species in the Indian Ocean**, especially neritic tunas (≈55%), billfish (≈35%) and tropical tunas (≈20%) (Figure 2c).

Over the last forty years (1974-2013), **65% of the nominal catches, 18% of the catch-and-effort**, and **22% of the size frequency statistics** of gillnet fisheries recorded in the IOTC database are considered to be of **good quality** (Figure 3c). The statistics for the following gillnet fleets are considered to be of uncertain quality (1974-2013):

- **Iran**: To date Iran has not provided catch-and-effort and size data fully by the IOTC standards.
- **India**: The Secretariat estimated catches for the gillnet fishery of India from the total aggregated catches for years in which India had not reported catches by gear; this affects the quality of the catches of neritic tunas. To date, India has not reported catch-and-effort and size data for its gillnet fisheries.
- **Sri Lanka**: Sri Lanka does not report catches fully by species; in particular, the catches of marlins are reported aggregated. To date, Sri Lanka has not provided catch-and-effort and size data fully by the IOTC standards.
- **Indonesia**: The Secretariat estimated catches for the gillnet fishery of Indonesia from the total aggregated catches reported by Indonesia; this affects the quality of the catches of both tropical tunas and neritic tunas. Since 2006 Indonesia has been reporting catches by gear and species to the Secretariat, but the completeness and quality of the datasets reported remains uncertain. To date, Indonesia has not reported catch-and-effort and size data for its gillnet fisheries.
- **Pakistan**: Pakistan does not report catches fully by species and has only reported catches to the IOTC in recent years. To date, Pakistan has not reported catch-and-effort and size data for its gillnet fisheries.
- **Oman**: Oman does not report catches fully by gear. To date, Oman has not provided size data.

Longline fisheries

Table 5e: Status of IOTC catch statistics for longline fisheries, by year and species (1974-2013)

Figure 2d: Contribution (in %) that the longline catches for each species group, and for all species combined, made out of the total catches of that same group, for all fisheries combined (2004-2013)

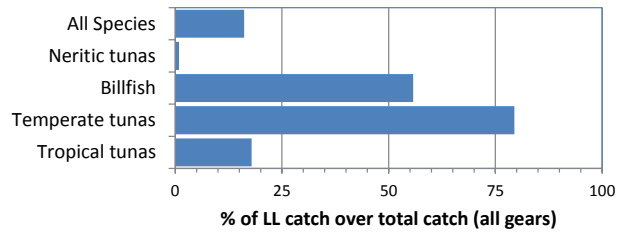
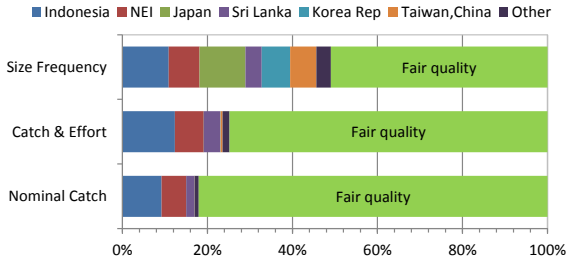


Figure 3d: Amount of LL statistics (in %) presumed to be uncertain, by type of dataset and fleet, over the total LL catch (1974-2013)



Overall, the catches recorded for longline fisheries in the IOTC database are considered to be of **good quality until the late-1980's and fair quality since then,** for most species (Table 5e). Over the last forty years (1974-2013), 69% of the longline catches were made of tropical tunas, 16% of temperate tunas and 15% of billfish (Table 5e).

During the last decade, **longline gears caught around 17% of the IOTC species in the Indian Ocean**, especially temperate tunas (≈79%), billfish (≈55%) and tropical tunas (≈17%) (Figure 2d).

Over the last forty years (1974-2013), **82% of the nominal catches, 75% of the catch-and-effort**, and **49% of the size frequency statistics** of longline fisheries recorded in the IOTC database are considered to be of **good quality** (Figure 3d). However, the quality of statistics in recent years has worsened, in particular as refers to the availability of catch-and-effort and size frequency data. The statistics for the following longline fleets are considered to be of uncertain quality (1974-2013):

- **Indonesia**: The Secretariat estimated the catches of deep-freezing longline vessels and catches of albacore for Indonesia, using market data; in addition, a small component of the catches of fresh-tuna longliners are not reported by species; this affects the quality of the catches of tropical tunas, temperate tunas and billfish. To date, Indonesia has not reported catch-and-effort data for its longline fisheries and size data has not been reported as per the IOTC requirements.
- **NEI**: The Secretariat estimates the catches of deep-freezing longline vessels that operate under flags of non-reporting countries using information from both the IOTC-OFCF Project and Third Parties. This category includes also the catches estimated for fleets under the flags of IOTC CPCs that do not report complete sets of catches to the Secretariat. Catch-and-effort and size data are usually not available for this component, in particular deep-freezing longliners.
- **Sri Lanka**: Sri Lanka does not report catches by gear and, to date, Sri Lanka has not provided catch-and-effort and size data fully by the IOTC standards.
- **Japan, Republic of Korea, and Taiwan,China**: Japan, the Republic of Korea and Taiwan,China have not provided size data for their longline fisheries over the entire time series and, where size data are available, the amount of fish measured is often below the minimum number set by the Commission (one fish measurement per metric ton of catch, by species).

Hand line, trolling and other small-scale fisheries

Table 5f: Status of IOTC catch statistics for hand line, trolling and other small-scale line fisheries, by year and species (1974-2013)

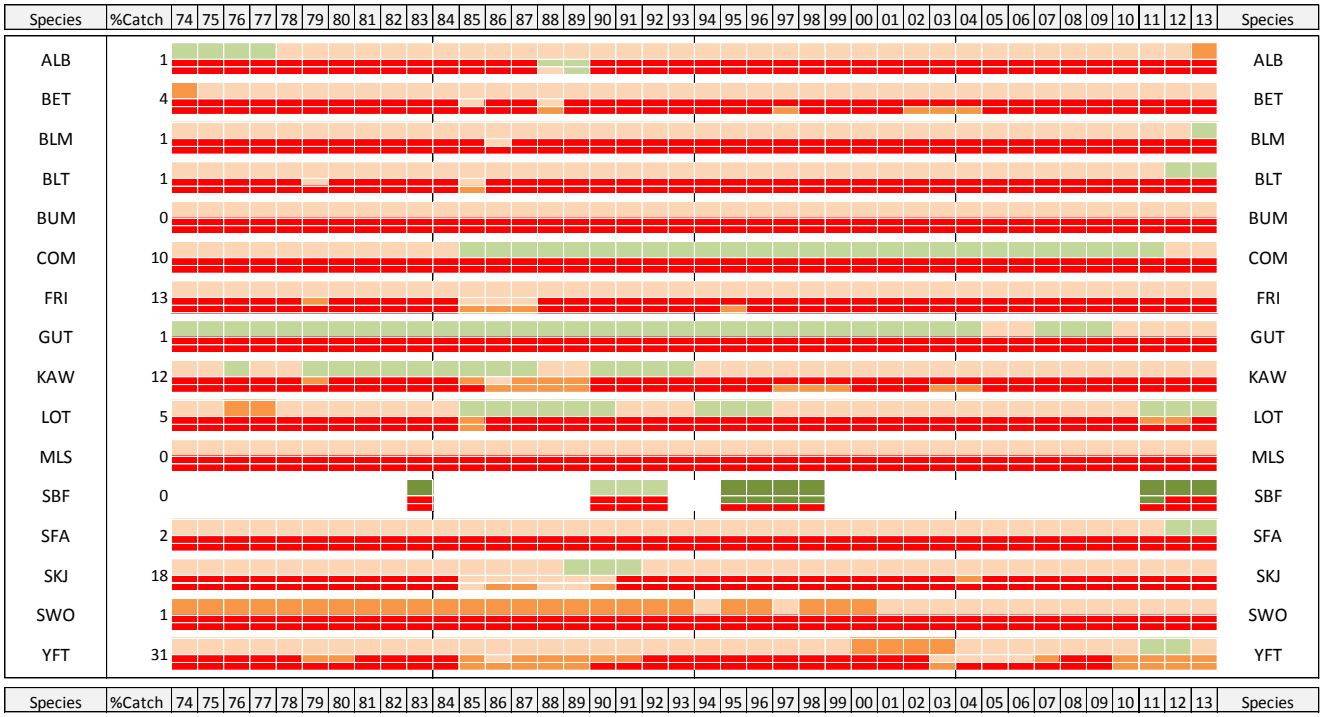


Figure 2e: Contribution (in %) that the hand line, trolling and other NEI gears catches for each species group, and for all species combined, made out of the total catches of that same group, for all fisheries combined (2004-2013)

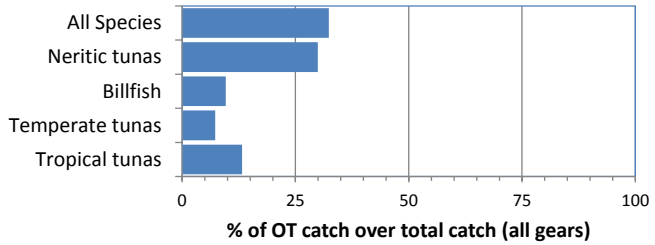
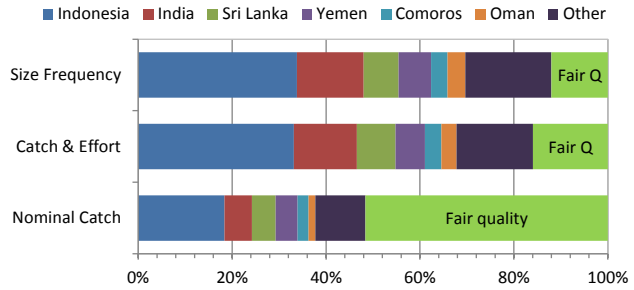


Figure 3e: Amount of LI+OT statistics (in %) presumed to be uncertain, by type of dataset and fleet, over the total LI+OT catch (1974-2013)



This category includes the catches of hand and troll lines and catches of other IOTC species that are not reported by gear. The majority of the catches not reported by gear are likely to refer to coastal gillnets, hand line, trolling and other minor artisanal fisheries.

Overall, the catches recorded for these fisheries in the IOTC database are considered to be of **poor quality** (Table 5f). Over the last forty years (1974-2013), 42% of the catches under line fisheries were made of neritic tunas and 53% of tropical tunas (Table 5f).

Hand line, trolling and other unidentified gears catch over 31% of the IOTC species in the Indian Ocean, especially neritic tunas (≈29%), tropical tunas (≈12%), and billfish (9%) (Figure 2e).

Over the last forty years (1974-2013), **51% of the nominal catches, 15% of the catch-and-effort**, and **10% of the size frequency statistics** of these fisheries recorded in the IOTC database are considered to be of **good quality** (Figure 3e). The catches for the following fleets are considered to be of uncertain quality (1974-2013):

- **Indonesia**: The Secretariat estimated catches for the handline and trolling fishery of Indonesia from the total aggregated catches reported by Indonesia; this affects the quality of the catches of both tropical tunas and neritic tunas. Since 2006 Indonesia has been reporting catches by gear and species to the Secretariat. To date, Indonesia has not reported catch-and-effort and size data for line and other NEI fisheries.
- **India**: The Secretariat estimated catches for the hand line and trolling fisheries of India from the total aggregated catches for years in which India had not reported catches by gear; this affects the quality of the catches of neritic tunas. To date, India has not reported catch-and-effort and size data for line and other NEI fisheries.
- **Sri Lanka**: Sri Lanka does not report catches by gear and, to date, has not provided catch-and-effort and size data.
- **Yemen**: To date, Yemen has not reported statistics to the IOTC.
- **Comoros**: Comoros did not report statistics for the majority of the time-series.
- **Oman**: Oman does not report catches by gear and, to date, has not provided size data as per the IOTC requirements.

4. STATUS OF THE IOTC FISHING CRAFT STATISTICS (FC) AND ACTIVE VESSELS (AV) DATABASES

The numbers of vessels fishing for IOTC species in the IOTC Area of Competence are used to:

- Derive input-fishing capacity in the Indian Ocean
- Estimate the catches of fleets that operate under the flags of countries that do not report data to the IOTC
- Assess the completeness of the catches reported by IOTC CPCs completing those catches when the fleets concerned are not fully monitored by their flag countries

During 2009, the Secretariat participated in a study to estimate **input-fishing capacity** for the fleets fishing for IOTC species in the Indian Ocean during 2006-08; the results of this study were presented to the IOTC Scientific Committee in 2009. In 2013 the IOTC Secretariat worked with an independent Consultant to update previous estimates of input fishing capacity in the Indian Ocean and complete information for 2009 and following years. The study included a full review of the IOTC numbers of industrial vessels, as defined by the Commission[5], over the entire time-series; and an attempt to put together numbers of small-scale fishing craft fishing that fished for tunas in the Indian Ocean during the same period. The Report prepared by the Secretariat is available[6] and will be presented at the 16th Meeting of the IOTC Scientific Committee (Busan, December 2013). In 2014 the IOTC Secretariat updated the fishing craft statistics series to incorporate estimates for 2013 and update past estimates, where necessary.

The numbers of vessels operating under the flags of **countries that do not report their catches** to the IOTC are estimated from data reported by other countries. Those data include:

- IOTC IUU list (IOTC Resolution 11/03);
- Identification, dimensions and other vessels attributes, by vessel, for those foreign vessels that owed fishing licenses to operate within the Economic Exclusive Zone (EEZ) of the reporting country (as specified in IOTC Resolution 14/05);
- Identification and total catches unloaded, by species and vessel, for those foreign vessels using ports in the territory of the reporting country (as specified in IOTC Resolution 10/11 & 05/03);
- Identification and total catches transhipped, by species and vessel, for vessels participating in the IOTC Transhipment Programme(as specified in IOTC Resolution 14/06);
- Data provided by other parties, including data on the imports of tuna for canning, by species and vessel, from processors cooperating with the International Seafood Sustainability Foundation (ISSF) or other initiatives.

The catches for those fleets are estimated by using the estimated vessel numbers (obtained as above) and the catch data for vessels from other (reporting) fleets that operated in the same areas and targeted the same species. The catches of this component are recorded under the NEI category.

In addition, the Secretariat estimates catches for countries that report only partial statistics for their fleets. This refers to the **catches of fleets of IOTC CPCs** that are not fully monitored by their flag states. The catches reported by these countries are assumed incomplete because the average catches estimated by vessel by year are significantly lower than those estimated for similar fleets of other countries, on the assumption that the same levels of activity apply to both fleets. This applies to the following fleets:

- Longline fleet of **India**: Up to 100 longliners have been operating in India in recent years, including fresh-tuna longliners and deep-freezing longliners.
- Longline fleets of **Indonesia** and **Malaysia**: Indonesia and Malaysia do not monitor the catches of vessels under their flag that are unloaded in ports outside their territory.
- Longline fleet of **Philippines**: The catches of bigeye tuna reported by Philippines for its longline fleet in the Indian Ocean have been consistently lower than the amounts of Indian Ocean bigeye tuna imported by Japan from this fleet.

[5] The term industrial vessel includes all large-scale vessels (vessel length overall is 24 m or greater) that fished for IOTC species within the IOTC Area of Competence during the year concerned; and all small-scale vessels that fished for IOTC species within the IOTC Area of Competence, and where fishing occurred partially or fully beyond the Economic Exclusive Zones of their flag countries during the year concerned.

[6] G. Moreno & Herrera, M. (IOTC Secretariat), 2013. Estimation of fishing capacity by tuna fishing fleets in the Indian Ocean. Report presented at the 16th Meeting of the Scientific Committee of the Indian Ocean Tuna Commission, Busan, Republic of Korea, 2-6 December 2013. *IOTC–2013–SC16–INF04: 88 pp.*

The additional catches estimated for these countries are also included into the NEI category.

Data Availability

Data from **artisanal** (small-scale) fisheries are scarce and inconsistent in many cases. On the contrary, the statistics of large-scale and medium-scale fleets are thought fairly complete:

Purse seine fleets: The number of purse seiners fishing for tropical tunas on the high seas (usually referred to as "industrial") is well known. At present, this fleet is flagged mainly in countries of the European Union, Seychelles, Iran, Mauritius, Sri Lanka, Japan and the Republic of Korea.

Longline fleets: There are many longline fleets fishing tuna in the Indian Ocean, mainly under the flags of Australia, Belize, China, Taiwan,China, the EU, India, Indonesia, Japan, the Republic of Korea, Madagascar, Malaysia, Mauritius, Mozambique, Oman, Philippines, Senegal, Seychelles, South Africa, Tanzania, Thailand and other longliners operating under various flags of non-reporting countries. The total number of non-reporting longliners is estimated whenever the Secretariat receives new data from third parties (NEI category).

Oceanic gillnet fisheries of Iran and Pakistan: The number of oceanic gillnet vessels operating in the Indian Ocean is well known for Iran and poorly know for Pakistan.

Offshore gillnet/longline fishery of Sri Lanka: The number of offshore gillnet/longline vessels that operate under the flag of Sri Lanka is well known.

Pole-and-line fishery of Maldives: The number of pole-and-line vessels that operate under the flag of Maldives is well known.

5. OTHER IOTC DATA HOLDINGS

a. Biological data

The IOTC Secretariat compiles datasets and information relating to IOTC species and main species of sharks, as identified by the Commission, including the data used to derive standard measurements for IOTC species and other biological information of interest to the IOTC. The information available was presented to the WPDCS in 2013[7], and separate reports were presented for the consideration of each species Working Party in 2014[8], as requested by the IOTC Scientific Committee. The IOTC Secretariat will update the equations available as it receives updates from the Working Parties.

[7] Geehan, J. & Pierre, L. (IOTC Secretariat), 2013. Biological data on tuna and tuna-like species gathered at the IOTC Secretariat: Status Report. Document presented at the 9th Meeting of the Working Party on Data Collection and Statistics of the Indian Ocean Tuna Commission, Busan, Republic of Korea, 29-30 November 2013. *IOTC–2013–WPDCS09–13.*

[8] Herrera, M, Geehan, J. & Pierre, L. (IOTC Secretariat), 2014. Review of the statistical data and fishery trends for billfish. Document presented at the 12th Meeting of the Working Party on Billfish of the Indian Ocean Tuna Commission, Yokohama, Japan, 21-25 October 2014. *IOTC–2014–WPB12–07.*

Geehan, J., Herrera, M & Pierre, L. (IOTC Secretariat), 2014. Review of the statistical data and fishery trends for tropical tunas. Document presented at the 16th Meeting of the Working Party on Tropical Tunas of the Indian Ocean Tuna Commission, Bali, Indonesia, 15-19 November 2014. *IOTC–2014–WPTT16–07.*

Martin, S, Herrera, M & Pierre, L. (IOTC Secretariat), 2014. Review of the statistical data and fishery trends for bycatch species. Document presented at the 10th Meeting of the Working Party on Ecosystems and Bycatch of the Indian Ocean Tuna Commission, Yokohama, Japan, 27-31 October 2014. *IOTC–2014–WPEB10–07.*

b. Observer data

The Secretariat has received limited information concerning the past and current sub-regional and national observer programmes in the Indian Ocean, the latest falling under the IOTC Regional Observer Scheme (cf. Resolution 11/04 *on a Regional Observer Scheme*). The information available is summarized in a document that will be presented at the 17th meeting of the IOTC Scientific Committee[9].

c. Field sampling

IOTC Resolution 11/04 contains also provisions covering the monitoring of artisanal fisheries: *"The number of the artisanal fishing vessels landings shall also be monitored at the landing place by field samplers[10]. The indicative level of the coverage of the artisanal fishing vessels should progressively increase towards 5% of the total levels of vessel activity (i.e. total number of vessel trips or total number of vessels active)."*

In order to assess the level of coverage of artisanal fleets by coastal countries in the IOTC Region, in 2011 the IOTC Secretariat initiated a Pilot Project. To this purpose, the Secretariat hired the services of a Consultant, who prepared a report covering the fisheries in nine coastal countries in the Region, having important catches of tropical tunas (70% of the total catches estimated for coastal countries) . The report of the Consultant is available at the Secretariat, and was summarized in a document presented to the IOTC Scientific Committee in 2011 (IOTC-2011-SC14-38).

Since the last IOTC WPDCS Meeting the IOTC Secretariat has coordinated capacity building activities in some of the countries covered in the above report. These actions followed requests from local institutions and were possible thanks to financial support from the IOTC and its partners, including: the COI-SmartFish Project, the Bay of Bengal Large Marine Ecosystems Project and, the Overseas Fisheries Cooperation Foundation of Japan. Capacity building activities were implemented in Comoros, Indonesia, Madagascar, Sri Lanka, and Thailand. More details about these activities are provided in a separate document[11].

d. Tagging data

Since 2002, the Secretariat has been coordinating and supervising the Indian Ocean Tuna Tagging Programme (IOTTP). This programme was a combination of a main tagging project, the Regional Tuna Tagging Project in the Indian Ocean (RTTP-IO), funded by the EU (9th EDF, DG-Dev), and several pilot and small-scale tuna tagging projects, funded by the DG-Fish (ex DG-Mare) and the government of Japan. During those projects, around 220,000 tropical tuna -skipjack, yellowfin and bigeye - were tagged and released in the whole Indian Ocean. Tag recovery schemes have been developed and implemented in most of the coastal countries and in the main distant water fishing nations in order to ensure the reporting of a maximum of recaptured tagged tunas. As a result, around 34,000 tuna have been recaptured and reported to the Secretariat, which represent a global recovery rate of around 16%.

The specific objective of this programme was to reinforce the scientific knowledge of tropical tuna stocks and the rate of exploitation in the Indian Ocean by obtaining the crucial model parameters for stock assessment.

All the tagging and recapture data is hosted at IOTC and is in the public domain. The data is available on request to IOTC. At the moment, all the data from the RTTP-IO is stored in a special database developed for the project.

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[9] IOTC Secretariat, 2014. Update on the implementation of the IOTC Regional Observer Scheme. Document presented at the 17th Meeting of the Scientific Committee of the Indian Ocean Tuna Commission, Eden Island, Seychelles, 8-12 December 2014. *IOTC–2014–SC17–8.*

[10] Field sampler: a person that collects information on land during the unloading of fishing vessels. Field sampling programmes can be used for quantifying catch, retained bycatch, collecting tag returns, *etc.*

[11] Herrera, M & Sakonju, K. (IOTC Secretariat), 2014. IOTC Capacity Building Activities in Support of developing coastal IOTC CPCs. Document presented at the 10th Meeting of the Working Party on Data Collection and Statistics of the Indian Ocean Tuna Commission, Eden Island, Seychelles, 2-4 December 2014. *IOTC–2014–WPDCS10–08.*

Tagging data contains the following information:

- Tag series and tag number
- Species
- Fork length
- Data and position of tagging
- Type of tag
- Tagger
- Gear
- Information on the school
- Quality codes
- ...

Recovery data contains the following information:

- Species
- Fork length and/or weight at recovery
- If found during fishing: date and position of recovery
- If found during processing: estimated date and position of recovery
- Date of reporting
- Country of reporting
- Gear of recapture
- Place and process where found
- Name of the vessel (*confidential*)
- Name and details of recoverer (*confidential*)
- Reward given (*confidential*)
- Name of staff collecting data and checking data

Every year the IOTC Secretariat prepares and makes available the files including the tagging data to be used for the assessments of tropical tuna species, as required by the WPTT. The tagging data generated by the RTTP-IO and the broader IOTTP, have been used in the assessments of tropical tuna species since 2008. Growth curves for the three species and natural mortality rates have also been derived from the tagging data, and were updated for some species (growth for yellowfin and skipjack, exploitation rate and natural mortality for skipjack).

A summary of all the documents, reports and data files prepared by the Data Section of the IOTC Secretariat since the last meeting of the WPDCS is presented in Appendix II.

APPENDIX I

Resolutions containing requirements for the collection and/or reporting of data to the IOTC

- IOTC Resolution 10/02: ***Mandatory statistical requirements*** *for IOTC Members and Cooperating Non-Contracting Parties (CPC's): Defines IOTC's data reporting procedures for* ***IOTC SPECIES,*** *main* ***shark species*** *caught by IOTC fisheries****,*** *and* ***non-target, associated and dependent species****.*

- IOTC Resolution 13/08: *Procedures on a* ***fish aggregating devices (FADs)*** *management plan, including more detailed specifications of catch reporting from fad sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species: Applies to IOTC CPCs that have purse seine or baitboat vessels under their flag that catch tuna schools associated to Fish Aggregating Devices. This resolution establishes minimum data requirements for fishing on FADs through a FAD logbook and reporting of aggregated data to the IOTC.*

- IOTC Resolution 13/03[12]: *On the recording of* ***catch and effort data*** *by fishing vessels in the IOTC area of competence: Establishes minima data requirements for the collection of operational catch and effort data on authorized vessels, including the species for which those requirements apply. Data requirements are set for industrial purse seine, longline, drifting gillnet, pole-and-line, trolling, and handline. This Resolutions calls also port states that license foreign fishing vessels to collect logbooks on fishing by those vessels within their EEZs and report this information in aggregated form to the IOTC Secretariat.*

- IOTC Resolution 05/05 *Concerning the conservation of* ***SHARKS*** *caught in association with fisheries managed by IOTC*
    - *Paragraph 1: Contracting Parties, Cooperating non-Contracting Parties (CPCs) shall annually* ***report data for catches of sharks, in accordance with IOTC data reporting procedures, including available historical data****.*
    - *Paragraph 2: The* ***ratio of fin-to-body weight of sharks*** *shall be reviewed by the Scientific Committee and reported back to the Commission in 2006 for revision, if necessary.*

- IOTC Resolution 13/06: *On A Scientific And Management Framework On The Conservation Of Shark Species Caught In Association With IOTC Managed Fisheries*
    - *Paragraph 5: CPCs shall encourage their fishers to record incidental catches as well as live releases of* ***OCEANIC WHITETIP SHARKS****. These data shall be kept at the IOTC Secretariat.*

- IOTC Resolution 12/09 *On the conservation of* ***THRESHER SHARKS*** *(family Alopiidae) caught in association with fisheries in the IOTC area of competence*
    - *Paragraph 4: CPCs shall encourage their fishers to record and report incidental catches as well as live releases. These data will be then kept at the IOTC Secretariat.*
    - *Paragraph 8: The Contracting Parties, Cooperating Non-Contracting Parties, especially those directing fishing activities for sharks, shall submit data for sharks, as required by IOTC data reporting procedures.*

- IOTC Resolution 13/05 *On the conservation of* ***WHALE SHARKS*** *(Rhincodon typus)*
    - *Paragraph 3: CPCs shall require that, in the event that a whale shark is unintentionally encircled in the purse seine net, the master of the vessel shall:*
        b. report the incident to the relevant authority of the flag State, with the following information…
    - *Paragraph 4: CPCs using other gear types fishing for tuna and tuna-like species associated with a whale shark shall report all interactions with whale sharks to the relevant authority of the flag State and include all the information outlined in paragraph 3b(i–v).*

[12] This Resolution was objected by India and therefore IOTC Resolution 12/03 applies to India.

- *Paragraph 7: CPCs shall report the information and data collected under paragraph 3(b) and paragraph 4 through logbooks, or when an observer is onboard through observer programs, and provide to the IOTC Secretariat by 30 June of the following year and according to the timelines specified in Resolution 10/02 (or any subsequent revision).*

- IOTC Resolution 12/06 *On reducing the incidental bycatch of **SEABIRDS** in **longline fisheries***
  - *Paragraph 1: CPCs shall record data on seabird incidental bycatch by species, notably through scientific observers in accordance with Resolution 11/04 and report these annually.*

- IOTC Resolution 12/04 *On **MARINE TURTLES***
  - *Paragraph 3: CPCs shall collect (including through logbooks and observer programs) and provide to the IOTC Secretariat no later than 30 June of the following year in accordance with Resolution 10/02 (or any subsequent revision), all data on their vessels' interactions with marine turtles. The data shall include the level of logbook or observer coverage and an estimation of total mortality of marine turtles incidentally caught in their fisheries.*

- IOTC Resolution 13/04 *On the conservation of **CETACEANS***
  - *Paragraph 3: CPCs shall require that, in the event that a Cetacean is unintentionally encircled in the purse seine net, the master of the vessel shall:*
    b. report the incident to the relevant authority of the flag State, with the following information…
  - *Paragraph 4: CPCs using other gear types fishing for tuna and tuna-like species associated with cetaceans shall report all interactions with cetaceans to the relevant authority of the flag State and include all the information outlined in paragraph 3b(i–v).*
  - *Paragraph 7: CPCs shall report the information and data collected under paragraph 3(b) and paragraph 4 through logbooks, or when an observer is onboard through observer programs, and provide to the IOTC Secretariat by 30 June of the following year and according to the timelines specified in Resolution 10/02 (or any subsequent revision).*

- IOTC Resolution 11/04 *On a Regional **OBSERVER SCHEME***
  - *Paragraph 9: CPCs shall provide to the Executive Secretary and the Scientific Committee annually a report of the number of vessels monitored and the coverage achieved by gear type in accordance with the provisions of this Resolution.*
  - *Paragraph 11: … The CPCs shall send within 150 days at the latest each report, as far as continuous flow of report from observer placed on the longline fleet is ensured, which is recommended to be provided with 1°x1° format to the Executive Secretary, who shall make the report available to the Scientific Committee upon request. …*

APPENDIX II
Documents, Data Files, and Reports relating with IOTC Data and Statistics (2014)

Reference	*Name*	*Authorship*
IOTC-2014-WPNT04-07 Rev_1	Review of the statistical data available for the neritic tuna species	IOTC Secretariat
IOTC-2014-WPNT04-DATA-Catalogues	IOTC Species Data Catalogues – availability of data	IOTC Secretariat
IOTC-2014-WPNT04-DATA-CEALL	Catch and Effort - all vessels	IOTC Secretariat
IOTC-2014-WPNT04-DATA-CECoastal	Catch and Effort - vessels using other gears	IOTC Secretariat
IOTC-2014-WPNT04-DATA-CELongline	Catch and Effort - vessels using drifting longlines	IOTC Secretariat
IOTC-2014-WPNT04-DATA-CEref	Catch and Effort - reference	IOTC Secretariat
IOTC-2014-WPNT04-DATA-CESurface	Catch and Effort - vessels using pole and lines or purse seines	IOTC Secretariat
IOTC-2014-WPNT04-DATA-Equations	Equations used to convert from fork length to round weight for neritic tuna species	IOTC Secretariat
IOTC-2014-WPNT04-DATA-NCv2	Nominal Catches per Fleet, Year, Gear, IOTC Area and species	IOTC Secretariat
IOTC-2014-WPNT04-DATA-SF	Available size frequency data - neritic tuna	IOTC Secretariat
IOTC-2014-WPNT04-DATA-SFref	Size frequency - reference	IOTC Secretariat
IOTC-2014-WPNT04-INF02	IOTC-OFCF Project for strengthening and improving statistical systems for tuna resources in the Indian Ocean activities: Phase IV progress report	IOTC-OFCF Project
IOTC-2014-WPTmT05-07	Review of the statistical data and fishery trends for albacore	IOTC Secretariat
IOTC-2014-WPTmT05-INF02	Indian Ocean tuna fisheries of Indonesia albacore catch estimation workshop: Review of issues and considerations	IOTC Secretariat & DGCF Indonesia
IOTC-2014-WPTmT05-DATA TWN-CHN LL CPUEv2	Taiwan-China Alternative CPUE	Taiwan,China
IOTC-2014-WPTmT05-DATA JPN LL CPUE	Japan CPUE	Japan
IOTC-2014-WPTmT05-DATA Rev_1 KOR LL CPUE	Rep. of Korea longline CPUE	Rep. of Korea
IOTC-2014-WPTmT05-DATA TWN-CHN LL CPUE	Taiwan,China CPUE	Taiwan,China
IOTC-2014-WPTmT05-DATA-Catalogues	IOTC Species Data Catalogues – availability of data	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-CEALL	Catch and Effort - all vessels	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-CECoastal	Catch and Effort - vessels using other gears	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-CELongline	Catch and Effort - vessels using drifting longlines	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-CEref	Catch and Effort - reference	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-CESurface	Catch and Effort - vessels using pole and lines or purse seines	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-Equations	Equations used to convert from fork length to round weight for temperate tuna species	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-NCv2	Nominal Catches per Fleet, Year, Gear, IOTC Area and species	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-SA	Files for Albacore Stock Assessment	IOTC Secretariat
IOTC-2014-WPTmT05-DATA-SFref	Size frequency - reference	IOTC Secretariat
IOTC-2014-WPB12-07 Rev_2	Review of the statistical data and fishery trends for billfish	IOTC Secretariat
IOTC-2014-WPB12-DATA01	Billfish datasets available (14 October 2014)	IOTC Secretariat
IOTC-2014-WPB12-DATA02	Taiwan,China standardised longline CPUE series 1980–2012	Taiwan,China
IOTC-2014-WPB12-DATA03	Japan standardised longline CPUE series 1971–2013	Japan
IOTC-2014-WPB12-DATA04	EU-Spain standardised longline CPUE series 2001–2012	EU-Spain

Reference	*Name*	*Authorship*
IOTC-2014-WPB12-DATA05	EU-Portugal standardised longline CPUE series 1998–2013	EU-Portugal
IOTC-2014-WPB12-DATA06	Nominal Catches per Fleet, Year, Gear, IOTC Area and species	IOTC Secretariat
IOTC-2014-WPB12-DATA07	Catch and Effort - Longline	IOTC Secretariat
IOTC-2014-WPB12-DATA08	Catch and Effort - vessels using pole and lines or purse seines	IOTC Secretariat
IOTC-2014-WPB12-DATA09	Catch and Effort - Coastal	IOTC Secretariat
IOTC-2014-WPB12-DATA10	Catch and Effort - all vessels	IOTC Secretariat
IOTC-2014-WPB12-DATA11	Catch and Effort - reference	IOTC Secretariat
IOTC-2014-WPB12-DATA12 Rev_2	Data for the assessment of Indian Ocean swordfish stock	IOTC Secretariat
IOTC-2014-WPB12-DATA13 Rev_1	Size Frequency - All Billfish species	IOTC Secretariat
IOTC-2014-WPB12-DATA14 Rev_1	DATA- Billfish Equations	IOTC Secretariat
IOTC-2014-WPB12-DATA15	Size frequency - reference	IOTC Secretariat
IOTC-2014-WPTT16-07 Rev_1	Review of the statistical data and fishery trends for tropical tunas	IOTC Secretariat
IOTC-2014-WPTT16-DATA01	Tropical tuna datasets available	IOTC Secretariat
IOTC-2014-WPTT16-DATA02	Maldives standardized pole and line CPUE series 2004–2012	IOTC Secretariat & Maldives
IOTC-2014-WPTT16-DATA03	Skipjack tuna (SKJ) data for Stock Assessment	IOTC Secretariat
IOTC-2014-WPTT16-DATA04	Nominal Catches per Fleet, Year, Gear, IOTC Area and species	IOTC Secretariat
IOTC-2014-WPTT16-DATA05	Catch and Effort - Longline	IOTC Secretariat
IOTC-2014-WPTT16-DATA06	Catch and Effort - vessels using pole and lines or purse seines	IOTC Secretariat
IOTC-2014-WPTT16-DATA07	Catch and Effort - Coastal	IOTC Secretariat
IOTC-2014-WPTT16-DATA08	Catch and Effort - all vessels	IOTC Secretariat
IOTC-2014-WPTT16-DATA09	Catch and Effort - reference	IOTC Secretariat
IOTC-2014-WPTT16-DATA10	Size Frequency - Tropical tuna species	IOTC Secretariat
IOTC-2014-WPTT16-DATA11	Size frequency - reference	IOTC Secretariat
IOTC-2014-WPTT16-DATA12	Catch-at-size - tropical tuna species	IOTC Secretariat
IOTC-2014-WPTT16-DATA13	Data - Catalogue	IOTC Secretariat
IOTC-2014-WPTT16-DATA14	Bigeye tuna longline standardized CPUE series: Rep. of Korea	Rep. of Korea
IOTC-2014-WPTT16-DATA15	Yellowfin tuna longline standardized CPUE series: Rep. of Korea	Rep. of Korea
IOTC-2014-CODAWS01-R[E]	Report of the Regional Workshop to Support Compliance with IOTC Requirements for the Collection and Reporting of Fisheries Data to the IOTC	IOTC Secretariat
Restricted Dissemination Indonesia	Collection of Data and Processing Methodologies for Artisanal Fisheries in the Provinces of Bali and East Java, Indonesia: Issues and Recommendations	IOTC Secretariat (Consultant)
Restricted Dissemination Indonesia	Collection of Data and Processing Methodologies for Artisanal Fisheries in the Provinces of North and West Sumatra, Indonesia: Issues and Recommendations	IOTC Secretariat (Consultant)
Restricted Dissemination Indonesia	Collection of Data and Processing Methodologies for the Indonesian Longline Fishery in the Indian Ocean Region: Issues and Recommendations	IOTC Secretariat (Consultant)
Restricted Dissemination Malaysia	Back to Office Report: IOTC-OFCF data mining mission of neritic tuna in Malaysia	IOTC-OFCF Project

Reference	*Name*	*Authorship*
IOTC-2014-OFCFWS01 Restricted Dissemination Indonesia	Indian Ocean Tuna Fisheries of Indonesia North and West Sumatra Data Collection Workshop: Review of Issues and Considerations	IOTC-OFCF Project & DGCF Indonesia
IOTC-2014-OFCFWS02 (In Prep.) Restricted Dissemination Indonesia	Indian Ocean Tuna Fisheries of Indonesia Bali and Jawa Timur Data Collection Workshop: Review of Issues and Considerations	IOTC-OFCF Project & DGCF Indonesia
Restricted Dissemination Indonesia	Implementation of the Collection of Data from Tuna Fisheries in the Provinces of West Sumatra and North Sumatra, Indonesia	IOTC Secretariat (Consultant)
Restricted Dissemination Indonesia	Protocols for the Collection of Data from Tuna Fisheries in the Provinces of West Sumatra and North Sumatra, Indonesia	IOTC Secretariat (Consultant)
Restricted Dissemination Indonesia	Progress Report on the Implementation of the Project "Collection of Data from Tuna Fisheries in the Provinces of West Sumatra and North Sumatra, Indonesia". (August, September, October)	IOTC Secretariat (Consultant)
Restricted Dissemination Indonesia	Database PELAGOS Indonesia: Users' Reference (in progress)	IOTC Secretariat
Restricted Dissemination Madagascar	Renforcement des systèmes statistiques de la pêche maritime à Madagascar : Projet pilote pour le développement d'un Système d'échantillonnage des captures	IOTC Secretariat & COI-SmartFish (Consultants)
Restricted Dissemination Madagascar	Manuel d'utilisation de la Base de données BANAPT Pour ADMINISTRATEUR (MPRH) (Pêche Industrielle Nationale, Pêche Artisanale Nationale et Pêche Traditionnelle Nationale) Madagascar	IOTC Secretariat & COI-SmartFish (Consultants)
Restricted Dissemination Madagascar	Manuel simplifié pour le test de la Base de données BANAPT (Pêche Industrielle Nationale, Pêche Artisanale Nationale et Pêche Traditionnelle Nationale) Madagascar	IOTC Secretariat & COI-SmartFish (Consultants)
Restricted Dissemination Madagascar	PROJET: FED/2009/021-330. Mise en œuvre d'une stratégie régionale de la pêche pour la région AOA-OI (IRFS). Intitulé : Renforcement des systèmes statistiques de la pêche maritime à Madagascar. Madagascar, Rapport : R4. Rapport final de synthèse.	IOTC Secretariat & COI-SmartFish (Consultants)
Restricted Dissemination Sri Lanka	BOBLME (2014) BOBLME-IOTC joint mission to assess progress concerning support to MFARD data collection and processing systems for IOTC species and sharks 22-24 January 2014, Colombo, Sri Lanka. BOBLME-2014-Project-01	IOTC Secretariat & BOBLME
Restricted Dissemination Thailand	Back to Office Report: IOTC-OFCF data mining mission of neritic tuna in Thailand	IOTC-OFCF Project