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

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PAPUA NEW GUINEA



ANNUAL REPORT

To the

WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION (WCPFC)

Report: PART 1: INFORMATION ON FISHERIES,

RESEARCH AND STATISTICS for year 2022.

Country: PAPUA NEW GUINEA

Prepared by: National Fisheries Authority,

Port Moresby, Papua New Guinea.

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the commission by the 30th April 2023.

Yes

Revision Notes:

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2. Summary

The Papua New Guinea (PNG) tuna fishery is made up of both the purse-seine and longline sectors. The domestic longline vessels fish exclusively in PNG waters. Foreign longline vessels were not been given access into PNG waters until recently in 2015 after more than two decades. The purse-seine sector is made up of a mixture of both domestic and foreign access vessels. The domestic sector comprises the PNG flag vessels and the PNG locally-based foreign (LBF) vessels. The LBF vessels are foreign flag vessels under domestic charter arrangements to support onshore processing facilities in PNG.

There were a total of 46 purse seine vessels in the PNG national fleet active in the WCPFC Convention Area in the year 2022. A total logsheet catch of 202,582 mt of target tuna species were caught by the purse seine vessels part of the PNG National fleet in 2022, utilization an estimated overall logsheet effort of 6,328.77 fishing days (*Table 1b & 2b*).

There were 10 domestic chartered tuna longline vessels active inside the PNG waters in 2022. A total of 2,378 mt of target tuna species (YFT, ALB & BET) had been harvested using an overall effort of 5,308,500 hooks (Table 1a).

Estimated catch by purse seine foreign vessels fishing inside PNG waters in 2022 under bilateral and multilateral access agreements stood at 298,566 mt of tuna with an estimated effort of 6,670 hundred hooks (Table 6).

PNG is striving to build its domestic fishing industry and increase onshore investment. This approach has seen fishing licenses linked to domestic onshore investments, as the rights to fish in PNG are linked to onshore investment. The country is working towards processing all fish caught within its waters domestically, including processing of all tuna caught by the PNG National Fleet in the PNG processing plants. In order to realise this, PNG under the current Government have worked towards relaxing its policies and fast tracking development of new fisheries infrastructures in order to create an internationally competitive environment for fishing and processing businesses to flourish.

3. Tabular Annual Fisheries Information

Table 1(a): Annual catch (mt) and effort estimates for the PNG tuna longline fleet by primary species for the WCPFC Convention Area for year 2018-2022. Source: SPC

	V	0040	0040	0000	0004	2022
	Year	2018	2019	2020	2021	Provisional
	Effort (HHooks)	52,149	8,103	5,746	-	53,085
	Albacore	196	686	13	-	448
	Bigeye	87	243	5	-	183
Tuna Catch (mt)	Skipjack	2	26	0	-	7
	Yellowfin	2070	947	129	-	1740
	Total Tuna	2355	1,902	147	-	2,378
	Black Marlin	83	2	10	-	7
	Blue Marlin	40	45	0	-	18
Billfish Catch (mt)	Striped Marlin	5	9	3	-	3
	Swordfish	21	13	0	-	5
	Total Billfish	149	69	13	-	33
	Blue Shark	22	-	-	-	0
	Silky Shark	-	-	-	-	0
	Hammerhead Sharks	-	-	-	-	0
Shark Catch (mt)	Mako Shark	-	-	-	-	0
	Oceanic White Tip	-	-	-	-	0
	Thresher Sharks	-	-	-	-	0
	Total Sharks	22	-	-	-	0

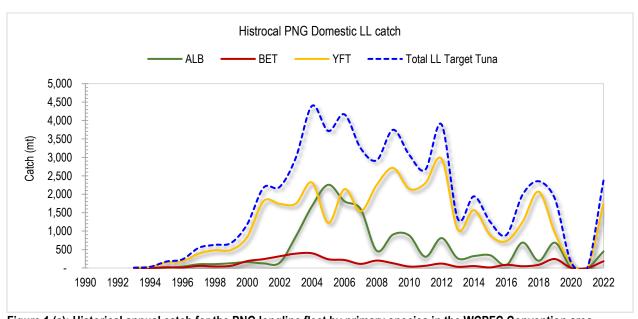


Figure 1 (a): Historical annual catch for the PNG longline fleet by primary species in the WCPFC Convention area.

Table 1(b): Annual logsheet catch and effort estimates for the PNG purse seine fleet by primary species in the WCPFC Convention Area, 2018-2022. Source: SPC

	Year	2018	2019	2020	2021 —	2022 Provisional
Effort (fishing	& searching days)	9,691	6,627	6,708	6,344	6,519
	Albacore	17	-	5	7	
	Bigeye	7,174	3,880	483	779	1,019
-	Pacific Bluefin	-	-	-	-	-
Catch (mt) —	Skipjack	209,631	195,213	109,191	102,060	138,543
_	Yellowfin	94,694	66,296	70,839	67,910	68,289
	Total	319,006	265,389	180,518	170,755	207,851

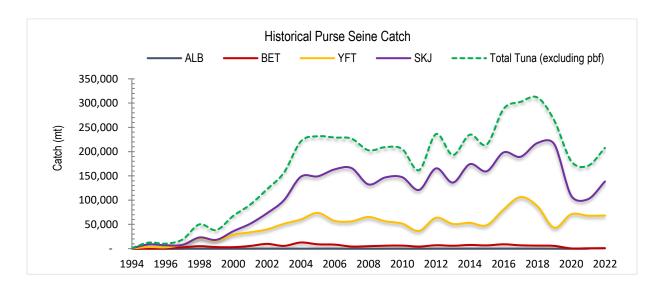


Figure 1 (b): Historical annual catch for the PNG purse seine fleet by primary species in the WCPFC Convention area.

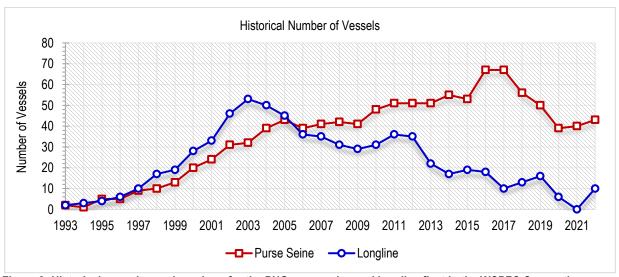


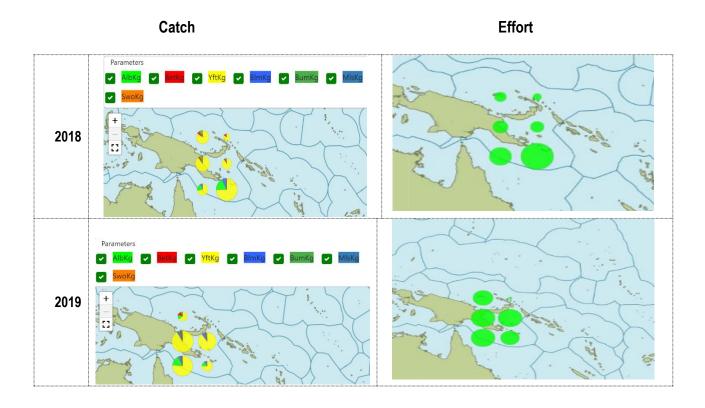
Figure 2: Historical annual vessel numbers for the PNG purse seine and longline fleet in the WCPFC Convention area.

Table 2(a). Number of PNG longline vessels by size category, active in the WCPFC Convention area for years 2018-2022. Note that there were no domestic LL operation inside PNG waters in 2021.

Yr	Size Class (GRT)					
	0-50	51-200	201-500	500+	Total	
2018	0	12	2	0	14	
2019	0	12	2	0	14	
2020	0	6	0	0	6	
2021	0	0	0	0	0	
2022	0	0	10	0	10	

Table 2(b). Number of PNG purse seine vessels by size category, active in the WCPFC Convention area for years 2018-2022.

ZVZZ.						
Yr	0-50	51-200	201-500	500+	Unknown	Total
2018	4	10	33	9	0	56
2019	6	9	29	6	0	50
2020	6	6	24	2	0	38
2021	3	8	26	3	0	40
2022	3	9	26	4	1	43



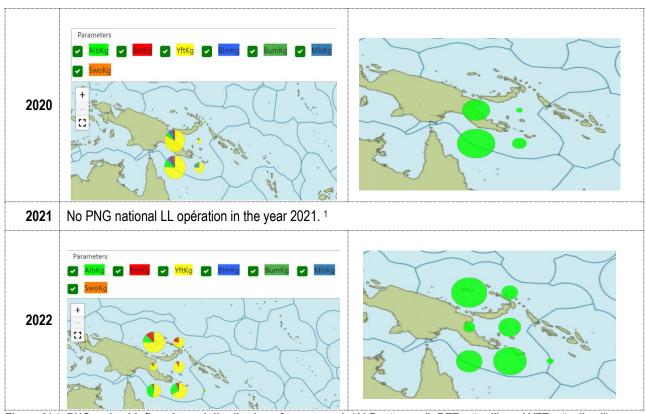
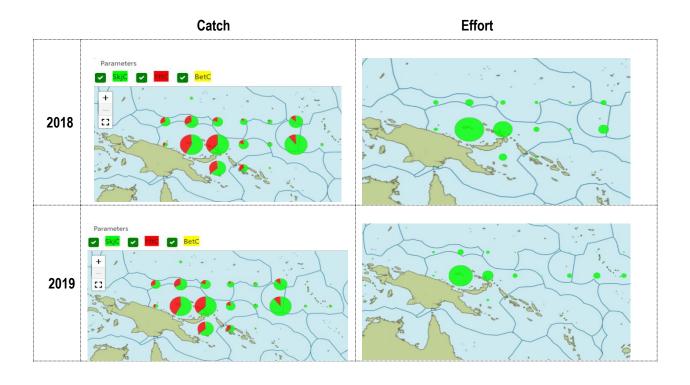


Figure 3(a). PNG active LL fleet Annual distribution of target catch (ALB = "green"; BET = "red"; and YFT = "yellow") and effort (green pies in the right columns) in the WCPFC Convention area for year 2018-2022. Source: SPC



¹ No PNG national LL vessels were operating in 2021 due to the impact of COVID-19 pandemic.

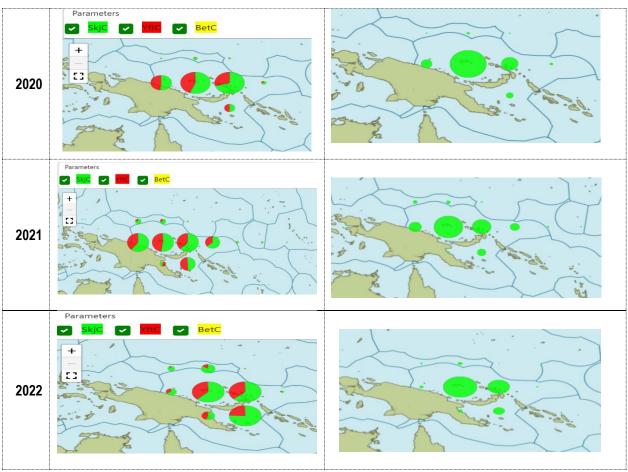


Figure 3(b). Annual distribution of target catch (SKJ = Blue; YFT = yellow; and BET = red and effort (green pies in the right columns) by the PNG purse seine fleet active in the WCPFC Convention area for year 2018-2022. Source: SPC

Table 3. Observed annual estimated catches of species of special interest (seabirds, turtles and marine mammals) by PNG vessels, in the WCPFC Convention Area for years 2018-2022. Source SPC.

Species	2018	2019	2020	2021	2022
ALBATROSSES NEI	-	-	-	-	
AQUATIC MAMMALS NEI	-	3	-	1	
BALEEN WHALES NEI	3	7	5	10	6
BEAKED WHALES NEI	8	8	7	-	
BIRD (UNIDENTIFIED)	-	-	-	-	1
BLUE WHALE	1	1	1	-	
BOTTLENOSE DOLPHIN	153	21	-	9	3
BRYDE'S WHALE	13	27	18	19	24
COMMON DOLPHIN		11	8	10	15
CUVIER'S BEAKED WHALE	1	-	-	1	
DOLPHINS NEI	-	-	4	-	
DWARF SPERM WHALE	-	2	-	-	
FALSE KILLER WHALE	220	107	49	33	27
FIN WHALE	6	-	-	-	

Grand Total	855	378	183	172	168
WHALE SHARK	131	109	45	40	17
STRIPED DOLPHIN	77	4	4	_	18
SPINNER DOLPHIN	48	_	7	_	
SPERM WHALE	4	-	-	-	2
SHORT-FINNED PILOT WHALE	33	14	-	-	
SEI WHALE	29	14	13	9	17
ROUGH-TOOTHED DOLPHIN	16	-	-	-	1
RISSO'S DOLPHIN	9	4	6	2	
PYGMY SPERM WHALE	4	5	-	-	
PYGMY KILLER WHALE	6	4	1	-	5
PANTROPICAL SPOTTED DOLPHIN	10	4	-	-	
OLIVE RIDLEY TURTLE	12	7	4	6	3
MINKE WHALE	2	-	-	1	
MELON-HEADED WHALE	7	-	-	-	1
MARINE TURTLES NEI	-	3	-	-	
LONG-BEAKED COMMON DOLPHIN	-	-	-	-	
LOGGERHEAD TURTLE	12	4	_	_	5
LEATHERBACK TURTLE	1	-	-	-	1
KILLER WHALE	-	1	-	-	
INDO-PACIF. BOTTLENOSE DOLPHIN	12	4	7	16	19
HUMPBACK WHALE	-	-	_	1	
HAWKSBILL TURTLE	8	5	-	7	1
GREEN TURTLE	26	6	4	3	2
GINKGO-TOOTHED BEAKED WHALE	-	3	-	3	
FLATBACK TURTLE	3	-	-	1	

Table 4(a). Annual estimated catches (mt) of non-target, associated and dependent species, including sharks, by the PNG purse seine vessels in the WCPFC Convention Area, for years 2018-2022. Data Source; SPC

Species	2018 (mt)	2019 (mt)	2020 (mt)	2021 (mt)	2022 (mt)
BALEEN WHALES NEI	-	20	1.5		
BARRACUDAS NEI	0.1	0	0.2	0.01	0.13
BATFISHES					
BIGEYE SCAD					
BIGEYE THRESHER SHARK			0.1	0.11	0.05
BIGEYE TREVALLY	0.2	0.3			0.02
BIG-SCALE POMFRET					
BLACKFIN BARRACUDA					0.01
BLACK MARLIN	8.3	15	6.9	10.55	6.13
BLACKTIP SHARK	1.9				
BLAINVILLE'S BEAKED WHALE			2		2

	BLUE MARLIN	21.9	15.6	11.1	8.53	3.7
BLUE SEA	CHUB / SNUBNOSE CHUB /	0.5	0		0.04	
	TOPSAIL DRUMMER BLUE WHALE		9			
	BOTTLENOSE DOLPHIN	0.5	0	0.8		0.66
	BRONZE WHALER SHARK	0.2				
	BRYDE'S WHALE	0	11			40.00
	BULL SHARK					
	BULLET TUNA	11.3	0.1	19.3		3.29
	COMMON DOLPHIN		0.8			0.09
	COMMON DOLPHINFISH	7.9	4.4	0.9	0.18	0.38
	DOLPHINS NEI		0.1	0.1	0.21	
	EASTERN PACIFIC BONITO	18.6	30.3	65.8	25.99	68.13
	FALSE KILLER WHALE	5.5	10.1		1.08	1.39
	FILEFISHES NEI				1.5	
	FRIGATE TUNA	35.5	4.5	56.3	57.16	9.28
	GIANT MANTA	28.2	13.1	21.8	11.67	8.62
	GOLDEN TREVALLY	0		0.1		0.01
	GREAT BARRACUDA	0.5	0.2	0.6	0.31	0.55
	GREAT HAMMERHEAD	0.1	0.1	0.1	0.06	0.36
	GREAT WHITE SHARK					0.11
	GREEN TURTLE	0.2	0	0		
	GREY REEF SHARK					
Н	AMMERHEAD SHARKS NEI					0.01
	HAWKSBILL TURTLE	0.1	0			0.01
INDO-PAC	IF. BOTTLENOSE DOLPHIN	0.1	0			0.31
	INDO-PACIFIC SAILFISH	0.8	0.1	0.3	0.16	
	KAWAKAWA	3	1.5	28.9	42.12	36.87
	LEATHERBACK TURTLE	0				
	LOGGERHEAD TURTLE	0.1	0.1			0.04
LONG-B	EAKED COMMON DOLPHIN				0.14	
	LONGFIN BATFISH	0.1	0		0.01	
	LONGFIN MAKO		0.1			
	MACKEREL SCAD	44	16.7	19.2	9.39	4.13
	MANTAS DEVIL RAYS NEI	3.5	4	4.7	5.31	5.68
	MARINE TURTLES NEI					0.01
	MELON-HEADED WHALE					
	MINKE WHALE		3			
	MOBULA	10.4	5.5	9	14.12	3.89
NARROW-BAR	RRED SPANISH MACKEREL	0.3				
	OCEAN SUNFISH	0.1	0.1	0	0.23	0.06
	TRIGGERFISH (SPOTTED)	12.4	6.9	2.1	2.3	0.5
(OCEANIC WHITETIP SHARK	1.6	0.9	0.1	0.44	0.16

OII FIOLI					
OILFISH	0	0	0		0.01
OLIVE RIDLEY TURTLE	0	0	0	0.40	
OTHER FISH	3.9	1.3	5.9	8.19	2.04
PACIFIC BLUEFIN TUNA					
PANTROPICAL SPOTTED DOLPHIN		0.1			
PELAGIC STINGRAY	0	0			
PELAGIC THRESHER SHARK	0				0.09
PYGMY KILLER WHALE					
RAINBOW RUNNER	93	55.8	22.5	12.57	27.2
RISSO's DOLPHIN				0.18	0.2
ROUGH-TOOTHED DOLPHIN	0.2				0.01
SCALLOPED HARMMERHEAD				0.17	
SEI WHALE		0.5			
SHARKS RAYS SKATES ETC. NEI	0.1				
SHARKS (UNIDENTIFIED)	2.1	0.4	1.4	2.3	
SHARPTAIL MOLA	0.1			0.02	0.05
SHORTBILL SPEARFISH		0.1		0.08	0.16
SHORTFIN MAKO				0.1	
SILKY SHARK	363.6	464.9	259	167.9	130.2
SILVERTIP SHARK	0				0.04
SLENDER SUNFISH				0.03	
SPERM WHALE			0.4		
SPOTFIN DRAGONET			0.1		
STINGRAYS BUTTERFLY RAYS NEI	0	0.1		0.04	0.37
STRIPED MARLIN	1.8	0.5	0.2	0.03	
SWORDFISH	0.1	0.3	0.2	0.02	0.01
TIGER SHARK	0.6				
TRIGGERFISHES DURGONS NEI	3.4	4.7	2.4	2.62	0.97
TUNAS NEI	202.4	8	25	155	70.5
UNICORN LEATHERJACKET FILEFISH	0.2	0		0.01	
UNSPECIFIED	2.1	0.3	0.2	0.03	
WAHOO	1.4	0.1	0.1	0.03	
WHALE (UNIDENTIFIED)	20	V. 1	V. 1	58.2	
WHALE SHARK	104.9	200.1	57.8	58.2	43.1
WINGHEAD SHARK	104.9	۷۷۷.۱	31.0	JU.Z	45.1
		040.7	607.4	6E7 24	474 50
Grand Total	1,018.8	910.7	627.1	657.34	471.53

Table 4(b). Annual estimated catches (by weight) of non-target, associated, and dependent species, including sharks, by the PNG longline vessels in the WCPFC Convention Area, for the years 2018 -2022. Data Source; SPC

Species	2018	2019	2020	2021	2022
	(mt)	(mt)	(mt)	(mt)	(mt)
BARRACUDAS NEI	3.79	1.16	0.02	-	2.21
BLACK MARLIN	61.78	25.91	10.61	-	5.79
BLACKFIN BARRACUDA		0.16		-	-
BLUE MARLIN	33.26	14.76	0.98	-	16.43
BLUE SHARK		14.08		-	-
COMMON DOLPHINFISH	0.58	0.09		-	1.24
ESCOLAR				-	0.16
HAMMERHEAD SHARKS NEI				-	-
INDO-PACIFIC SAILFISH	27.47	17.92	9.51	-	9.59
MACKERELS NEI				-	
MARLINS, SAILFISHES, ETC. NEI				-	0.29
OILFISH	12.81	6.30	1.23	-	3.85
ОРАН	0.82	4.46	0.04	-	4.95
OTHER FISH	1.5	3.88		-	14.89
SHARKS (UNIDENTIFIED)				-	-
SKIPJACK TUNA	0.863	3.25	0.21	-	6.51
STRIPED MARLIN	3.77	16.72	3.61	-	2.21
SWORDFISH	18.52	8.16	0.18	-	4.71
UNSPECIFIED				-	0.49
WAHOO	28.11	14.73	5.67	-	7.09
Grand Total	193.31	131.58	32.06	-	80.41

Table 5. Estimated annual coverage of operational catch/effort, observer and port sampling data for the PNG vessels by gear, active in the WCPFC Convention Area, for years 2018-2022. Source: SPC & NFA.

V	0	Logsheet	Observer Cove	erage	D. (0
Year	Gear	Coverage	Trip	Days	Port Sampling Coverage
	LL	100%	8%	16%	0%
2018 —	PS	80%	90%	87%	≈ 20%
2042	LL	100%	4%	1%	0%
2019 —	PS	100%	77%	51%	0%
2000	LL	100%	3%	1%	0%
2020 —	PS	100%	39.00%	35%	0%
0004	LL	0%	0%	0%	0%
2021 —	PS	67%	36.26%	40%	0%
2000	LL	63%	0%	0%	0%
2022 —	PS	84%	32%	27%	0%2

 $^{^{\}rm 2}$ The 2022 Logsheet, Observer, and Port Sampling Coverage in Table 5 are provisional.

4. Background

Tuna in the Papua New Guinea (PNG) national waters are caught by two main fishing methods, namely purse-seine and longline. Most of the catch (99%) is attributed to the purse-seine fishery. Purse-seining started in PNG waters in the early 1980s and has since intensified, with the 2010 catch being the highest on record at 702,969 mt³. The longline fishery started even earlier than the purse-seine fishery, originally by foreign fleets under access arrangements. But in the mid-1990s, a policy on domestication enabled the longline fishery to be a national activity only, hence doing away with access by foreign fleets. However, in 2015, under a trial longline fishery arrangement to determine longline catch rate, a total of 5 foreign flag ultra-low longline vessels under a charter arrangement were given access to the PNG waters. This marks the re-introduction of foreign longline vessels into PNG waters once again. PNG now has 10 chartered longline vessels operating in the PNG waters as part of the PNG national longline fleet.

The tuna fishery in PNG represents a balance of both domestic industry development and foreign distant water fishing nations (DWFN) access agreements. Domestic industry development is pursued by using a model whereby a fishing license is granted on the condition that the vessels catch fish for processing facilities in-country. Vessels under this scheme are either re-flagged to PNG or are given incentives by way of reduced license fees and allowed to fish within the archipelagic waters (AW), or are sponsored to fish under the Federated States of Micronesia Arrangement (FSMA) within the PNA members' waters.

The fishery is guided by the National Tuna Fishery Management and Development Plan (NTFMDP) which establishes an overall management structure, and an application framework for all tuna fisheries. This includes catch and effort controls, gear restrictions, the use of Fish Aggregating Devices (FAD), and other management tools for the purpose of tuna resource conservation and management, as well as combating illegal, unregulated, and unreported fishing activities (IUU). The Plan is updated where necessary to conform to the country's development plans as well as regional and international obligations and agreements.

The purse-seine fishery operates within the guidelines of regional and sub-regional arrangements such as the Implementation Arrangements of the Parties to the Nauru Agreement (PNA) and the Harmonized Minimum Terms and Conditions adopted by the Forum Fisheries Agencies (FFA) whose requirements are incorporated into the National Tuna Management and Development Plan.

5. Flag State Reporting

This section reports activities by the national fleet in waters of the Western and Central Pacific Fisheries Commission Convention Area (WCPFC CA) including PNG's Exclusive Economic Zone (EEZ). The national fleet comprises of longline and purse seine vessels under PNG flag and those vessels under charter arrangements with domestic companies.

³ The highest nationally recorded purse seine tuna catch for all PNG licensed purse seine vessels (FB & PNG NF) active in the PNG EEZ & AW in the year 2010.

5.1 Domestic Tuna Longline

The domestic tuna longline fishing operation in 2021 has been greatly affected by the COVID-19 pandemic. There were no LL fishing activities in the year 2021.

The domestic tuna longline fishing operation commenced again in 2022 with a total of 10 chartered vessels. The 2022 longline operation saw a total of 57,879 mt of tuna being harvested using a total effort of 5,308,500 hooks. The LL operation in 2022 also saw a total of 33 billfish being caught (Table 1a).

5.2 Purse Seine – National Fleet

PNG manages a purse seine fleet that made up of two categories; Domestic PNG-flagged vessels and Locally-Based Foreign (LBF) vessels. LBF vessels are foreign flagged and whose activities are governed under charter arrangements with the PNG locally based companies. These vessels support onshore processing plants in PNG.

Catches comprise mostly of skipjack with the highest composition, followed by yellowfin and bigeye tuna. Although skipjack is the main target species in this fishery, yellowfin and bigeye are also commercially important.

Catches by the PNG domestic fleet have generally increased in 2022 (Figure 1b & Table 1b). A total logsheets catch of 138,543 mt of skipjack, 68,289 mt of yellowfin and 1,019 mt of bigeye tuna were caught by the PNG purse fleet in the WCPFC convention area (Table 1b). This contributed to a total of 207,851 mt of tuna being harvested by the PNG National Fleet in 2022, an increase of 37,096 mt (22% increase) from the 2021 catch.

PNG purse seine vessels fish in the PNG waters as well as waters of other PNA member countries under the FSM Arrangement⁴. During the peak El Nino conditions in late 2015 activities of the purse seine vessels under the PNG national fleet shifted towards the East. In 2016, vessels' catch and effort were almost equally distributed between the West and the East (PNG 2021 AR Part 1 Figure 3(b)). In 2018 onwards the fishing activities of the purse seine vessels under the PNG national fleet were more concentrated in the WPO⁵.

6. Coastal State Reporting

This section captures reports on activities of foreign flags and other small-scale domestic fishery activities in the national waters. The foreign flag vessels comprised the foreign purse seine vessels and the recently re-introduced foreign tuna longline vessels. Activities of the now-banned domestic shark longline fishery and a very small handline fishery are also reported in this section since all their activities are inside PNG waters.

6.1 Purse Seine - Foreign Bilateral Vessels

⁴ The Federated States of Micronesia (FSM) Arrangement: defines a multilateral licensing arrangement providing annual access to all PNA EEZs by purse-seine vessels which contribute significantly to the enhancement of a PNA country's (the Home Party) economic involvement in the fishery.

⁵ WPO; Western Pacific Ocean

Foreign purse seine vessels that fish inside PNG EEZ are licensed under the Bilateral Access Agreements between PNG and either Foreign Fishing Companies or Fishing Associations of the home party state. This also includes foreign vessels fishing under the terms of the US Treaty and FSM Arrangement. In the last five years, catches by foreign vessels fishing in PNG waters has averaged around 153,309 mt.

There was an increase in the catch and effort of foreign flag purse seine vessels in the PNG EEZ since 2020. The total tuna catches from these foreign flag purse seine vessels has increased from 136,336 mt in 2020 from the logsheet effort of 3,407 fishing days to the latest record-high of 298, 566 mt from the logsheet effort of 6,670 days in the year 2022 (Refer to Table 6 for more information).

Table 6: Catch (mt) and effort (logsheets days) estimates for foreign purse seiners fishing in PNG waters from 2018-2022. Data Source: SPC.

		Catch (mt) / Species					
Year	Fishing Days —	SKJ	YFT	BET	Total		
2018	2,625	76,520	15,806	1,020	93,346		
2019	2,081	64,616	13,683	973	79,272		
2020	3,407	111,606	23,035	1,695	136,336		
2021	4,000	127,946	27,799	3,281	159,026		
2022	6,670	252,706	42,581	3,279	298,566		

6.2 All Purse Seine (FB & PNG NF) Catch & Effort inside PNG EEZ (excluding catch inside PNG AW)

The catch and effort patterns of purse seine fishing inside PNG EEZ generally corresponds to each other. The combined catch and effort report from all purse seine vessels active in the PNG EEZ in the last 15 years showed the highest catch record in 2010 (500,000 mt) followed by an overall catch decline between 2011-2015 and a slight increase in the catches from 2016-2017 compared to 2015. The catches increased in a step ladder shaped from 2016-2021 before a steep increased in 2022.

The gradual decline in the catches two years after 2010 (2011;405,594mt & 2012; 306,085mt) was generally attributed to foreign bilateral purse seine vessels pulling out of the PNG EEZ as a demonstration of foreign fishing companies' disagreements on the implementation of the PNA purse seine Effort Base Management System (PNA Vessel Day Scheme) inside PNG EEZ in 2010.

The steep decline in catch in 2014 and 2015 was attributed to the impact of El Nino Southern Oscillation (ENSO) on the migratory pattern of skipjack thus, influencing the purse seine fishing activities inside the PNG EEZ during those two years. The uncertainty and risk posed by this climatic phenomenon has greatly contributed to the slow recovery of fishing activities even after 2015.

Fishing activities slowly catching up its phase from 2016 to 2021 (2016; 134,902mt, 2017; 180,870mt, 2018; 191,450mt, 2019; 178,611mt, 2020; 229,355mt, 2021; 241,772mt) before making a steep increase in the year 2022 (387,427mt). Refer to Figure 4 for additional information.

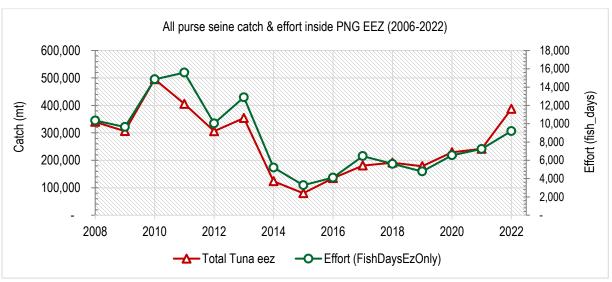


Figure 4. Catch and Effort by all active licensed purse seine vessels (FB & PNG NF) inside PNG EEZ. Data Source; SPC6

6.3 Longline - Foreign Vessels

Foreign Bilateral Longline vessels that fish in PNG waters are licensed under the Foreign Bilateral Access Agreements between PNG and the Bilateral Access Partners, through company, fishing association, or home party state.

Thirty-three (33) Foreign Bilateral (FB) LL vessels were active inside PNG waters in the year 2022. A total of 5,038mt of tuna was caught with a record-high effort of 5,481,700 hooks by these FB LL vessels in the year 2022. Refer to Table 7 for more information.

Foreign flag longline vessels were re-introduced into PNG waters in 2015 after non-access for more than two decades. The government's plan to domesticate longline fishing activities for local participation has resulted in a ban on foreign flag longline fishing activities inside PNG waters since 1996. Change in the government policy in 2014 and 2015 have seen this category of longline vessels given access once again into the PNG national waters initially under charter arrangements and then onward into full Bilateral Access Arrangements.

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⁶ The Catch and Effort information provided in Figure 4 does not include the Catch and Effort in the Archipelagic Waters of PNG.

Table 7: Catch (mt) and effort (hhooks) estimates for foreign longline fishing in PNG waters from 2018-2022. Data Source: SPC.

2018 51,375 202 1,883 118 2,2 2019 95,365 752 2,147 224 3,1 2020 6,304 15 135 6 1 2021 220 1 3 1	,					
2019 95,365 752 2,147 224 3,1 2020 6,304 15 135 6 1 2021 220 1 3 1	Year	Hooks100	Alb (mt)	Yft (mt)	Bet (mt)	Annual Target Tuna Total
2020 6,304 15 135 6 1 2021 220 1 3 1	2018	51,375	202	1,883	118	2,204
2021 220 1 3 1	2019	95,365	752	2,147	224	3,123
	2020	6,304	15	135	6	156
2022 98,703 1,273 3,450 314 5,0	2021	220	1	3	1	5
	2022	98,703	1,273	3,450	314	5,038

6.4 All Tuna Longline (FB & PNG NF) Catch and Effort inside PNG EEZ

The LL fishing operation in the PNG EEZ was reserved for national participation since 1996. Foreign vessels were given access to PNG waters again commencing 2014. targeted tuna catches in PNG was general maintained below 3,000 mt between 2010-2018, an increase in the catch between 2017-2019 & 2022 were attributed to increased LL fishing operation inside PNG EEZ. The specific increase in catches between 2017-2019 were attributed to the increase in the

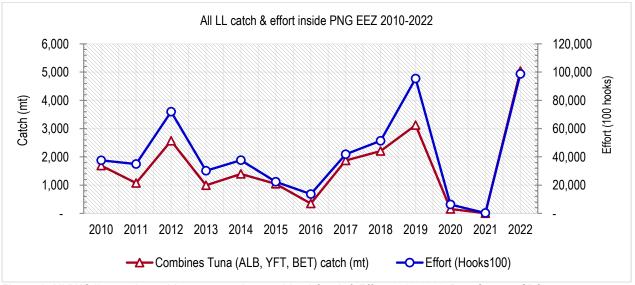


Figure 4. All PNG licensed tuna LL target species combined Catch & Effort 2010-2022. Data Source; SPC

6.5 Shark Longline

The shark longline fishery was managed under a separate management plan from the tuna longline fishery. The fishery was limited to 9 vessels, setting 1,200 hooks per day with a total allowable catch of 2,000 mt dressed weight per year. All vessels in this fishery fished only in PNG waters.

The shark fishery was closed in the first quarter of 2014 in response to the CMM 2011-04 and CMM 2013-08 which prohibited landings of Oceanic White-Tip and Silky Shark respectively. Figure 6a and 6b shows the recorded catch, number of vessels and effort (hundred hooks) since 2009. Considerable amount of tuna

(mainly yellowfin) and billfishes are also caught in this fishery as bycatch. The average estimated catch in 2010-2015 was 1,344.26 mt with 1,011.47 mt being shark catches alone (*Table 8*).

Table 8: Annual catch estimates (mt) of shark species and effort estimate (hundred hooks) for PNG domestic shark longline fleet in waters under national jurisdiction. Data source: PNG NFA.

	Year	2010	2011	2012	2013	2014	Average
	Effort (HHooks)	22,790	27,934	20,817	16,367	6,129	18,808
	Blacktip Shark	18.93	2.81	1.31	5.59	7.45	9.22
	Blacktipped Reef Shark	19.75	43.98	36.53	11.17	12.79	24.85
	Blue Shark	10.21	18.93	16.08	16.59	9.38	14.24
	Galapagos Shark	0.99	0.29	0.06	2.89	2.69	1.38
	Grey Reef Shark	23.87	8.42	2.59	4.68	2.10	8.33
	Hammerhead Shark	39.15	22.34	18.64	31.06	15.09	25.26
	Oceanic White Tip	12.90	7.15	3.74	7.42	7.66	7.77
	Silky Shark	907.26	1,292.90	902.46	796.12	399.27	859.60
	Silvertip Shark	6.37	0.45	0.39	0.38	0.30	1.58
	Tiger Shark	8.76	2.15	1.21	2.16	0.16	2.89
m)	Shark Unidentified	71.72	80.25	52.65	54.61	22.6	56.37
Catch (mt)	SHARK TOTAL	1,119.90	1,479.66	1,045.64	932.65	479.48	1,011.47
S	Albacore	1.46	7.32	9.68	1.37	0.23	4.01
	Bigeye	3.66	2.37	10.69	18.96	15.56	10.25
	Yellowfin	140.03	173.98	205.34	112.84	25.58	131.55
	Black Marlin	10.85	4.38	3.51	9.12	2.79	6.13
	Blue Marlin	53.92	113.04	65.63	64.83	16.32	62.75
	Sailfish	43.85	65.9	35.16	28.69	9.98	36.72
	Striped Marlin	0.99	1.23	1.69	1.13	0.65	1.14
	Swordfish	49.3	77.57	86.61	56.39	21.71	58.31
	Other	36.75	21.79	20.53	26.37	4.28	21.94
	OVERALL TOTAL	1,460.72	1,947.22	1,484.46	1,252.35	576.57	1,344.26

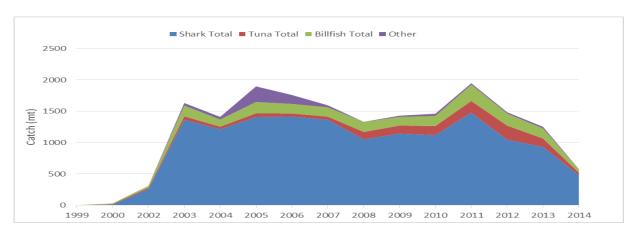


Figure 6a: Catch estimate by shark longline vessels. Data source: NFA

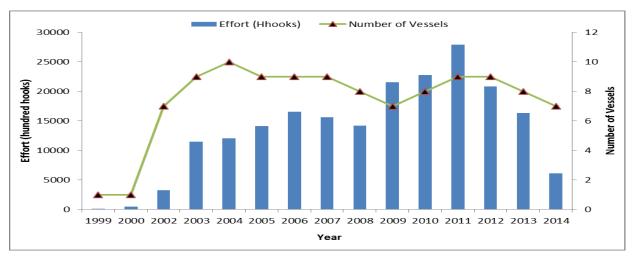


Figure 6b: Effort estimates (hhooks) and the number of shark longline vessels. Data source: PNG NFA

6.6 Handline

The trial on handline fishery commenced in 2005 with 10 pump-boats. In 2009, the number of pump-boats declined to 5 vessels. Although there was some growth potential for this fishery, most of the vessels failed to continue fishing mainly due to lack of proper business management, and the high operational cost for artisanal operators during its inception. The vessels were solely owned and operated by local fishermen. Catch by these vessels, which do not normally exceed 10 mt (estimate) per year, were sold to processing companies as well as local supermarkets. There is no handline fishery existing in PNG at the moment and no pump-boats operating in the waters of PNG to date.

7. Socio-Economic Factors

Apart from the Climatic conditions that have significantly contributed to the recent purse seine and longline fishing and catch trend, one of the significant socio-economic factors that may have indirectly contributed to these recent changes include the Government's focus on increasing direct and indirect benefits from the fisheries sector.

8. Disposal of Catch

There was an increase in transshipment and landing activities inside PNG ports in the year 2022. A total of 155,309 mt of tuna was transshipped by the purse seine vessels from the PNG National Fleet, 343,481 mt of tuna was transshipped by purse seine vessels from the Foreign Bilateral Fleets, and 247 mt by the LL vessels from the PNG National LL fleet (Table A1 & A2, pg 26).

About sixty-three percent (63%) of the total tuna offloaded and transshipped by the purse seine vessels under the PNG National fleet was landed for processing in the PNG processing plants. Around five percent (5%) of the tuna offloaded and transshipped by the purse seine vessels under the Foreign Bilateral Fleets was also landed in PNG for processing.

9. Onshore Developments

9.1 Onshore Processing Plants

PNG has six (6) onshore processing plants operating in the country for more than two decades. The PNG Onshore Processing Plants support around 12,652 direct employment (2021 record). Ninety-six percent (96%) of the employees were PNG nationals. Sixty-eight percent (68%) of these employees are women.

The Government of PNG is in the process of establishing a Marine Industrial Zone in PNG with an overall intention to developing a vibrant, broad base, and value-adding fisheries sector that will be globally competitive and domestically inclusive, providing revenue for the Government, wealth creation and food security for the people. Through this new commitment and investment, PNG is looking at tripling the existing employment figure.

9.2 Exports

The quantity of processed tuna products exported from the Tuna Onshore Processing Plants has been steadily increasing since the 90's to over 100,000 t commencing 2012. The highest quantity exported stood at around 200,000 t in 2014, earning revenue of a little over USD 400 million. The production dropped in 2015 to 100,000 t due to decreased catch in the national waters as a result of the El Nino southern oscillation (ENSO) effect, however, production picked up again in 2016 at around 170,000 t.

The highest recorded export in the last three years was in 2020 where a total of 201,000 t of processed tuna products were exported, earning a total revenue of about USD 424 million. This was an increase of 9,000 t of exported products and an additional USD 26 million in revenue earned from the 2019 export quantity of 192,000 t and export revenue of USD 398 million. The increase export in 2020 was probably linked to an increase in the demand for protein coupled with panic-buying triggered by the COVID-19 pandemic and the increase export in the 2014 was probably due to stock-piling of frozen whole round tuna at markets such as Bangkok as a means to address shortage of raw materials for processing during the ENSO impact period.

There was a drop in the quantity of exported tuna products after 2020. The lowest was the 2022 exports of around 137,000 t, which was 31% decrease from the exported quantity in 2020 (*Figure 7a*).

Most of the exported products were canned and processed frozen tuna (*Figure 7b*). The quantity of canned tuna exports has been increasing with more tuna processed onshore and the trend is likely to continue as the industry expands in the country.

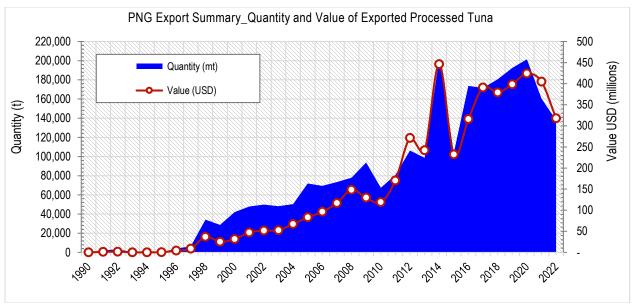


Figure 7a: Quantity (tons) and value (USD) of processed tuna products exported by domestic companies. Data source; PNG NFA

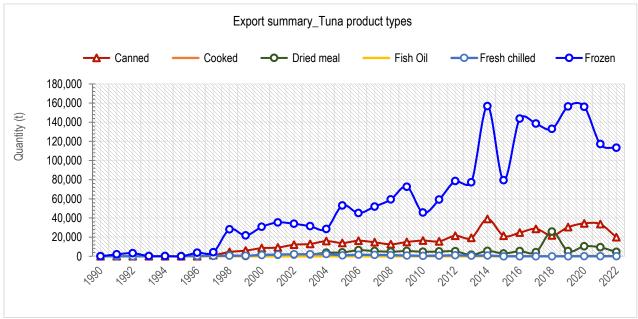


Figure 7b: Quantity of processed tuna product type exported. Data source; NFA

10. Future Prospect of the Fishery

Papua New Guinea is focusing on building its domestic tuna industry to an extent where the generated revenue can offset that currently obtained from bilateral access fees. Some of the government's main focus areas include increasing downstream processing, value-adding, increasing employment and export earnings, developing enabling infrastructure and improving the industry operating environment. The

government is also looking at expanding and enhancing International Trade and market access for fisheries products, supporting, maintaining, and encouraging genuine Foreign Direct Investment, and optimization of PNG participation and local content in the tuna fishery sector. All these as been factored into the recently launched PNG Fisheries Strategic Plan 2021-2030.

11. Status of Tuna Fishery Data Collection System

10.1 Logsheet data collection and verification

PNG is implementing e-reporting on all PNG-licensed purse seine vessels operating within PNG and the PNA member countries' waters. Data verification is done within the e-reporting platform (Fisheries Information Management System, FIMS) by the vessel operators and national data officers in collaboration with SPC data officers and FIMS Inc support officers).

PNG is in the process of trialing out SPC Onboard e-log reporting application on its domestic longline vessels in collaboration with SPC.

10.2 Observer program

The PNG Observer Program (PGOB) has a total of ~250 observers covering both purse seine and longline fishery. Observer e-reporting and e-debriefing have been initiated more than 2 years ago with improvements made along the way.

10.3 Port sampling program

PNG is currently working with SPC in trialing SPC Onshore (Port Sampling e-reporting application) on the catches PNG chartered LL vessels operating out of Alotau, PNG. There are no port sampling activities covering the purse seine fishery at the moment.

10.4 Unloading/Transshipment

PNG has an existing electronic Fishery Trackability System in place that ensures all tuna catches, transshipments and landings are monitored.

12. Research activities covering target and non-target species

There were no research activities covering target and non-target species carried out in PNG in the year 2022.



ADDENDUM TO ANNUAL REPORT PART 1

23 March 2023⁷

SECTION A: SPECIFIC INFORMATION TO BE PROVIDED IN ANNUAL REPORT PART 1 AS REQUIRED BY CMMS AND OTHER DECISIONS OF THE COMMISSION.

COMMISSIO	14.	
	CCMs shall report to the Commission the total number of	There was no
	vessels that fished for swordfish and the total catch of	fishing operation
	swordfish for the following:	carried out by the
	a. vessels flying their flag anywhere in the Convention Area	PNG National
	south of 20°S other than vessels operating under charter,	Fleets south of
	lease or other similar mechanism as part of the domestic	20^{0} S. Thus, there
	fishery of another CCM;	were no catch and
	b. vessels operating under charter, lease or other similar	effort directed on
	mechanism as part of their domestic fishery south of 20°S;	swordfish or any
CNANA	and	other by-catch
CMM	c. any other vessels fishing within their waters south of 20°S.	south of 20° S.
2009-03	This information shall be provided in Part 1of each CCM's	
[Swordfish]	annual report. Initially, this information will be provided in	
, Para 8	the template provided at Annex 2 for the period 2000-2009	
	and then updated annually.	
	*Note: WCPFC11 confirmed a common understanding that	
	"total catch" in this reporting requirement refers to both	
	targeted and bycatch catches of swordfish.	
	AUDIT POINT [RP] The Secretariat confirms that the CCM	
	submitted the required information contained in the	
	template in Annex 2 of CMM in its AR Pt 1.	
Observer	CCMs are to compile and include in Annual Report Part 1 to	Activities of the
coverage	be submitted from 2015 onwards, observer coverage for their	PNG longline
(WCPFC	longline fleet activity in the previous calendar year, noting	vessels is
11 decision	that revisions can be provided at the annual TCC meeting.	exclusive to
– para		national waters.
484(b)		No ROP trips

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⁷ Reporting requirements requested by CMMs and decisions of the Commission, as of WCPFC19 (Dec 2022). First issued on 23 March 2023. Changes made from Addendum for 2021, include including the new CMM 2022-02 for North Pacific Swordfish and **WCPFC19 Agreed Audit Points.**

A sample report format is provided as guidance to assist were therefore CCMs with reporting implemented. (WCPFC11 Summary Report Attachment L Table 4) CCM Fleet Fishery Total REPUBLIC OF Distant-water CCMs shall report on all transhipment activities covered by this Measure (including transhipment activities that occur in There were ports or EEZs) as part of their Annual Report in accordance transshipment with the guidelines at Annex II. In doing so, CCMs shall take activities carried all reasonable steps to validate and where possible, correct out in the 4 PNG information received from vessels undertaking transhipment domestic ports in using all available information such as catch and effort data, the year 2022. position data, observer reports and port monitoring data. A combined total of 498,798 mt of WCPFC15 Outcome document para 48: The Commission agreed to the TCC14 recommendation that the template tuna was provided in TCC14-2018-RP03 Annex 3 be used by all transshipped by applicable CCMs for their future reporting in Annual Report both PG National Part 1, as per CMM 2009-06 paragraph 11 (Attachment O of and Foreign purse WCPFC15). seine vessels in Annex 3 of RP03: Transhipment information to be the year 2022 provided annually by CCMs as required by CMM 2009inside the PNG 06 paragraph 11 in accordance with the guidelines in domestic ports. Annex II of the measure. Each CCM shall include in Part 1 of its Annual Report to the A combined total Commission: of 1,487 mt of tuna was (1) the **total quantities**, by weight, of highly migratory fish transshipped by stocks covered by this measure that were transhipped by the PG National fishing vessels the CCM is responsible for reporting against, LL fleet in a **CMM** with those quantities broken down by: designated 2009-06 d) caught domestic port in [Transship Fishin offloade transhipped transhipped inside Specie Produ ment], Para PNG in the year d and inside the in port, g gear received transhipped Convention Conventi Form 2022. **11 (ANNEX** at sea in Area and on Area II) areas of transshippe and d outside caught national Refer to Table A1 jurisdiction. outside and A2 for more Convention the transhipped Area: Conventi information. beyond on Area; areas of national iurisdiction

offloade

fishing vessels the CCM is responsible for reporting

against, with those quantities broken down by:

a. offloaded and received;

- b. transhipped in port, transhipped at sea in areas of national jurisdiction, and transhipped beyond areas of national jurisdiction;
- c. transhipped inside the Convention Area and transshipped outside the Convention Area;
- d. caught inside the Convention Area and caught outside the Convention Area;
- e. species;
- f. product form; and
- g. fishing gear used
- (2) the number of transhipments involving highly migratory fish stocks covered by this measure by fishing vessels that is responsible for reporting against, broken down by:
 - a. offloaded and received;
 - b. transhipped in port, transhipped at sea in areas of national jurisdiction, and transhipped beyond areas of national jurisdiction;
 - c. transhipped inside the Convention Area and transhipped outside the Convention Area;
 - d. caught inside the Convention Area and caught outside the Convention Area; and
 - e. fishing gear.

CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5

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).

AUDIT POINT [RP] Secretariat confirms that CCM submitted a report on instances in which cetaceans have been encircled by the purse seine nets of flagged vessels and as reported in ARPt1 under para 2(b) of CMM.

A total of 10 counts of cetaceans from 7 species had been reported as either interacting with the purse seine fishing in 2022.

Refer to Table A3 for more information.

Table A1. Estimated quantity (mt) of tuna transshipped by National Fleet (PNG flag & chartered vessels) inside PNG ports in 2021. Report from the national Catch Documentation Scheme (CDS).

a) Offloaded and received;	b) Transshipped in domestic port (quantity in metric tons)	c) Transshipped in pacific island port inside the Convention Area (quantity in metric tons);	d) Tuna caught inside the Convention Area	e) Species	f) Product Form	g) Fishing gear
Offloading	289,677	Nill	Reefer to Table 6	SKJ	Frozen	PS
by Foreign	50,427	Nill	Reefer to Table 6	YFT	Frozen	PS
Bilateral	3,377	Nill	Reefer to Table 6	BET	Frozen	PS
Vessels	-	Nill	Reefer to Table 6	ALB	-	PS
Offloading	102,524	Nill	Reefer to Table 1b	SKJ	Frozen	PS
by PNG National	51,987	Nill	Reefer to Table 1b	YFT	Frozen	PS
National -	798	Nill	Reefer to Table 1b	BET	Frozen	PS
Vessels	-	Nill	Reefer to Table 1b	ALB	-	PS
Offloading	5	Nill	Refer to Table 1a	SKJ	Frozen	LL
by PNG National	1,112	Nill	Refer to Table 1a	YFT	Frozen	LL
ivational - LL	128	Nill	Refer to Table 1a	BET	Frozen	LL
Vessels	247	Nill	Refer to Table 1a	ALB	Frozen	LL

Note: Offloading and Transshipment information segregated into the vessels from the PNG National Fleet and those from Foreign Bilateral.

Table A2. Estimated number of transshipments by PNG National Fleet in 2021. Report from national Catch Documents Scheme (CDS).

Offloaded	No. of transshipmen t in domestic port	No. of transshipped in pacific island country ports inside the convention area	Caught inside the convention area	Fishin g gear
Offloading by Foreign Bilateral PS Vessels	460	-	Refer to Table 6	PS
Offloading by PNG National PS vessels	332	-	Refer to Table 1b	PS
Offloading by PNG National LL vessels	17	-	Refer to Table 1a	LL

Table A3. Estimated number and species of cetacean interacted with purse seine gear in 2022. Report from observer data.

Flag	Date	Lat	Lon	EEZ	Species	Number	Fate
PG	25/01/2022	0643.000S	15219.000E	PG	BOTTLENOSE DOLPHIN		Released
PG	08/05/2022	0012.286S	14429.986E	PG	ROUGH-TOOTHED DOLPHIN	1	Released
PG	13/01/2022	0405.820S	15623.940E	PG	RISSO'S DOLPHIN		Released
PG	04/06/2022	0143.360S	14620.246E	PG	BRYDE'S WHALE	1	Released
PG	17/11/2022	0211.983S	15130.983E	PG	FALSE KILLER WHALE	1	Released
PG	22/04/2022	0241.483S	15314.760E	PG	BLAINVILLE'S BEAKED WHALE	1	Released
PG	01/08/2022	0303.719S	14427.479E	PG	BOTTLENOSE DOLPHIN	3	Released
PG	25/07/2022	0702.329S	15223.280E	PG	FALSE KILLER WHALE		Released
PG	13/07/2022	0403.238S	14852.246E	PG	COMMON DOLPHIN		Released
PG	23/08/2022	0411S	14753E	PG	BRYDE'S WHALE	2	Released
PG	13/09/2022	0334.459S	15042.400E	PG	FALSE KILLER WHALE	1	Released

<u>SECTION B:</u> ADDITIONAL ANNUAL REPORTING REQUIREMENTS THAT COULD BE INCLUDED IN ANNUAL REPORT PART 1, IF NOT OTHERWISE REPORTED ANNUALLY TO WCPFC

ANNUALL	Y TO WCPFC	
CMM 2006-04 [South West striped Marlin], Para 4	In accordance with paragraph 1, CCMs shall provide information to the Commission, by 1 July 2007, on the number of their vessels that have fished for striped marlin in the Convention area south of 15°S, during the period 2000 – 2004, and in doing so, nominate the maximum number of vessels that shall continue to be permitted to fish for striped marlin in the area south of 15°S. CCMs shall report annually to the Commission the catch levels of their fishing vessels that have taken striped marlin as a bycatch as well as the number and catch levels of vessels fishing for striped marlin in the Convention Area south of 15°S. AUDIT POINT [RP] The Secretariat confirms that the CCM submitted in its ARPt1: a. the number of its flagged vessels that fished for MLS south of 15S between 2001-2004 and has nominated the maximum number of its flagged vessels that are permitted to continue to fish for MLS south of 15S b. the catch levels of CCM flagged vessels that have taken MLS as a bycatch the number and catch levels of its vessels fishing for MLS	There was no reported catch of South-west striped marlin by PNG-flagged vessels in 2022.
CMM 2015-02 [South Pacific Albacore] Para 4	CCMs shall report annually to the Commission the annual catch levels taken by each of their fishing vessels that has taken South Pacific albacore, as well as the number of vessels actively fishing for South Pacific albacore, in the Convention area south of 20°S. Catch by vessel shall be reported according to the following species groups: albacore tuna, bigeye tuna, yellowfin tuna, swordfish, other billfish, and sharks. Initially this information will be provided for the period 2006-2014 and then updated annually. CCMs are encouraged to provide data from periods prior to these dates. AUDIT POINT [RP] The Secretariat confirms that the CCM submitted information on annual catch levels by its flagged vessels taking SP Albacore, as well as the number of CCM flagged vessels actively fishing for SP Albacore south of 20S, with catch levels reported by species groups.	There were no PNG Fishing vessels' operations in the area south of 20° S in the year 2022.

CMM 2019-03 [North Pacific Albacore], Para 3	All CCMs shall report annually to the WCPFC Commission all catches of albacore north of the equator and all fishing effort north of the equator in fisheries directed at albacore. The reports for both catch and fishing effort shall be made by gear type. Catches shall be reported in terms of weight. Fishing effort shall be reported in terms of the most relevant measures for a given gear type, including at a minimum for all gear types, the number of vessel-days fished using the template provided in Annex 1. Annex 1: Annex								
CMM 2022-02 [North Pacific Swordfis h], para 4	All CCMs shall report annually to the WCPFC Commission all catches of North Pacific swordfish in the Area and all fishing effort in those fisheries subject to the measures in paragraph 2, by gear type using the template provided in Annex 1. Note: CMM 2022-02 paragraph 3 clarifies that paragraphs 2 and 4 shall not be applied to those fisheries taking less than 200 metric tons of North Pacific swordfish in the Area per year. However, if the catches of such fisheries exceed 200 metric tons in any given year, the Commission shall adopt appropriate management measure for such fisheries. Annex 1. Average annual fishing effort for 2008-2010 and annual fishing effort for subsequent years for fisheries taking swordfish. Annex 1. Average annual fishing effort for 2008-2010 and annual fishing effort for subsequent years for fisheries taking swordfish.								

Table B. Annual Fishing catch and effort for North Pacific Albacore in the area north of the Equator in the last 5 five years.

Year	CCM	Flag	Gear	Vessel No.	Vessel_Days	Sp.No.	SpCMt
2022	PG	PG	LL	1	5	2	0.037
2021	PG	PG	LL	-	-	-	-
2020	PG	PG	LL	-	-	-	-
2019	PG	PG	LL	1	97	2,169	51.594
2018	PG	PG	LL	-	-	-	-