SCIENTIFIC COMMITTEE
NINETEENTH REGULAR SESSION

Koror, Palau
16 - 24 August 2023

ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

WCPFC-SC19-AR/CCM-09 (Rev.01)

INDONESIA

INDONESIAN FISHERIES
IN WCPFC CONVENTION AREA
2022

SCIENTIFIC DATA TO BE PROVIDED TO THE COMMISSION

MINISTRY OF MARINE AFFAIRS AND FISHERIES (MMAF)

NATIONAL RESEARCH AND INNOVATION AGENCY

THE REPUBLIC OF INDONESIA

2023

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

INDONESIA

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2023	[YES]
If no, please indicate the reason(s) and intended actions:	

A. SUMMARY

The Indonesia's tuna annual catch estimate workshop (the 14th IT-ACES) for FMAs 713,714, 715, 716 and 717 was conducted in the 29-31 May 2023 in Bogor Indonesia. The workshop (WS) was attended by MMAF, BRIN, fishing association, fishing industry, and relevant NGOs, WPEA-ITM manager and SPC expert. The catch estimates for year 2022 were estimated by DGCF, it was discussed and agreed during the WS and further process in the national data validation in 20-23 June 2023, the catch estimates are as follow: skipjack – 263.438 t; yellowfin –221.818 t ; bigeye – 28.108 t and albacore – 84 t, with total catch was 513.448 t.

B. BACKGROUND

Indonesia is an archipelagic nation located between the continents of Asia and Australia surrounded by two oceans, Pacific Ocean in the northern part and Indian Ocean in southern part. It consists of 17,508 islands and coast line of approximately 81,000 km^2. Totally, Indonesia has 5.8 million km^2 of marine waters consisting of 3.1 million km^2 of territorial waters (<12 miles) and 2.7 million km^2 of EEZ (12-200 miles). Geographical situation of marine fisheries areas provide interaction with the convention area of WCPFC at Sulawesi Sea as well as Indonesia EEZ in Pacific Ocean where presence of highly migratory species is obvious.

Internationally, fisheries resources identified as highly migratory resources should follow several international and regional measures or guidelines, such as UNCLOS 1982, FAO-Compliance Agreement1993, UN Fish Stock Agreement 1995 and FAO-Code of Conduct for Responsible Fisheries (CCRF). Indonesia has ratified UNIA 1995 through Act. Number 21year 2009. The objective of this ratification is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the UNCLOS 1982.

Indonesian Law Number 31/2004 which amended by law Number 45/2009 of Fisheries in Article 5 (2) stipulated that fishery management outside the Fishery Management Zones of the Republic of Indonesia shall be carried out inconformity with the laws and regulations, prerequisites, and/or generally accepted international standards. It is conducted to achieve the optimum and sustainable benefits while ensuring sustainable fishery resources (Article 6(1)). Furthermore, Article 10 stipulated that the Government shall participate actively in the membership of anybody/institution/ organization at the regional or international levels with respect to the cooperation for regional and international fishery management.

Indonesia since late 2013 becomes a member of WCPFC with an outlook to improve international relations and help secure small-scale fisher livelihood. This report is provided as part of obligation as a member of WCPFC.

C. ANNUAL FISHERIES INFORMATION

The Annual Tuna Fisheries Catch Estimates Review Workshops (ITFACE-14) was conducted on 29-31 May 2023 in Bogor Indonesia. The Catches for 2022 were estimated using DGCF catch data with the comparison to other sources of data that gathered from port sampling activities (WPEA, MDPI, AP2HI, YII, YKAN, FIP-PS and RIMF), logbook, observer and fishing ports information center (PIPP). A national catch validation was conducted after the ITFACE in 20-23 of June 2023 to further validated some of unresolved estimate during the ITFACE-14 in particular for Hand Line and Troll line Catch.

1. NOMINAL CATCHES IN FISHERIES MANAGEMENT AREA

Indonesia total tuna catch for all gears in Area FAO within WCPFC Statistical Area was estimated as below:

Table 1. Total tuna catch (Skipjack, Yellowfin, Bigeye) for all gear within WCPFC statistical area estimated for 2010-2022 (this table includes albacore catch and revises of the table 1 on the previous AR Part 1)

ALL GEAR (WCPFC STATISTICAL AREA)								
Year	**Estimated Tuna Catch (metric tonnes)**							
	Skipjack	%	Yellowfin	%	Bigeye	%	Albacore	Total
2010	273.637	76%	73.846	21%	10.771	3%		358.254
2011	270.101	68%	114.442	29%	12.901	3%		397.444
2012	272.052	61%	151.789	34%	19.476	4%		443.317
2013	351.901	67%	146.646	28%	20.446	4%		518.993
2014	322.840	67%	136.210	28%	23.868	5%		482.918
2015	262.927	61%	146.196	34%	22.953	5%		432.076
2016	336.455	64%	160.092	31%	28.344	5%	347	525.238
2017	332.628	69%	134.290	28%	12.095	3%		479.013
2018	291.442	55%	215.460	41%	19.573	4%	304	526.778
2019	296.743	55%	219.178	41%	19.163	4%	21	535.104
2020	258.169	50%	233.451	45%	22.899	4%	168	514.687
2021	272.193	50%	252.049	46%	22.618	4%	87	546.947
2022	263.438	51%	221.818	43%	28.108	5%	84	513.448
AVG (2010-2022)	292.656	61%	169.651	35%	20.247	4%		482.632

Catch estimate for 2022 was agreed in the ITFACE-14 this year (2023) by BRIN, DGCF, PUSDATIN and relevants stakeholders from fishing association, fishing industry and non-governments organisation. The estimate of total nominal catches in Fisheries Management Area 716 (IEEZ Sulawesi Sea) and 717 (IEEZ Pacific Ocean) is provided in table 2.

Table 2. Total tuna catch (Skipjack, Yellowfin, Bigeye and albacore) for all gear within FMA 716 and 717 estimated for 2010-2022

ALL GEAR (FMAs 716 and 717)								
Year	**Estimated Tuna Catch (metric tonnes)**							
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Albacore**	**Total**
2010	52.833	61%	30.509	35%	2.709	3%		86.051
2011	51.077	56%	36.665	40%	3.612	4%		91.353
2012	95.725	68%	37.125	27%	7.136	5%		139.985
2013	94.304	77%	24.454	20%	4.083	3%		122.842
2014	74.678	61%	41.510	34%	5.803	5%		121.991
2015	82.018	55%	61.925	41%	6.413	4%		150.357
2016	97.416	61%	56.801	36%	4.830	3%		159.047
2017	82.247	73%	28.685	26%	1.146	1%		112.077
2018	76.432	60%	48.096	37%	3.818	3%		128.425
2019	33.566	49%	30.666	44%	4.742	7%		68.975
2020	54.184	59%	32.256	35%	5.208	6%		91.648
2021	60.602	60%	36.669	37%	2.994	3%		100.265
2022	56.804	57%	38.533	39%	3.777	4%	33	99.147
AVG (2010-2022)	70.145	62%	38.761	34%	4.329	4%		113.243

Table 3. Total tuna catch (Skipjack, Yellowfin, Bigeye) for all gear within FMA 713, 714, 715, 716, 717 and FAO area 71 estimated for 2022

2022*) estimates								
FMAs	**Skipjack**	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Albacore**	**Total Tuna**
FMAs 713,714,715	206.634	50%	183.285	44%	24.331	6%	51	414.301
FMAs 716, 717	56.804	57%	38.533	39%	3.777	4%	33	99.147
FAO Area 71	263.438	51%	221.818	43%	28.108	5%	84	513.448

The estimates of nominal catches by gears in Fisheries Management Area 716 (IEEZ Sulawesi Sea) and 717 (IEEZ Pacific Ocean) was provided in the following tables:

LONGLINE and PURSE SEINE

Table 4. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Longline within FMA 716, 717 and high seas estimated for 2010-2022

LONGLINE (FMAs 716 and 717)							
Year	Estimated Tuna Catch (metric tonnes)						
	Skipjack	%	Yellowfin	%	Bigeye	%	Total tuna
2010			14.041	92%	1.221	8%	15.262
2011			13.750	89%	1.699	11%	15.449
2012			11.656	76%	3.681	24%	15.337
2013			8.271	74%	2.860	26%	11.130
2014			13.060	78%	3.673	22%	16.733
2015			18.509	83%	3.701	17%	22.210
2016			5.632	100%	8	0%	5.640
2017	4	2%	178	91%	13	7%	195
2018	-	-	7.707	86%	1.255	14%	8.962
2019	495	7%	4.382	62%	2.191	31%	7.067
2020	1	1%	428	27%	1.130	73%	1.558
2021			683	35%	1.244	65%	1.926
2022	5	0%	1.131	43%	1.489	57%	2.625
Average (2010-2022)			7.648	75%	1.859	24%	9.546

Note: Albacore Catch from LL 716-717 in 2022 for 19 tonnes.

Notes on sources of data and methodology

1. Percentage of catch composition of 2014 and 2016 using the DGCF and WPEA species composition
2. Source data of fishing port (Bitung) from PIPP there were 5 LL < 30 GT operating in WPP 716, and data from SHTI 1 LL <30 GT
3. Source data of non-fishing port (Bitung) from Port Sampling there were 8 LL < 30 GT
4. Catch Composition for data 2021 (FP & non FP) using average catch from data source: WPEA, Logbook
5. Catch of 2022 is provisional data

Table 5. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Purse seine gear within FMA 716, 717 estimated for 2010-2022

PURSE SEINE (FMAs 716 and 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2010	5.525	87%	635	10%	191	3%	6.351
2011	9.815	83%	1.656	14%	355	3%	11.825
2012	25.164	75%	8.198	24%	235	1%	33.597
2013	62.726	96%	2.614	4%	0	0%	65.340
2014	36.085	83%	7.000	16%	289	1%	43.374
2015	25.205	73%	8.247	9%	1.153	1%	34.604
2016	40.262	66%	20.546	34%	509	1%	61.317
2017[a)]	46.741	66%	23.370	33%	708	1%	70.820
2018	15.650	71%	5.951	27%	441	2%	22.043
2019	27.072	74%	8.671	24%	680	2%	36.423
2020	24.887	66%	12.304	33%	566	2%	37.758
2021	29.430	75%	9.885	25%	178	0%	39.492
2022	30.534	81%	6.728	16%	644	3%	37.906
Average (2010-2022)	29.161	76%	8.908	22%	458	2%	38.527

Notes on sources of data and methodology

1. Percentage of catch composition of 2009 - 2013 using the P4KSI Species Composition data by gear.
2. Percentage of catch composition of 2016 using DGCF Species Composition data by gear.
3. Purse seine FMAs 713-715 based on adjustment figure
4. From data SIPEPI in 2016 : PSPK = 110 vessels, PSPB = 21 vessels (Total = 131 vessels)
5. From data SIPEPI in 2017 : PSPK = 90 vessels, PSPB = 29 vessels (Total = 119 vessels)
6. Catch Composition for data 2021 (FP & non FP) using average catch from data source (WPEA, observer and Logbook)
7. Catch of 2022 is provisional data

POLE and LINE

Table 6. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Pole and Line within FMA 716, 717 estimated for 2010-2022

POLE AND LINE (FMAs 716, 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2010	29.416	87%	3.381	10%	1.014	3%	33.812
2011	25.484	77%	6.725	20%	758	2%	32.968
2012	35.500	93%	1.277	3%	1.532	4%	38.309
2013	16.825	78%	4.284	20%	377	2%	21.486
2014	7.356	69%	3.316	31%	57	1%	10.729
2015	8.860	58%	2.280	15%	727	5%	11.868
2016	8.027	70%	3.165	28%	311	3%	11.502
2017[a)]	8.374	73%	2.983	26%	115	1%	11.471
2018	35.685	91%	3.137	8%	392	1%	39.215
2019	1.112	74%	388	26%	-	0%	1.500
2020	1.640	72%	579	26%	50	2%	2.268
2021	7.232	89%	813	10%	81	1%	8.126
2022	5.950	93%	427	7%	13	0%	6.390
Average (2010-2022)	14.728	83%	2.520	14%	452	3%	17.665

Notes on sources of data and methodology

1. Percentage of catch composition of 2009 - 2012 using the P4KSI Species Composition data by gear
2. Percentage of catch composition of 2016 using the CFR-WPEA species composition
3. Source data of fishing port (Bitung) for 2017 from PIPP there were 4 PL < 30 GT , 1 PL > 30 GT
4. Source data of non-fishing port for 2017 from Port Sampling there were 5 PL < 30 GT operating in 717 (Sorong)
5. Catch Composition for data 2021 (FP & non FP) using average catch from data source (WPEA)
6. Catch of 2022 is provisional data

HANDLINE

Table 7. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Handline (Large tuna) within FMA 716, 717 estimated for 2000-2022

HANDLINE (FMAs 716, 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2009			13.085	99,00%	132	1,00%	13.218
2010			8.500	98,00%	173	2,00%	8.674
2011			8.534	96,00%	356	4,00%	8.890
2012			3.359	92,10%	290	7,90%	3.648
2013			3.801	96,00%	158	4,00%	3.960
2014			15.173	97,00%	461	3,00%	15.634
2015	6.118	18.3%	26.817	80,30%	476	1,20%	33.411
2016	14.994	57%	11.039	42%	396	1,50%	26.430
2017[a)]	3.930	68%	1.636	28%	190	3%	5.756
2018	3.407	14.9%	19.022	83%	460	2%	22.935
2019	1.004	8%	11.301	90%	250	2%	12.556
2020	2.782	22%	9.450	75%	291	2%	12.523
2021	3.511	18.93%	14,778	79.67%	260	1.40%	18.550
2022	2.720	10,48%	22.608	87,12%	623	2,40%	25.951
Average 2009-2022	4.808	32%	11.024	73%	323	2%	15.153

Notes on sources of data and methodology

1. Percentage of catch composition of 2009 - 2012 using the P4KSI Species Composition data by gear.
2. Percentage of catch composition of 2013 and 2015 using the P4KSI species composition of FMAs 716 -717
3. Handline in this year (2015) was combination of surface handline, deep handline, Kite line, vertical line
4. in year 2016, HL is combined catch surface HL (skipjack, small YFT/BET) and Deep HL (Large YFT/BET)
5. Catch Composition for data 2021 (FP & non FP) using average catch from data source (MDPI, WPEA, Logbook)
6. Total tuna catch was estimated using 2021 data except for Biak Numfor using the previous year (2020 data), Need further clarification and ground check for Biak Numfor.
7. Catch of 2022 is provisional data.

TROLL LINE

Table 8. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Troll Line within FMA 716, 717 estimated for 2013-2022.

TROLL LINE (FMAs 716, 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2013	5.290	65%	2.447	30%	400	5%	8.138
2014	19.877	94%	915	4%	435	2%	21.228
2015	36.076	89%	1.788	4%	299	1%	38.163
2016	28.160	62%	13.929	31%	3.533	8%	45.622
2017	296	60%	183	37%	15	3%	494
2018	5.137	83%	745	12%	309	5%	6.191
2019	1.405	29%	3.497	71%	11	0%	4.913
2020	6.121	44%	5.989	43%	1.684	12%	13.794
2021	5,767	43%	7,372	54%	392	3%	13,532
2022	9.884	62%	5.248	33%	860	5%	15.992
Average (2013-2022)	11.225	73%	3.475	22%	794	5%	15.455

Notes on sources of data and methodology

1. Percentage of catch composition of 2013 using PPS Kendari species composition
2. Percentage of catch composition of 2014-2015 using DGCF species composition
3. Percentage of catch composition of 2020 using Pusdatin species composition
4. Catch Composition for data 2021 (FP & non FP) using logbook data source
5. Catch of 2022 is provisional data

GILLNET

Table 9. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Gillnet within FMA 716, 717 estimated for 2013 – 2022.

GILL NET (FMAs 716 and 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2013	2.312	83%	460	17%	2	0,1%	2.775
2014	3.351	85%	584	15%	6	0,2%	3.941
2015	1.046	20%	297	6%	2	0,0%	1.344
2016	1.522	92%	136	8%	2	0,1%	1.660
2017[a)]	1.521	97%	40	3%	-	0,0%	1.561
2018	1.950	87%	303	13%	3	0,0%	2.256
2019	935	82%	199	18%	-	0,0%	1.134
2020	15.321	85%	2.047	11%	759	4,0%	18.127
2021	10.737	76%	2,798	20%	675	5,0%	14.210
2022	6.181	79%	1644	21%	-	-	7.825
Average 2013-2022	4.488	82%	571	10%	207	3,8%	5.483

Notes on sources of data and methodology

1. Percentage of catch composition of 2013 and 2016 using the DGCF species composition
2. Percentage of catch composition of 2020 using Pusdatin species composition
3. Percentage of catch composition of 2021 using Sub Div Data DGCF species composition
4. Catch of 2022 is provisional data

OTHERS (Exclude Troll, small-fish HI, gillnet, etc.)

Table 10. Total tuna catch (Skipjack, Yellowfin, Bigeye) for Other gear within FMA 716, 717 estimated for 2010 – 2022

OTHERS (FMAs 716 and 717)							
Year	**Estimated Tuna Catch (metric tonnes)**						
	Skipjack	**%**	**Yellowfin**	**%**	**Bigeye**	**%**	**Total tuna**
2010	17.891	82%	3.951	18%	110	1%	21.953
2011	15.778	71%	6.000	27%	444	2%	22.222
2012	35.061	71%	12.635	26%	1.398	3%	49.094
2013	7.151	71%	2.577	26%	285	3%	10.013
2014	8.010	77%	1.462	14%	881	9%	10.352
2015	4.714	40%	3.988	34%	55	1%	8.757
2016	4.451	65%	2.345	34%	71	1%	6.876
2017	21.382	98%	295	1%	104	0%	21.780
2018	14.602	54%	11.230	42%	959	4%	26.824
2019	1.541	29%	2.228	41%	1.611	30%	5.381
2020	3.433	61%	1.459	26%	728	13%	5.620
2021	3.925	89%	340	8%	164	4%	4.429
2022	1.531	63%	747	31%	147	6%	2.425
Average 2010-2022	10.728	71%	3.789	25%	535	4%	15.056

Notes on sources of data and methodology

1. Percentage of catch composition of 2009 and 2010 using P4KSI sampling in Kendari of 2010
2. Catch of other gears for 2013 and 2014 excluded troll line, gill net and small-fish handline
3. Percentage of catch composition of 2021 using Sub Data DGCF species composition
4. Catch of 2022 is provisional data

SHARK CATCH ESTIMATE (Landing, Observer dan Logbook)

Table 11a. Landed-Catch estimate of Sharks (metric ton) related to tuna fishery in FMAs 716 and 717,

Year	*Centrophoridae, Squalidae* **Dogfishes (DGZ) + Others**	*Carcharhinus longimanus* **Oceanic Whitetip (OCS)**	*Carcharhinus falciformis* **Silky shark (FAL)**	*Galeocerdo cuvier* **Tiger sharks (TIG)**	*Sphyrna spp* **Hammerheads sharks (SPN)**	*Prioance glauca* **Blue sharks (BSH)**	*Alopias spp* **Thresher sharks (THR)**	*Isurus spp* **Mako sharks (MAK)**
2016	365	0	92	0	5	0	59	174
2017	52*	1	1*	0	2	0	6	2
2018	31	0	24	0	1	0	0	7
2019	0	0	55*	0	0	0	?*	1
2020	9	0	0	0	0	0	0	0.03
2021	20	0	1	0	0	0	0	1
2022	47	0	0	0	0	0	0	4

Notes:

1. First time in 2016 for estimating total catch of sharks from national fisheries data statistics (landing data)-DGCF
2. Estimated Catch of Sharks in 2017 -2020 from Pusdatin (CSDI)-MMAF
3. *) subject to be further clarified, source of data from surveillance unit of MMAF and CFR
4. All catches of sharks were fully utilized by the fishers as source for livelihood.

Table 11b. ERS (Ecological Related Species) for sharks interaction of tuna fisheries recorded by enumerators Kendari Ports in the 714 in 2022.

Gear Type	FMA	ERS Species	Species Code	QTY	Catch	Post Catch	Handling
Hand Line	714	*Carcharhinus limbatus*	CCL	2	1 dead 1 life	life	1 whole retained 1 release life
		Carcharhinus falsciformis	FAL	1	dead	dead	1 whole retained
		Carcharhinus limbatus	CCL	3	3 dead	dead	3 whole retained
		Carcharhinus limbatus	CCL	5	4 dead 1 life	4 dead 1 life	4 whole retained 1 release life
		Carcharhinus limbatus	CCL	2	dead	dead	2 whole retained
		Carcharhinus Limbatus	CCL	2	1 life 1 dead	1 dead	1 release life 1 retained
		Carcharhinus spp		2	life	life	2 release life

2. THE NUMBER OF FISHING VESSELS OPERATING IN IEEZ SULAWESI SEA AND IEEZ PACIFIC OCEAN, 2017-2022

The number of Purse Seine (PS) operating in the FMA 716 and 717 in 2022 were 124 vessels. Since 2017 to 2021 the Size of purse seiner operated in these areas were lower than 201 GT (30-200 GT) and additional one Purse seiner with GT 220 in 2022 (Table 12).

Table 12. Number of fishing vessel operating in EEZ FMA 716 and 717, by size and gear licensed by central Government

Gear	Size Class (GT)	2017	2018	2019	2020	2021	2022
Longline (in EEZ Longline (FMA 716 and 717)	0-50	0	0	0	1	3	5
	51-200	1	2	1	3	2	12
Pole and Line (in EEZ FMA 716 and 717)	0-50	27	27	1	2	1	1
	51-150	19	18	3	2	1	1
Purse seine (in EEZ FMA 716 and 717)	0-200 (Total)	103	104	115*	120*	99*	124*
	30-60			81	81	66	91
	61-100			8	12	15	15
	101-150			19	18	11	9
	151-200			7	9	7	8
	201-500						1**
Handlines (in EEZ FMA 716 and 717)	0-10	0	0	0	0	0	0
	11-50	9	9	9	4	4	14
	51-200	0	0	0	3	3	5
Troll line (in EEZ FMA 716 and 717)	0-10	0	0	0	0	0	0
	11-50	0	0	0	0	0	0
	51-200	0	0	0	0	0	0
Gillnet (in EEZ FMA 716 and 717)	0-10	0	0	0	0	0	0
	11-50	2	2	1	0	0	0
Others, excludes troll line, handlines, gillnets (in EEZ FMA 716 and 717)	0-10	0	0	0	0	0	0
	11-50	0	1	0	0	0	0
	51-200	1	0	0	0	0	3
TOTAL		**162**	**163**	**+130**	**132**	**103**	**165**

Note : *) the sum of number of purse seine fishing vessel from size of 30 GT to 200 GT.
+) revised number for 2019
** purse seine fishing vessel with size of 220 GT

3. THE INDONESIAN FISHING FLEET STRUCTURE REGISTERED IN WCPFC

Table 13. Number of Indonesia fishing fleet by gear and type registered in WCPFC (2017-2022)

NO	FLEET	2017	2018	2019	2020	2021	2022
1	Tuna long liner and long liner	0	0	0	0	0	0
2	Purse Seiner	6	8	17	9	11	11
3	Pole and Liner	9	13	0	13	2	1
4	Gillnetter	0	0	0	0	0	0
5	Handliner	0	0	2	0	0	0
6	Support Vessel	0	0	0	0	0	0
7	Non Specified vessel	0	0	0	0	0	0
8	Carrier vessel	0	0	0	0	0	0
	Total	15	21	19	22	13	12

Note: The significant decrease of vessel registered in WCPFC in 2016 due to the national policy on the moratorium on the fishing vessels that were constructed overseas.

4. DEVELOPMENTS/TRENDS IN THE FISHERY (CHANGES IN FISHING PATTERNS, FLEET OPERATIONS, TARGET SPECIES, LEVEL OF TRANSHIPMENT, ETC.)

Regulations related to major changes of Indonesia tuna fisheries are Minister Regulation No. 56/2014 concerning on moratorium of fishing license for vessels built outside Indonesia (foreign built vessel) and Minister Regulation No. 57/2014 on banning of transhipment at sea. Implementation of these regulations take changes such as: Issue moratorium, issue changing fishing activities (HL, PL ,LL, PS)

a. No transhipment at sea since January 2015 to end of 2022
b. Vessels built by foreign are tight up at port or back to the origin state or other state.
c. No fishing operation on high seas and foreign EEZ, fishing activities were conducted in archipelagic and territorial waters.
d. Increase number of small-scale fishing boat that mostly operated in archipelagic and territorial waters, at the same time increase catch rate of these vessel

In order to monitor the activities of fishing vessel, government of Indonesia (GOI) has introduced to the fishers and fishing company;

a. Re-registry and re-measure of all fishing boats (2017,2018,2019,2020,2021)
b. Updating the R-VIA (Record of Vessel Authorized to fish in Indonesia waters) into DIVA TUNA (Database of Indonesian Vessel Authorised to fish for Tuna) as online and public verification tool.
c. Increase inspection and surveillance in results to date no less than 621 vessels were mostly be sunk due to IUU fishing activities both national and foreign vessel boats since 2015.

Recently there is a new policy related to capture fisheries at national level (*Government Regulation No 11/2023*) Indonesia has launched a new policy in fisheries management, namely Penangkapan Ikan Terukur-PIT (*Fisheries Based on Quotas and Fishing Zones*) policy. The new policy is aimed at conserving fish resources and the environment as well as equitable distribution of national economic growth. The new policy on fisheries management in Indonesia is carried out by imposing

fishing quotas through *Penangkapan Ikan Terukur* policy that uses catch control (*output control*). The number of catch quotas is determined based on total allowable catch derived from the results of the study and recommendations from the National Commission of Fish Stock Assessment that stipulated by the Minister of Marine Affairs and Fisheries. The quotas and catch limit of tuna, skipjack and tuna like species taking in the Indonesia's water, will be based on advice from National Commission of Fish Stock Assessment that incorporated to the outcome of Stock assessment and quotas or catch limit agreed at the Regional Fisheries Management Organization (RFMO) i,e. IOTC,WCPFC and CCSBT. Minister of Marine Affairs and Fisheries will issue technical regulations to implement this new policy such as regulations on limited fishing areas and their utilization, procedures for calculating fishing quotas, procedures for distribution of industrial quotas, local fishers quotas, and non-commercial fishing quotas, utilization of fishing quotas, and designated landing ports.

5. SPECIFIC INFORMATION ABOUT IMPLEMENTATION OF CMM (SEABIRD, CETACEAN, AND WHITE-TIP SHARK)

a. Seabird : According to the Minister regulation No 12/2012 concerning on fishing in highs seas, that Indonesian Longline fishing vessel operating in high seas should utilized tori line. Recently, Indonesia has developed national plan of action (NPOA) of seabird in collaboration with seabird life South Africa and able to join several workshops related to seabird conservation both in Indonesia and Vietnam in 2016 and April 2017. During the workshops it is noted that very small number of seabird has interact with vessel that operated in the Indian Ocean. In 2022 there were reported zero interaction of Indonesia's Longline with seabird fishing in the area of WCFPC convention i.e. FMA 716 and FMA 717.

b. Cetacean: According to Indonesian government Act No. 7 year 1999 on protecting of cetaceans and stipulating the Minister Regulation No. 12 /20 12 on Fishing Business in High Seas, Minister Regulation No. 30 year 2012 on Fishing Business in Fisheries Management Area of Republic of Indonesia, and Minister Regulation No. 26 year 2013 on Amended of Minister Regulation No. 30 year 2012 article 73 on Fishing Business in Fisheries Management Area of Republic of Indonesian cetaceans are protected. Log book data reported in 2022 (as submitted to Secretariat) there were no (zero) interaction of cetaceans with Indonesia's purse seine (PS)

c. White-tip Shark: According to Minister regulation No 12/2012, No 59/2014 as amended by minister regulation No 34/2015 it is regulated that landing of oceanic whitetip shark and hammer head sharks are prohibited, to date such regulation still enforce.

d. Sea Turtle: There was zero interaction Sea Turtle with Indonesia purse-seine fishing vessels based on 2022 log book, surveillance and national observer report.

6. DISPOSAL OF CATCH (FRESH/FROZEN/OTHER)/MARKET DESTINATION (EXPORT)

a. Disposal of Catch: There was no disposal of catch in 2022.

b. Market Destination (Export)

The export data of tuna has been divided by HS number. The export data included catches from Indian Ocean and Pacific Ocean.

Indonesia has issued detailed breakdown of tuna exports into 16 HS code, as the following:

a. YFT (Fresh or Chilled);
b. Skipjack (Fresh or Chilled);
c. Bigeye (Fresh or Chilled);
d. Albacore (Fresh or Chilled);
e. Other tunas (Fresh or Chilled);
f. YFT (Frozen);
g. Skipjack (Frozen);
h. Bigeye (Frozen);
i. SBT (Frozen);
j. Other tunas (Frozen);
k. Skipjack and Frozen tuna fillet;
l. Whole or sliced tuna in the air tied container;
m. Whole or sliced Skipjack or bonito in the air tied container.

Overall tuna, neritic tuna and tuna like products were exported to 72 neighbours countries in the year of 2022 was estimated for 195.000 tons in various types of products.

7. SUMMARY OF OBSERVER AND PORT SAMPLING PROGRAMMES (SCIENTIFIC DATA)

Ministry of Marine Affairs and Fisheries has issued Ministerial Regulation Number 01 Year 2013 concerning national observer program. In 2022 there were 287 trips been observed with total 2083 days at sea (Table 15). Port sampling activities are continuing under WPEA-ITM in Bitung (12 enumerators) up to June 2022 and has to be temporarily postponed due to reorganisation and transition of MMAF to BRIN until mid of June 2023. The 12 enumerators, database person, coordinator was recruited and trained in the 12-14 June 2023 and since then the port sampling of WPEA-ITM in Bitung is continuing from 17th June 2023. Some port sampling program are still continuing by non-government organisation i.e. MDPI, AP2HI,YII, and YKAN. The national data collection program for recording the catch were conducted in the fishing ports and non-fishing ports in each district/regency under PIPP program of DGCF-MMAF . In addition, data collections through observer also conducted by DGCF and non-government organizations (NGOs) linked to DGCF. Update on the national observer in year 2022 is provided in the table 15.

Table 15. Indonesia national observer program (DGCF) in 2021-2022 (LL : Longline, HL: handline, PL; Pole and line, PS: Purse seine).

Gear Type	FMA	2021		2022	
		No. trip	No. Days At Sea	No. Trip	No. Days At Sea
HL	714	2	32	-	-
	715	2	5	-	-
PL	713	-	-	2	8
	714	9	333	4	69
	715	9	244	5	36
	716	1	10	-	-
PS	713	1	20	-	-
	714	15	649	278	1970
	715	8	278	-	-
	716	4	103	-	-
	717	1	75	-	-
Total		52	1749	287	2083

8. REPORTING OF EFFORT (Longline, Purse seine, Hand line and Pole and line)

Indonesia has launched interim harvest strategy framework for skipjack, yellowfin and bigeye in its Archipelagic waters at the 3rd Bali Tuna Conference on the 31 May 2018. In Addition, Indonesia has updated and launched the harvest strategy of tropical tuna fisheries in the Archipelagic waters on the 9th June 2023. Recent nominal CPUE of the skipjack has been estimated (using WPEA data) for 1.2 tons/day and effort for all pole and line operated in FMAs 713 to 715 to be 64.581 days with 177 days/year/vessel. Log book data on 2017 - 2022 for PS, LL and PL in particular for FMA 716 and 717 have been submitted to the WCPFC that might be used to estimate effort for those fishery. During annual catch estimate workshop and recent WPEA-ITM SAW Workshop , the need to have detail information of total effort of PS, HL & PL operated in 716 & 717 derived from logbook data is remain outstanding. It is then required a further discussion in a dedicated catch and effort workshop with assistance from SPC.

9. STATISTICAL DATA COLLECTION SYSTEMS IN USE ORGANIZATION AND JOB DUTIES

A. GENERAL PROCEDURE OF ONE DATA POLICY

1. Since 2017, based on One Data Policy within the Ministry of Marine and fisheries Affairs (MMAF), data collection has been conducted by Centre of Data Statistic and Information (CDSI). CDSI has responsible for designing survey method, supervision of the survey, tabulation/compilation, analyzing, and publishing of National Capture Fisheries Statistics. Since 2021to date the national capture fisheries statistic back lead by DGCF and report to CDSI.
2. Data validation process is conducted with hierarchical scheme from district, provincial to center government (MMAF).

3. Directorate General (DG) such as DG of Capture Fisheries, DG of Aquaculture, DG of Spatial and Zoning will conduct validation for catches production, Aquaculture production and Salt production respectively, all data from these DG as well as From district and Provinces will be validated by CDSI.
4. Data collection conduct at fishing port is derived from fishing logbook, landing data information, initial sheet for catch certification, vessel Inspection Report and observer program.

B. RESEARCH ACTIVITIES (TUNAS, OTHER SPECIES, SPECIES OF SPECIAL INTEREST, OCEANOGRAPHIC INFLUENCES)

1. WPEA: Tuna data collection based on ports sampling on selected sampling is continuing under WPEA-ITM project. The Project in the 2021 covers Bitung fishing ports to continue record on catch composition by species by gear as well as its size distribution.
2. A collaborative research project between CFR-MMAF (Indonesia) and ACIAR – CSIRO (Australia) for period 2018-2021 that extended to March 2024 is "Harvest strategies for Indonesian tropical tuna fisheries to increase sustainable benefits", among other objectives this activity will determine productivity of tropical tuna in Indonesia and collect socio-economic information for the different sectors of the tuna fisheries, as well as improve capacity of operational fisheries management and research..
3. Continuing data collection from port based program on small scale tuna fisheries through collaborative work with NGOs (i,e. MDPI, TNC, SFP, YKAN, YII) and fishing association (AP2HI) fisheries using E.BRPL platform , IFISH and trial on used of spot trace.
4. National fish stock Assessment conducted by Research Institute for Marine Fisheries (RIMF-MMAF). Data Collection with support from Indonesia's government under national stock assessment program has been conducted for FMA 713,716,717 including the tropical tuna for 2019 to 2021 . In 2022 a new institutional arrangement for National Research and Innovation Agency for Research Center for Fishery has been established and now in the transition process to continue the national stock assessment program.

I. FISHING GROUND (2022)

Based on interview with the skippers and having them point the position of fishing in one-degree-grid map, the fishing grounds can be presented in the following figures:

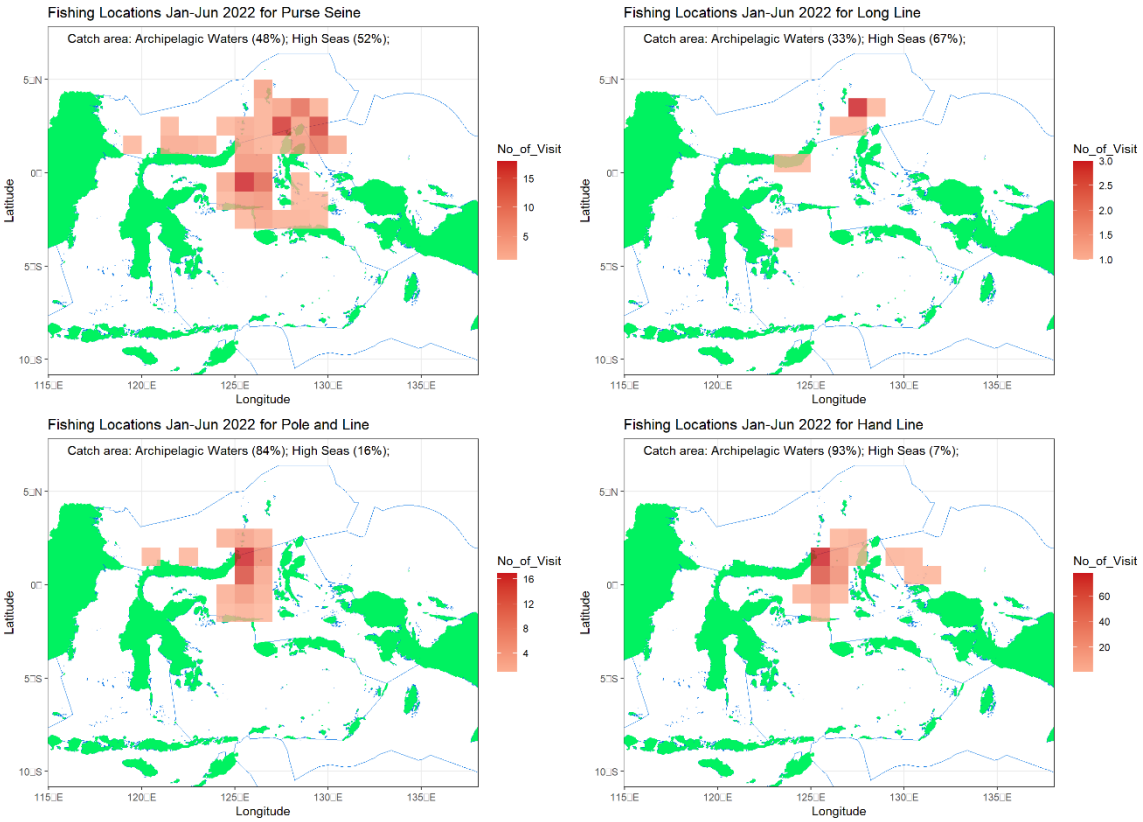


Figure 2. Fishing areas for Purse Seine, Pole and Line, Long Line and Hand Line vessels.

II. CATCH COMPOSITION 2022

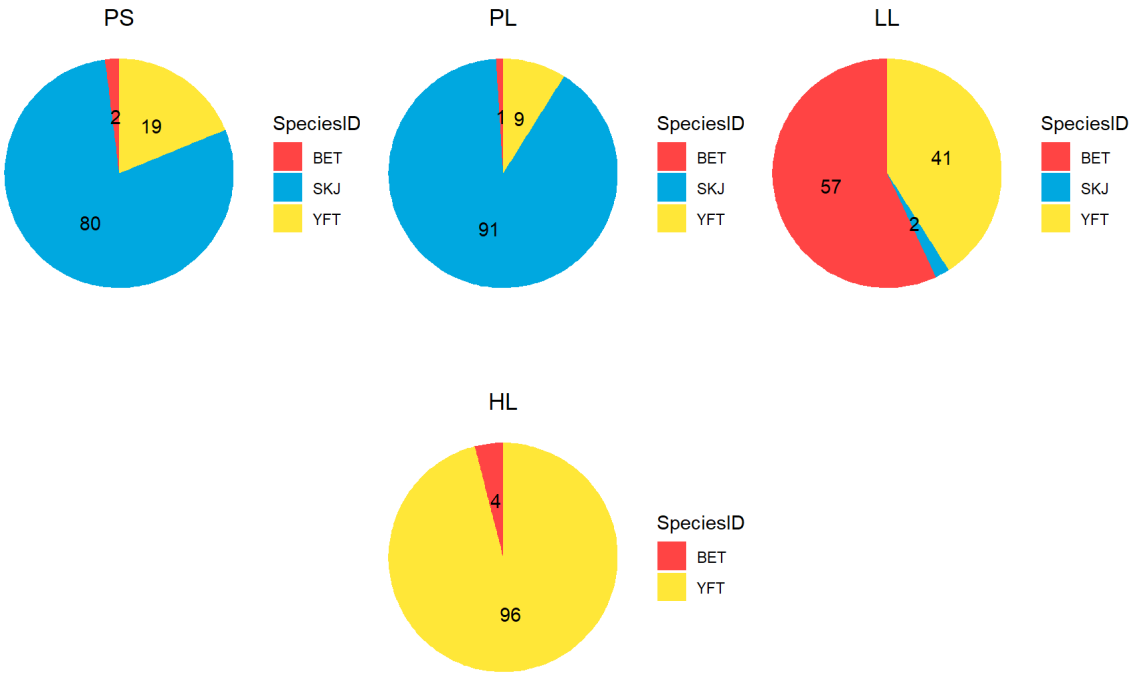


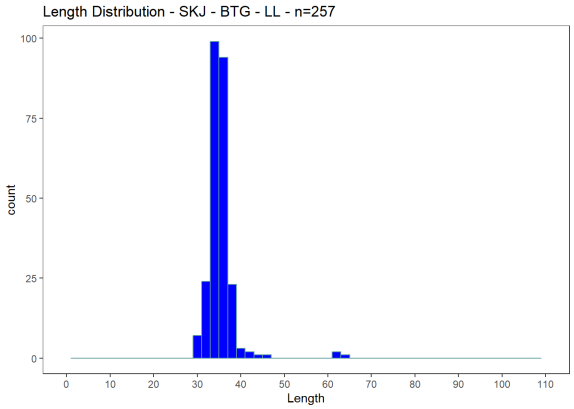
Figure 3. Catch composition of Purse Seine, Pole and Line, Long Line and Hand Line, based at Bitung, in 2022

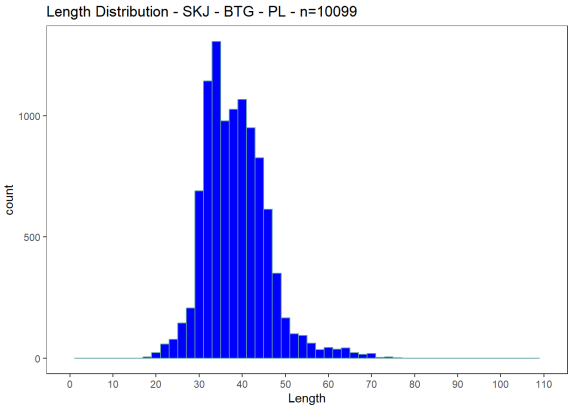
Port Sampling activity in Bitung in 2022 reports that catch composition by gear varied: Purse Seine caught mostly SKJ (80 %); Pole and Line caught mostly SKJ (91 %); Long Line caught mostly BET (57 %); Hand Line caught mostly YFT (96 %);

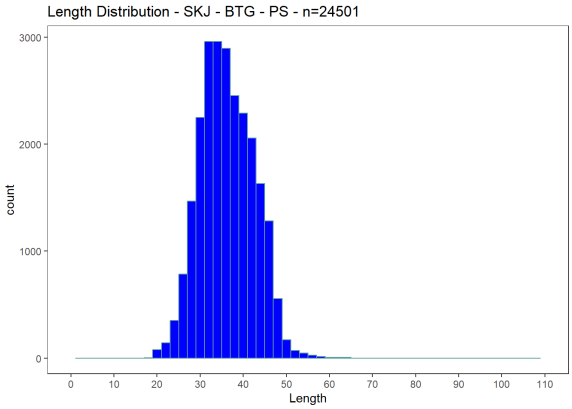
III. SIZE DISTIBUTION BASED ON PORT SAMPLING YEAR 2022.

A. Length Frequency Distribution

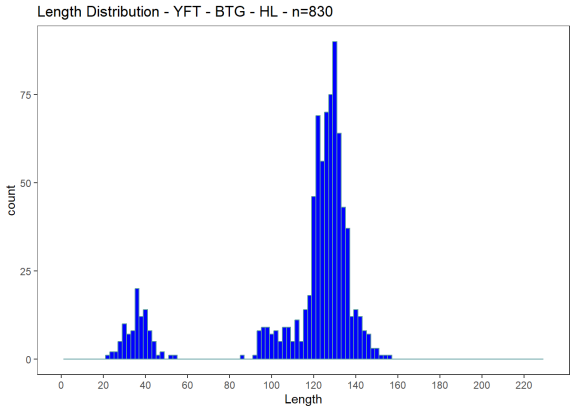
Skipjack (*Katsuwonus pelamis*)

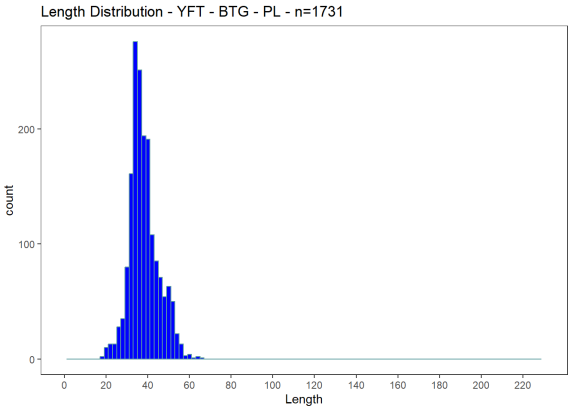


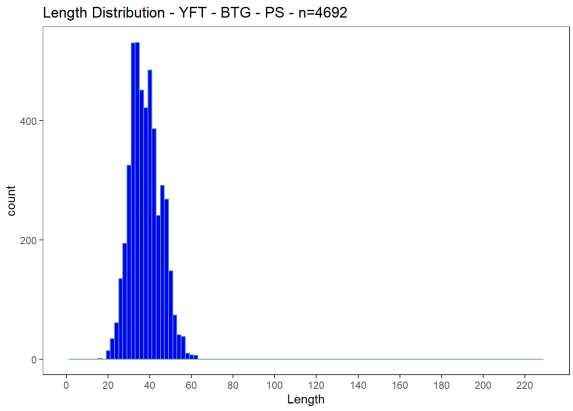




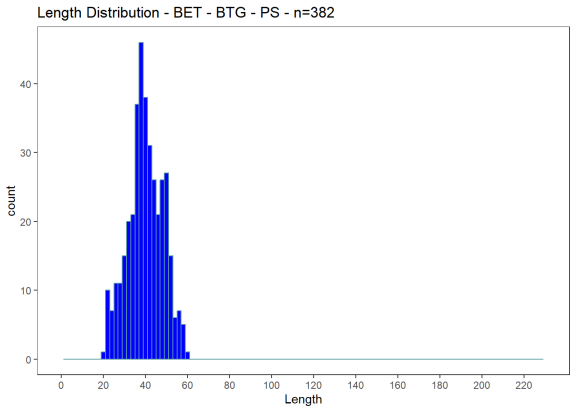
Yellowfin Tuna (*Thunnus albacares*)





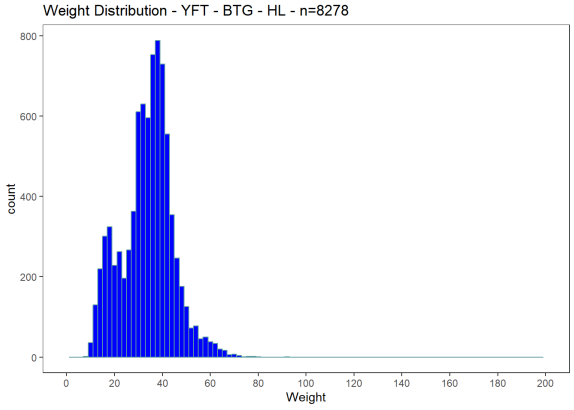


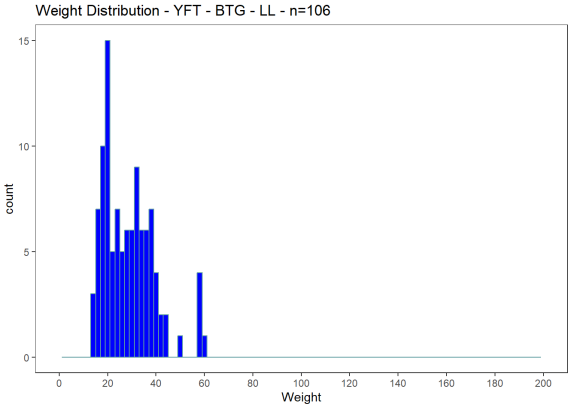
Bigeye Tuna (*Thunnus obesus*)



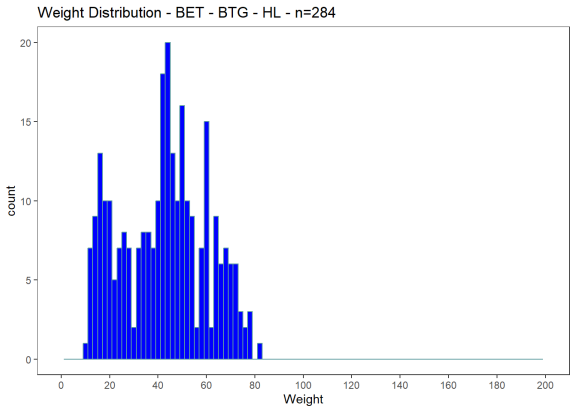
B. Weight Distribution

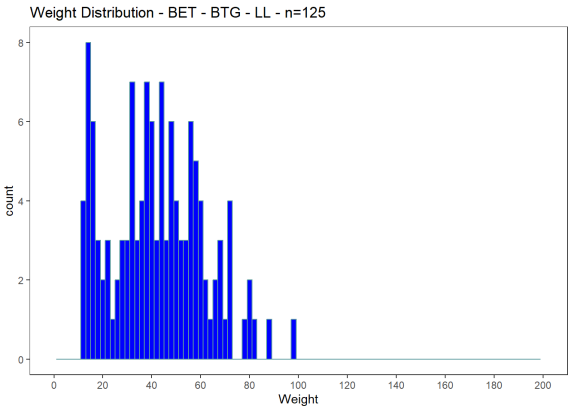
Yellowfin Tuna *(Thunnus albacares)*





Bigeye Tuna *(Thunnus obesus)*





ADDENDUM TO ANNUAL REPORT PART 1 (2023)
Specific information to be provided in Part 1 as required by CMMs[1]

CMM 2005-03 [North Pacific Albacore], Para 4	There are no catch of north albacore from (PS,LL, PL) gear that operated north of equator.
CMM 2006-04 [South West striped Marlin], Para 4	Not Applicable for Indonesia. No Indonesian fishing vessel operated South of 15 S
CMM 2009-03 [Swordfish], Para 8	Not Applicable for Indonesia → No Indonesia fishing vessels targeting swordfish South of 20^0S as well as north of 20^0S in WCPFC convention Area
CMM 2009-06 [Transshipment], Para 11 (ANNEX II)	**No transhipment in 2022**, all cacth shall landed directly to port. Indonesia has issued Minister Regulation No. 57/20 14 on banning of transhipment.
CMM 2010-07 [Sharks], Para 4	Catch of shark is provide in the table 10 a.
CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5	**No PS interaction with cetaceans** CCMs shall include in their Part 1 Annual Report any instances in which cetaceans have been encircled by the purse seine nets of their flagged vessels, reported under paragraph 2(b).
CMM 2011-04 [Oceanic whitetip sharks], Para 3	Provision Catch of shark is provide in the table 10 a
CMM 2012-04 [Whale sharks], Para 06	**No PS interaction with cetaceans**
CMM 2013-08 [Silky sharks], Para 3	Provision Catch of shark is provide in the table 10 a
Observer coverage (WCPFC 11 decision – para 484(b)	Indonesia has national observer program as inform in annual part 1. Table 14. **Not applicable** . In year 2022 there was no Indonesia vessel operated in high seas and on other countries EEZ.
CMM 2015-02 [South Pacific Albacore] Para 4	**Not applicable** for Indonesia. no Indonesian fishing vessel operated South of 20 S
CMM 2017-06 [Seabirds] Para 9	Zero interactions of seabird to Indonesia's Tuna fishing Vessel

[1] Reporting requirements requested by CMMs and decisions by the Commission, as of WCPFC15 (Dec 2018)

IV. CMM 2017-06: [Seabirds] Annex 2. Guidelines for reporting templates for Part 1 report

Indonesia has adopted CMM 2012-07/CMM 2015-03/CMM 2017-06 through Minister Regulation No. 12 year 2012 on Fishing in High Seas. In 2022, no interactions were reported by observer on board on 2022.

ACKNOWLEDGEMENTS

We acknowledge the support of all enumerators in Bitung, who spent effort and provide port sampling data under WPEA project, Enumerators from RIMF, Enumerators from MDPI,AP2HI,YII and YKAN. Thanks to WCPFC and SPC for their Assistance. Thanks to Centre of Data Statistic and Information (*Pusat Data Statistik dan Informasi)* for national capture fisheries data, Directorate Fish and Resource Management (DFRM) - Directorate General for Capture Fisheries (DGCF) for log book and national observer data.

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