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ANNUAL REPORT TO THE COMMISSION

PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

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PAPUA NEW GUINEA

Western and Central Pacific Fisheries Commission
11th Regular Session of the Scientific Committee

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PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS, 2014.

PAPUA NEW GUINEA

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Port Moresby, PNG.

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 2015	**YES**

Summary

The Papua New Guinea (PNG) tuna fishery is made up of both the purse-seine and longline sectors with a small handline sector. The longline and handline sector is a citizen - only activity and all vessels fish exclusively in the waters under PNG national jurisdiction. The purse-seine sector is a mix of both domestic and foreign access vessels. The domestic sector comprises the PNG flag vessels and PNG chartered vessels (locally-based foreign) which support processing facilities onshore in PNG. While the PNG flagged vessels fish primarily in PNG waters, the chartered vessels fish both in PNG waters and waters outside of PNG. Foreign vessels under access arrangements fish in PNG EEZ whenever there is fish to catch.

Total catch estimate in 2014 within PNG waters was 297,178.82 mt, a significant drop from the 2012 estimate of 515,106.06 mt. Most of the fish were caught by purse seiners with a catch contribution of 188,111.54 mt by foreign vessels that fish under access arrangements, 63,789.32 mt by PNG chartered vessels (locally based foreign) and 44,171.85 mt by the PNG flag vessels. Only a total estimate of 1,106.12 mt was from the tuna longline vessels. Catches by PNG Flag vessels were mostly inside PNG waters, however, an increased catch of 10,599.01 mt outside of PNG waters was observed in 2014. The catch by PNG chartered vessels outside of PNG waters was 96,643 mt and was taken mainly in the waters of the other PNA member countries.

A total of 203 vessels were active in the PNG waters in 2014. Twenty three (10) were longline (excluding shark longline vessels) and 193 were purse-seine vessels. Thirteen (13) of the 193 purse seiners were PNG flagged with an estimated effort of 2,944 days; 42 were PNG chartered with 4,532 days; and 138 were foreign access vessels with 8,907 days fishing and searching in PNG waters. Estimated effort by tuna longline vessels in 2013 was 16,520 hundred hooks.

PNG still continues to improve its catch and effort data coverage for all fleets. Introduction of electronic reporting systems will help enhance this endeavor. For size and species composition data, a port sampling program conducted annually as well as an observer program that covers the vessels based out of PNG and foreign vessels fishing the PNG waters. The growing national observer program aims to improve observer coverage on all vessels.

PNG is striving towards building its fishing industry; therefore fishing licenses are linked to onshore investment. At full capacity PNG is looking to processing all fish caught in PNG waters, back in PNG. The rights to fish in PNG are also linked to onshore investment.

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1. 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 (702,969 mt). The longline fishery started even earlier than the purse-seine fishery, originally only as access by foreign fleets. But in the mid-1990s a policy on domestication enabled the fishery to be a national activity only, hence doing away with access by foreign fleets.

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 licence 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 licence fees and allowing them to fish within archipelagic waters or sponsoring them to fish under the Federated States of Micronesia Arrangement (FSMA).

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 include licence limits, 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 important regional and sub-regional arrangements such as the Parties to the Nauru Agreement (PNA), whose requirements are incorporated in the National Tuna Management and Development Plan**.**

2. Flag State Reporting

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

2.1 Purse Seine

PNG manages a purse seine fleet made up of two categories; domestic vessels which are PNG flagged vessels and Locally-Based Foreign (LBF) vessels which are foreign flagged and whose

activities is governed by charter arrangements with locally based companies. These vessels support onshore processing plants in the country.

2.1.1 Domestic - PNG Flag Vessels

The total estimated catch by PNG flag vessels in 2014 was 54,770.86 mt which was a significant increase from 2013 estimates of 38,419 mt and also higher than 2012 estimates of 46,085.78 mt (Table 1). The highest increase was seen in SKJ catches from 21,519.96 mt in 2013 to 28,929.38 mt in 2014 inside PNG waters and from 1,053.96 mt in 2013 to 10,5529 mt in 2014 outside of PNG waters.

Although, fishing activities by these vessels occur mostly in PNG waters there was increased catch outside of PNG with 10,599.0 mt in 2014 as more PNG flag vessels are now fishing other PNA waters under the FSMA arrangement. The number of active vessels has been steadily increasing from 6 vessels in 2006 (Figure1). Thirteen (13) vessels were active in 2014 with a total effort of 3,392 days spent fishing and searching in the WCPFC convention area. Effort by these vessels has also been increasing since 2006 from 642 estimated fishing days. Figure 2 shows the distribution of catch and effort by the domestic purse seine vessels in the WCPFC convention area.

Table 1: Annual catch estimates (mt) for domestic purse seine vessels (PNG Flag) inside and outside of the PNG waters.

Species	Fishing Area	Catch (mt) / Year					
		2010	2011	2012	2013	2014	Average
SKJ	PNG	15,305.38	18,365.10	27,933.51	21,519.95	28,929.38	*22,410.66*
	Outside PNG	0.57		79.04	1,053.96	9529.07	*2,665.66*
YFT	PNG	12,498.85	8,311.98	16,774.67	14,786.95	14,846.28	*13,443.75*
	Outside PNG	0.21		33.60	403.59	1023.68	*365.27*
BET	PNG	97.32	37.50	752.02	416.94	279.35	*316.63*
	Outside PNG					46	*46.00*
OTH	PNG	69.91	155.25	512.94	237.12	116.843	*218.41*
	Outside PNG	0.06			1.8	0.26	*0.71*
TOTAL	PNG	**27,971.46**	**26,869.82**	**45,973.14**	**36,960.09**	**44,171.85**	***36,389.27***
	Outside PNG	**0.84**	**-**	**112.64**	**1,459.35**	**10,599.01**	***3,042.96***
WCPFC CA Total		**27,972.30**	**26,869.82**	**46,085.78**	**38,419.44**	**54,770.86**	***38,823.64***

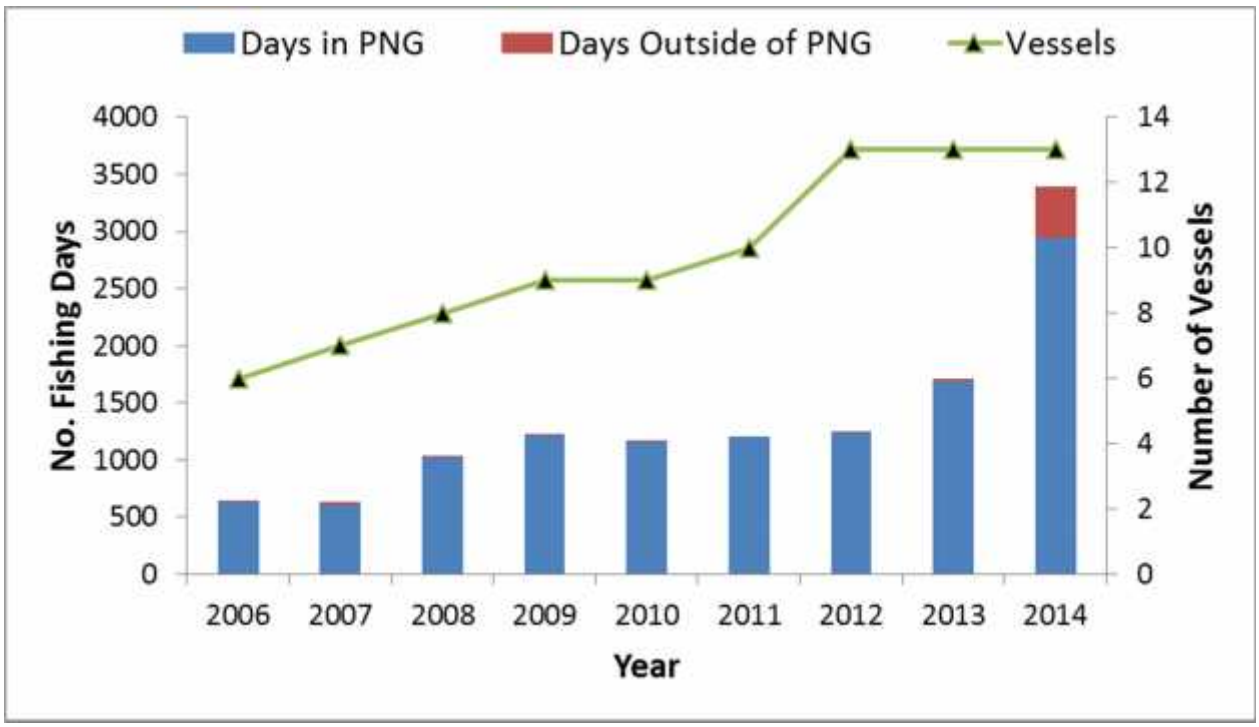

Figure 1: Distribution of fishing effort (number of fishing days) inside and outside of PNG EEZ by domestic purse seine vessels (PNG Flag) and the number of active vessels from 2006 – 2014.

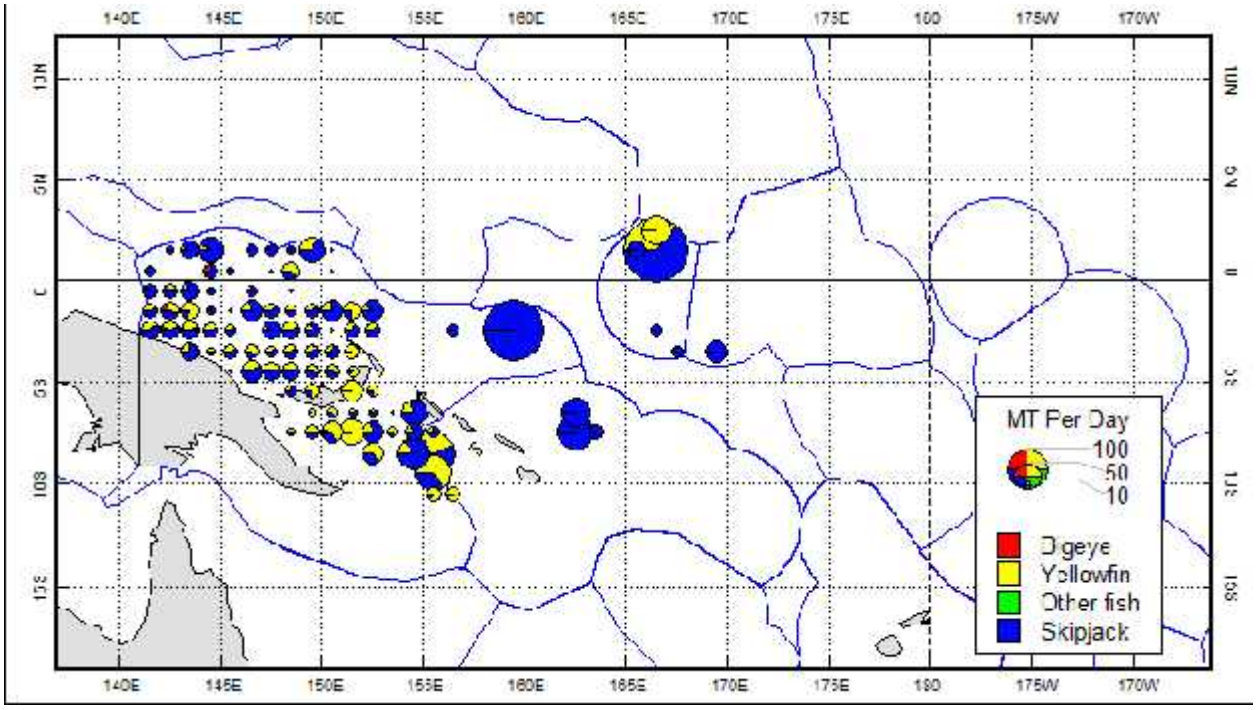

Figure 2: Catch and effort distribution (mt per day) by domestic purse seine vessels in the WCPFC convention area in 2013. Data source: SPC.

2.1.2 Locally-Based Foreign Vessels – Foreign Flag

The 2014 overall catch estimates by locally-based foreign vessels in the WCPFC convention area was 160,433.05 mt (Table 2) which was a moderate reduction from 2013 estimates of 188,642.09 mt in 2013. The average total catch in the five years was 176,198.69 mt with highest of 193,124.12 mt recorded in 2012. Although the overall effort increased slightly from 7,284 fishing days in 2013 (Figure 3), the 2014 catches were the lowest recorded in the recent five years with higher catches (96,643.73 mt) outside of PNG waters than inside PNG waters (63,789.32 mt) like previous years.

Locally-based foreign vessels are owned or chartered by locally based companies and fish in PNG waters and about half of the vessels also fish in waters of other PNA member countries under the FSM Arrangement. A total of 42 vessels were actively fishing in 2014 under this category with a total of 8,045 days fishing and searching (Figure 3). Most of the fishing days were spent in PNG waters but there was an increase in effort outside of PNG waters unlike previous years. Figure 4 shows the distribution of catch and effort by these purse seine vessels in the WCPFC convention area.

Table 2: Annual catch estimates (mt) for locally based foreign vessels (Foreign Flag) inside and outside of the PNG EEZ.

Species	Fishing Area	Catch (mt)					
		2010	2011	2012	2013	2014	*Average*
SKJ	PNG	84,198.79	97,387.41	80,601.81	79,889.73	44,718.81	*77,359.31*
	Outside PNG	52,793.80	44,888.10	65,418.00	66,393.50	87,866.10	*63,471.90*
YFT	PNG	29,337.94	23,406.18	28,638.16	27,741.33	18,643.01	*25,553.32*
	Outside PNG	10,414.40	4,400.70	12,910.55	7,348.50	7,412.80	*8,497.39*
BET	PNG	351.64	188.97	274.95	287.15	334.31	*287.40*
	Outside PNG	185.20	279.10	223.81	266.2	694.40	*329.74*
OTH	PNG	579.77	1,333.02	5,018.09	6601.88	93.19	*2,725.19*
	Outside PNG	3.63	5.38	38.75	113.79	670.43	*166.40*
TOTAL	**PNG**	**114,468.14**	**122,315.58**	**114,533.01**	**114,520.10**	**63,789.32**	***105,925.23***
	Outside PNG	**63,397.03**	**49,573.28**	**78,591.11**	**74,121.99**	**96,643.73**	***72,465.43***
WCPFC CA Total		**177,865.17**	**171,888.86**	**193,124.12**	**188,642.09**	**160,433.05**	***178,390.66***

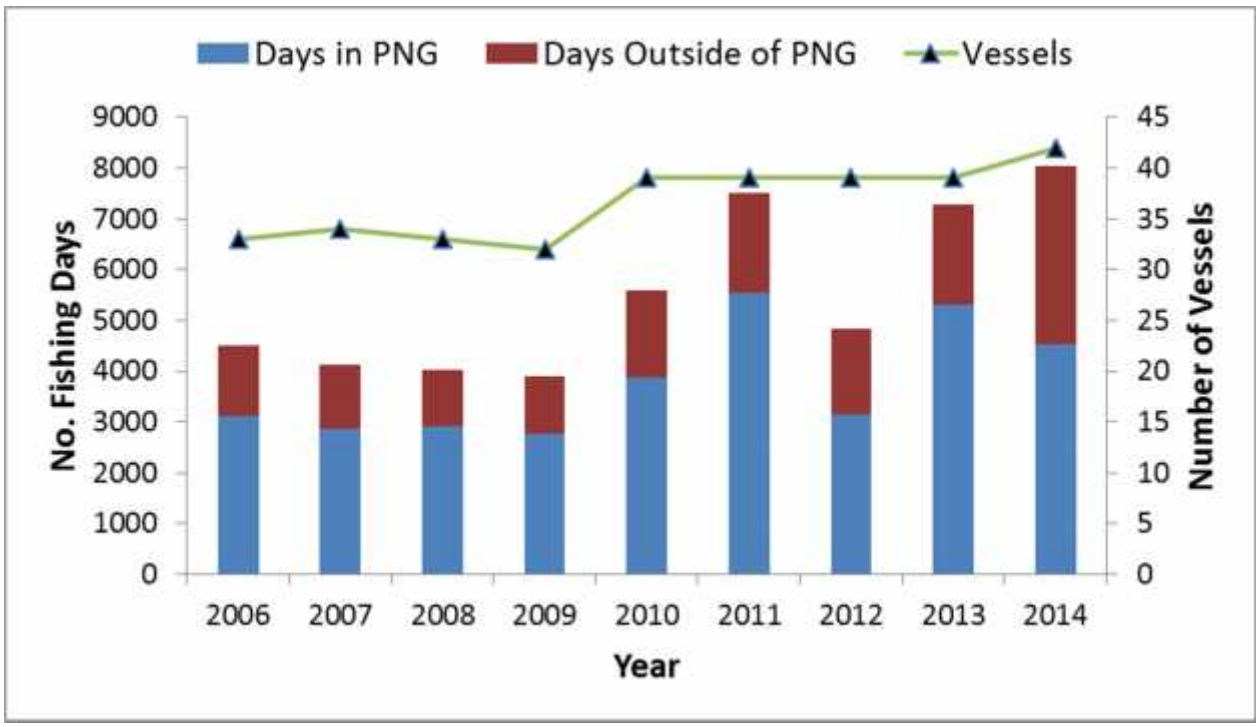

Figure 3: Distribution of fishing effort inside and outside the PNG EEZ by locally-based foreign vessels from 2006-2014.

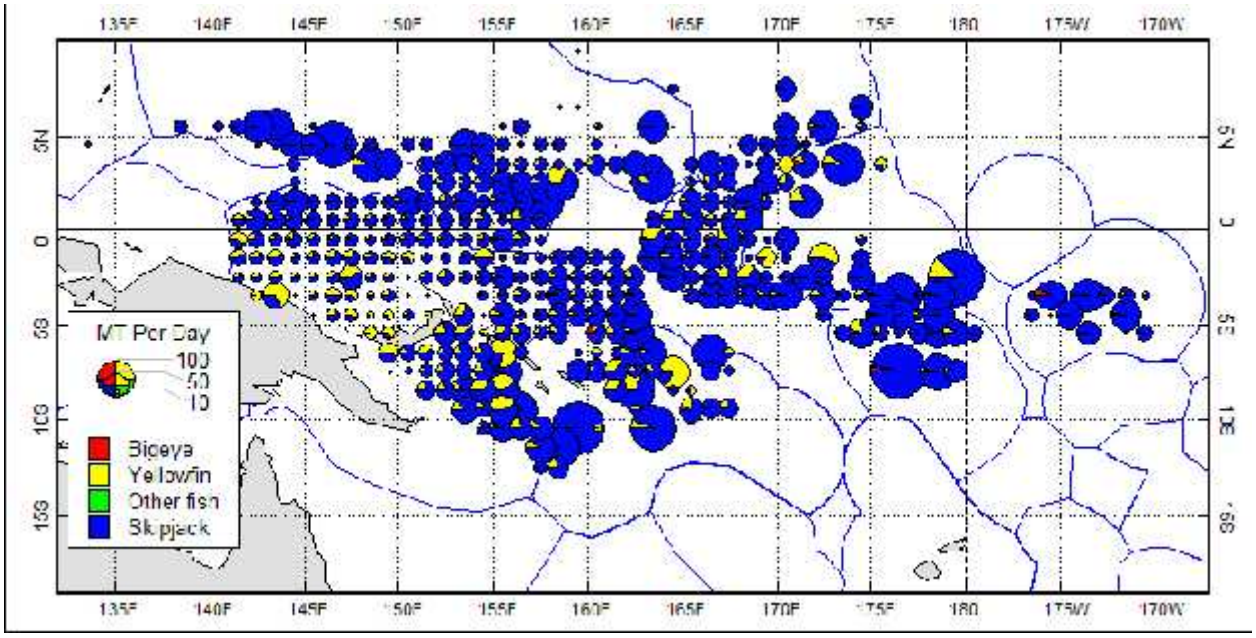

Figure 4: Catch and effort distribution (mt per day) by locally-based foreign vessels in the WCPFC Convention area in 2013. Data source: SPC

2.2 Domestic Tuna Longline

The target catches by tuna longline vessels in PNG waters are dominated by yellowfin tuna with an average of 1451.37 mt in the last five years (2010-2014), followed by albacore (415.99 mt) and bigeye (34.32 mt). Billfishes that are caught by this fishery as bycatch are mainly blue marlin, swordfish black marlin and striped marlin. Total sharks species also make up a significant amount of the catch with an average of 126.58 mt. The overall estimated catch in 2014 was 1,106.12 mt which is the lowest in the recent five-year period with an estimated effort of 16,520 hundred hooks which is also the lowest.

The low catch and effort is due to a reduced number of tuna longline vessels from 27 active vessels in 2012 to 10 active vessels in 2014 (Figure 5). The high cost of goods and services such as fuel and shipping still proves to be a challenge in longline operations. Moreover, 7 vessels lost their license to fish in PNG waters after the first quarter of 2013 as a result of their company's failure to meet licensing conditions and more vessels have gone for repairs in the 2014 fishing period. Figure 6 shows the distribution of catch and effort by domestic tuna longline vessels in the WCPFC convention area. The main fishing area stretches from the Solomon Sea down to the Coral Sea and east of the Gulf of Papua, inside national waters. These areas have been exempted from FAD deployment mainly to avoid gear conflicts between longliners and purse seiners.

Table 3: Annual catch estimates (mt) of primary species and effort estimate (hundred hooks) for PNG domestic tuna longline fleet in PNG waters.

Year		2010	2011	2012	2013	2014	Average
Effort HHooks		*64,453*	*64,761*	*70,100*	*30,073*	*16,520*	*49,181*
Catch (mt) / Species	Yellowfin	2059.76	1787.37	1976.63	846.41	586.70	1451.37
	Bigeye	40.95	50.48	67.22	4.25	8.70	34.32
	Blue Marlin	99.42	125.22	114.99	68.50	36.41	88.91
	Black Marlin	27.11	10.13	24.44	21.82	9.45	18.59
	Skipjack	0.40	6.22	1.03	0.11	0.02	1.56
	Albacore	887.53	260.94	524.65	220.13	186.70	415.99
	Swordfish	44.42	44.39	60.11	35.29	19.36	40.71
	Striped Marlin	9.96	8.11	5.83	0.44	5.04	5.88
	Sharks Total	137.21	102.17	76.41	114.82	202.27	126.58
	Others	195.20	260.82	252.34	118.68	51.46	175.70
	Total	**3,501.95**	**2,655.83**	**3,103.66**	**1,430.45**	**1,106.12**	**2,359.60**

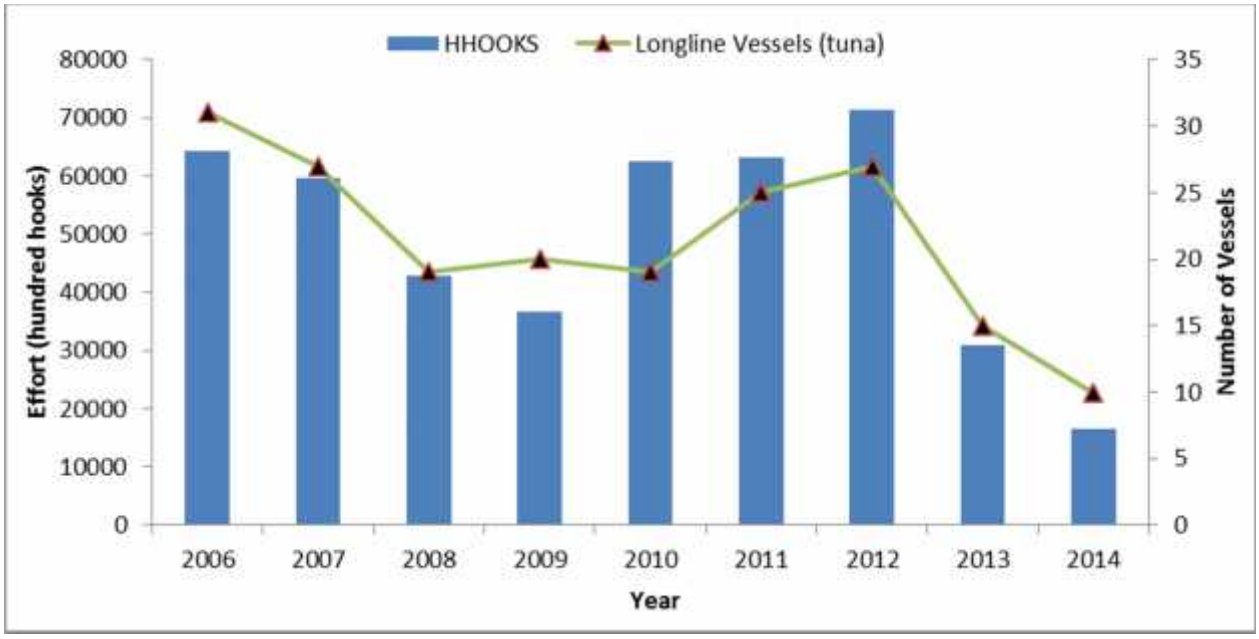

Figure 5: Shows the number of hooks deployed by domestic tuna longline vessels and the number of active vessels fishing in PNG waters from 2006-2013. Estimates for 2013 are provisional.

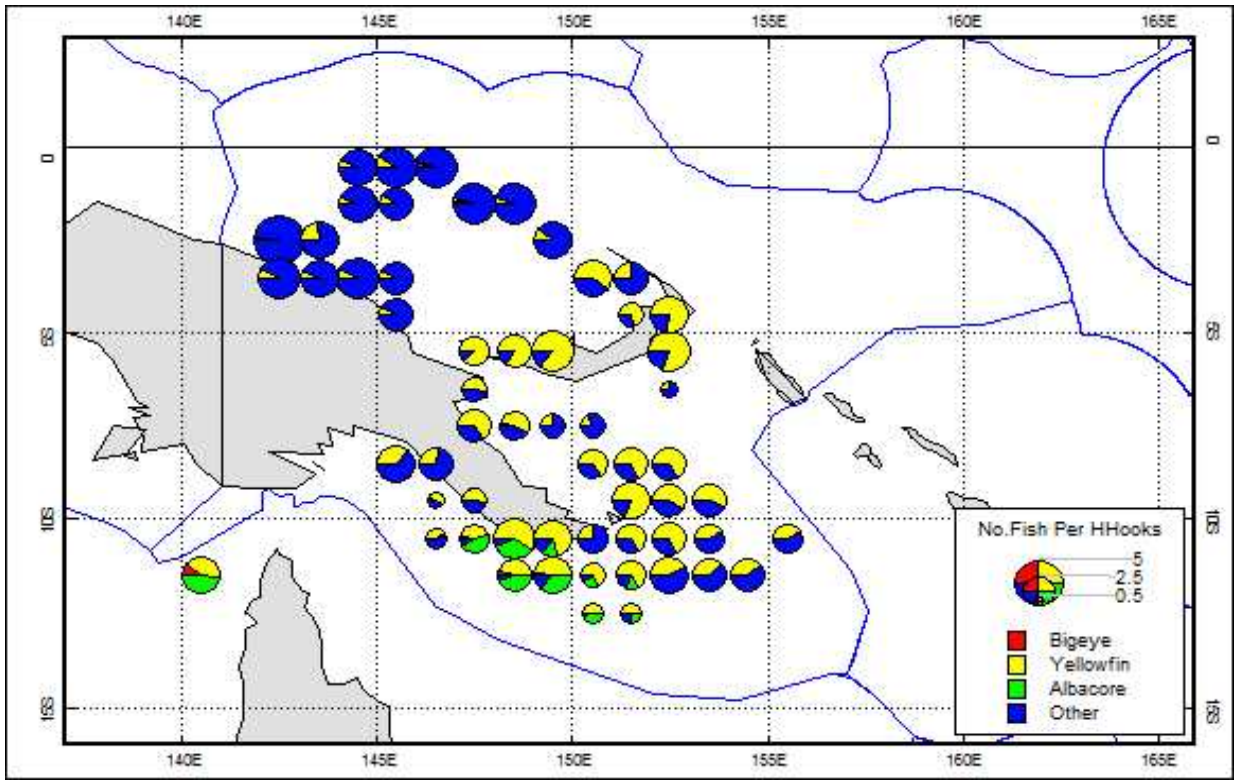

Figure 6: Catch and effort distribution (number of fish per hundred hooks) by domestic tuna longline vessels in the WCPFC convention area in 2013. Data Source: SPC

3. Coastal State Reporting

This section reports activities in national waters by foreign fleets which comprise of tuna purse seine vessels. Activities of a domestic shark longline and a very small handline fishery are also reported in this section since all their activities are inside PNG waters.

3.1 Purse Seine - Foreign Vessels

Foreign vessels that fish in PNG waters are mainly purse-seiners and are licensed under the conditions of access agreements between PNG and their company, fishing association or home party state and also include 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 365,270.13 mt. As shown in table 4 below, the estimated total catch is in decline since the 2010 high of 560,530.39 mt. Estimated catch decreased further significantly from 362,195.42 mt in 2013 to 188,111.54 mt in 2014. Catch composition is typical of all purse seine fleet fishing in PNG waters with SKJ and YFT making up most of the catch.

Relative to total catches, there was also a gradual decline in fishing effort from 15,796 days in 2010 to 14,980 days in 2013. A significant reduction in effort was observed in 2014 with an estimated 8,907 fishing days due to the very low numbers of foreign vessels (138) actively fishing in PNG waters. (Figure 7).

Table 4: Catch and effort (fishing days) estimates for foreign purse seiners fishing in PNG waters from 2010-2014.

Year	*Fishing Days*	Catch (mt) / Species				
		SKJ	YFT	BET	OTH	Total
2010	*15,796*	417,035.90	135,979.36	7,365.61	149.52	**560,530.39**
2011	*14,648*	340,949.81	83,235.98	3,044.20	439.67	**427,669.66**
2012	*14,498*	286,641.98	66,979.76	3,392.88	829.04	**357,843.66**
2013	*14,980*	287,764.42	71,030.03	2,976.67	424.3	**362,195.42**
2014	*8,907*	134,352.38	51,033.07	2,291.83	434.26	**188,111.54**
Average	***13,766***	***293,348.90***	***81,651.64***	***3,814.24***	***455.36***	***365,270.13***

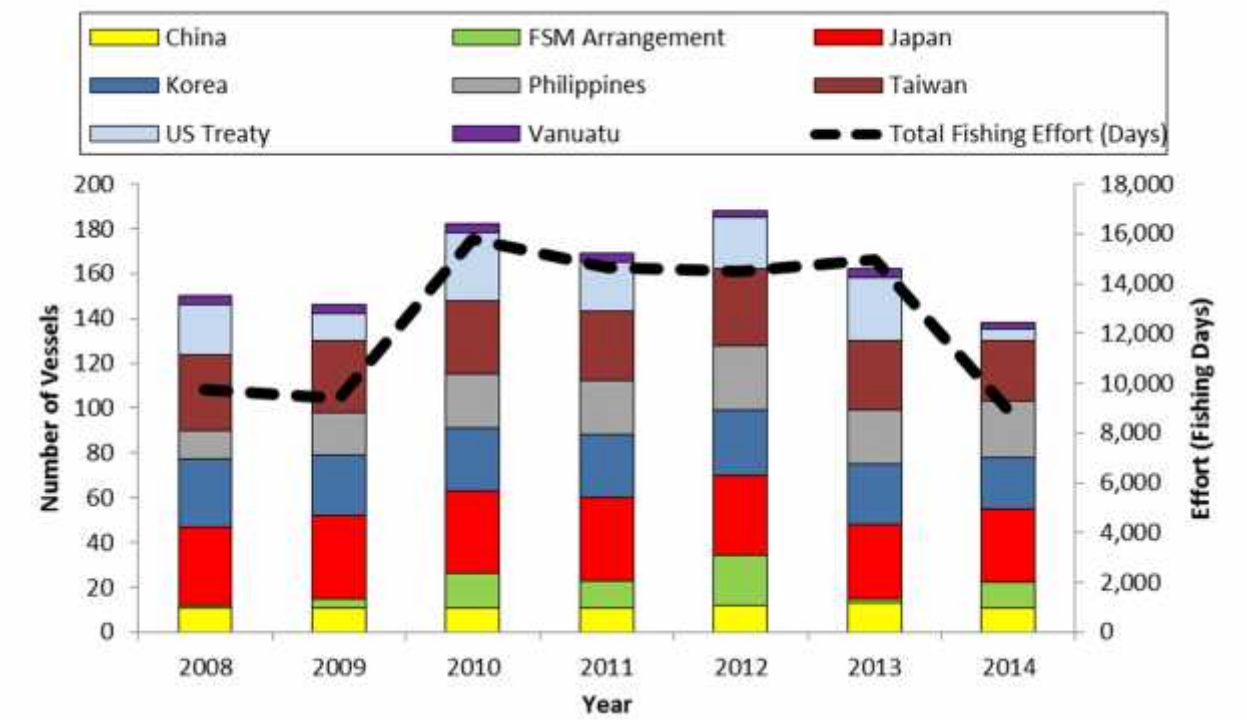

Figure 7: Estimated number of vessels and fishing days for the foreign purse seine fleet actively fishing in PNG waters in 2008-2014.

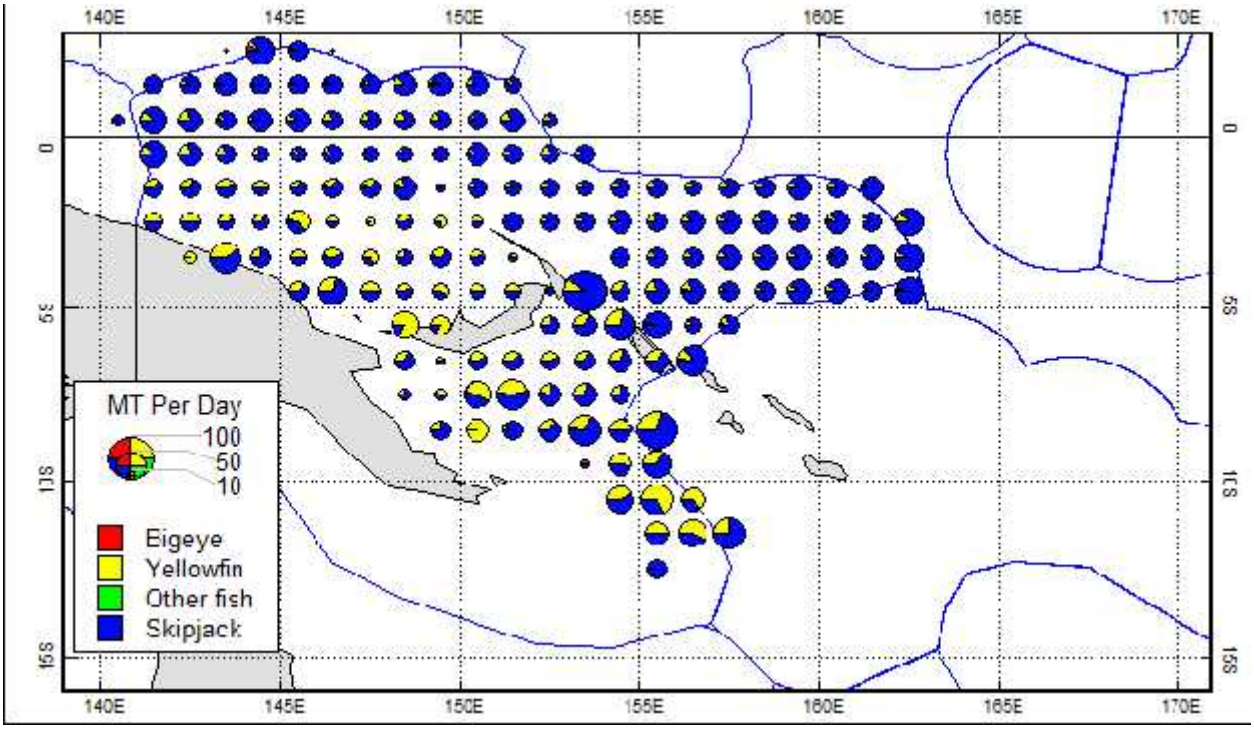

Figure 8: Catch and effort distribution (mt per day) by foreign vessels in PNG waters in 2013. Data source: SPC.

3.2 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. Figure 9 and 10 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 the last 5 years was 1,344.26 mt with 1011.47 mt being shark catches alone (Table 5).

Table 5: 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: NFA.

	Year	2010	2011	2012	2013	2014	Average
	Effort (HHooks)	*22,790*	*27,934*	*20,817*	*16,367*	*6,129*	*18,808*
Catch (mt)	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
	Shark Unidentified	71.72	80.25	52.65	54.61	22.60	56.37
	SHARK TOTAL	**1,119.90**	**1,479.66**	**1,045.64**	**932.65**	**479.48**	**1,011.47**
	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	65.90	35.16	28.69	9.98	36.72
	Striped Marlin	0.99	1.23	1.69	1.13	0.65	1.14
	Swordfish	49.30	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**

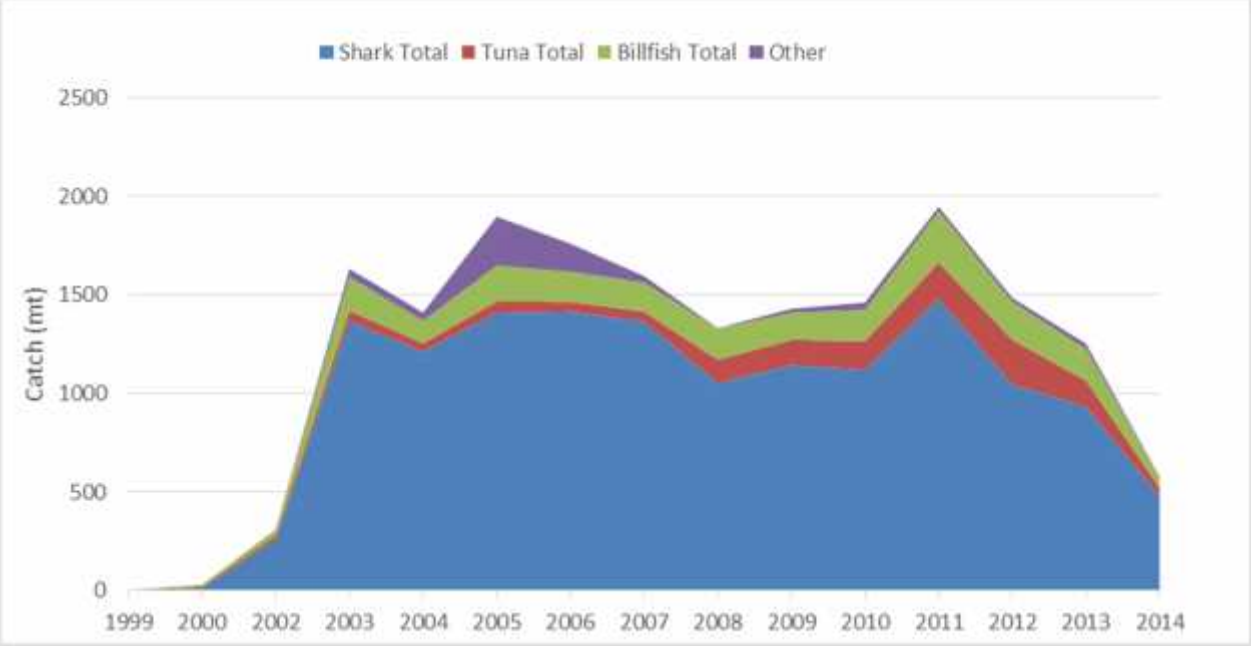

Figure 9: Catch estimate by shark longline vessels. Data source: NFA

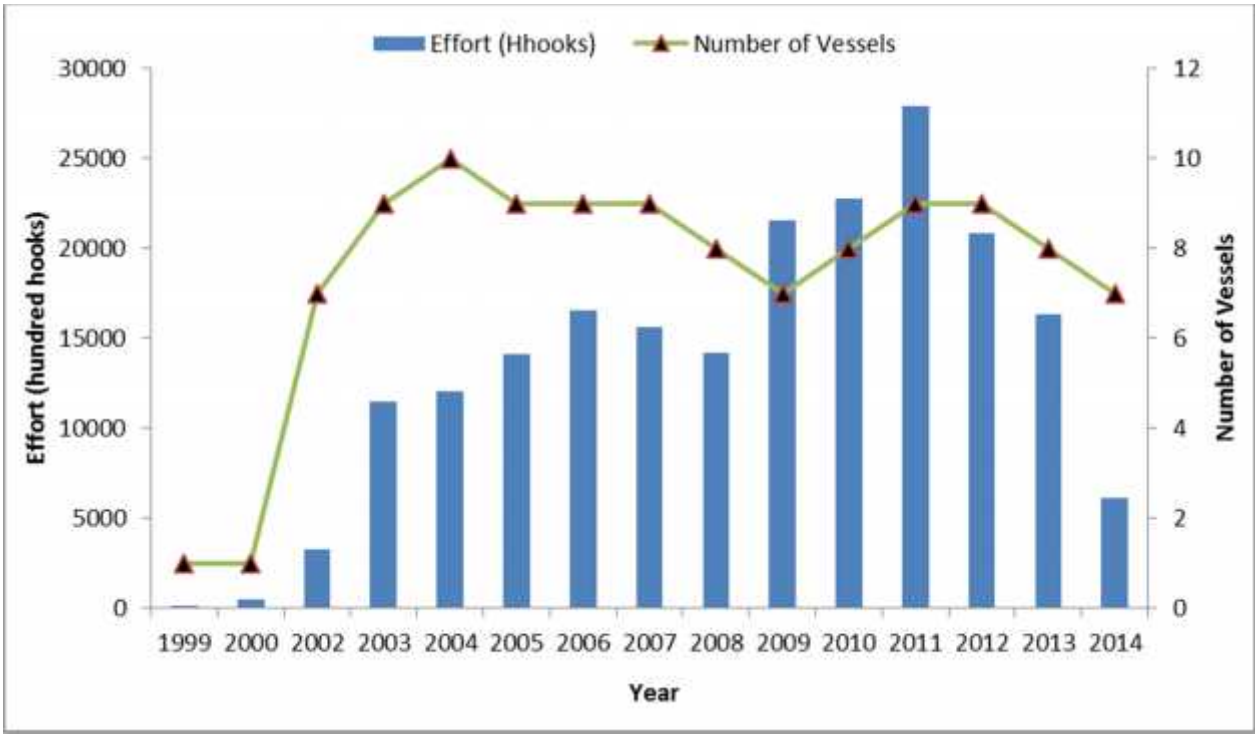

Figure 10: Effort estimates (hhooks) and the number of shark longline vessels. Data source: NFA

3.3 Handline

Since the trial of handline fishery in 2005, the number of pumpboats reduced from 10 to 5 vessels in 2009 (Kumoru, 2010). Although there is 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. Currently, the small handline fleet of about 5 vessels is operating in waters around Madang and Morobe provinces. The vessels are solely owned and operated by local fishermen. Catch by these vessels, which do not normally exceed 10 mt (estimate) per year, is sold to processing companies as well as local supermarkets.

4. Socio – Economic Factors

Papua New Guinea is focused on building its domestic tuna industry to an extent where the generated revenue can offset that currently obtained from bilateral access fees. The government's main objective is to maximize the benefits from tuna resource to citizens and promote the involvement of nationals in the industry. A growth in the industry would provide an increase in employment opportunities, increased foreign exchange earnings for the country and direct and indirect spin-off benefits among other benefits of value-adding the tuna resources. Currently, the industry supports almost 7,000 people in direct employment and almost 2,000 indirect employments in the country of over 6 million people. New commitments and investments would triple these figures (See Section 7 on onshore developments).

5. Exports

The quantity of exports in the domestic industry have been steadily increasing since the 90's to over 100,000 mt of processed products in 2012 and 2013 (Figure 11). In relation, the value of exports have also been increasing to over USD270 million in 2012. The total value estimated in 2014 was around USD218 million. This growth is in line with the country's industry development aspirations.

Most of the export products are canned and frozen tuna (Figure 12). The quantity of canned tuna exports have been increasing with more fish processed onshore and the trend is likely to continue as more processing facilities are being developed in the country.

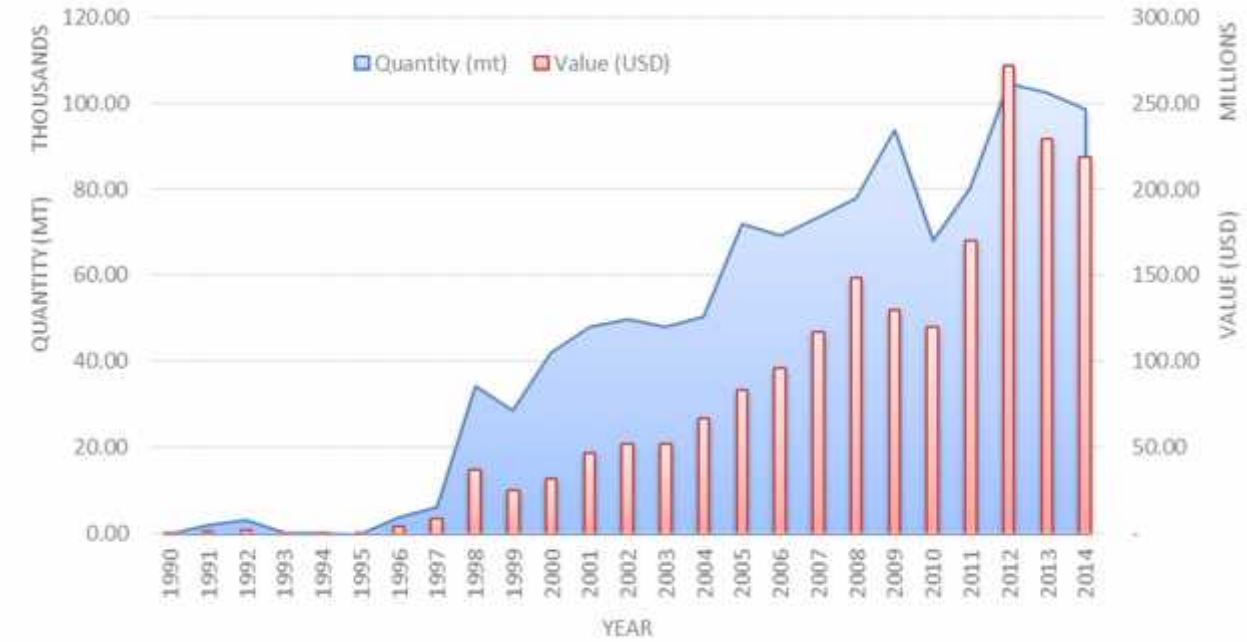

Figure 11: Quantity (mt) and value (USD) of processed tuna export products by domestic companies. Data source: NFA

Figure 12: Quantity of exports by processed product type. Data source: NFA

6. Onshore Developments

In 2013 another major tuna canning facility commenced operations in Lae with estimated capacity of producing 350 metric tonnes per day. Majestic Seafood is a joint venture between

Frabelle (who also has its own canning facility in Lae as well) and two other new companies. The current number of major existing onshore tuna processing facilities is now five with an estimated total production capacity of 930 metric tonnes per day of canned, cooked loins and raw tuna (Table 7a). The other major companies include RD Tuna Canners, South Sea Tuna Corporation (SSTC) and International Food Corporation (IFC). All these existing facilities provide approximately 11,200 and 3,300 in direct and indirectly employment respectively.

There are still plans to increase downstream processing in the country. Two other investment projects are currently in progress (Table 7b) to produce canned tuna and loins. These investments are in line with the country's development aspirations and aiming at processing all catches in PNG waters onshore.

Table a: Existing onshore facilities

Investors	Product type	Production Capacity (mt/day)	Employment (est.)	
			Direct	Indirect
RD Tuna Canners	Canned tuna	200	3,500	500
Frabelle(PNG) Ltd	Canned tuna	140	1,000	500
Frabelle Frescomar	Raw tuna	40	200	100
South Seas Tuna Corporation	Cooked loins,canned tuna	100	1,000	200
International Food Corporation	Canned tuna	100	1,000	500
Majestic Seafood	Canned tuna	350	4,500	1500
	Total	**930**	**11,200**	**3,300**

Table7b: Future onshore facilities

Investors	Product Type	Production Capacity (mt/day)	Est. Investment Value (USD'm)	Local Employment (est.)	
				Direct	Indirect
RD/Fairwell	Canned tuna	200	27.5	2,000	500
Chinese Investments	Canned tuna/cooked loins	-	-	-	-
	Total	**200**	**28**	**2,000**	**500**

7. Future Prospects of the Fishery

7.1 Longline

Longline fishery has declined over the years and is not likely to expand in the near future unless there some major change in the current policy controlling this particular fishery. The main reason for the decline is the high operational cost.

7.2 Handline

Although very minimal at this stage, this fishery has some potential for expansion in the not too distant future. The processing plants are supporting this sector through the supply of ice and buying of the fish.

7.3 Purse-seine

Effort in terms of fishing days is capped as per the commission measure 2008-01. However in PNG there would be a re-alignment or shift in the vessels fishing as those vessels not associated with any onshore facility are given less priority over those associated with onshore development. This may mean new vessels into PNG waters provided they are associated with onshore development. If this happens than, some vessels currently licensed but not associated with onshore facilities will no longer be licensed to fish within the waters of PNG.

8. Tuna Fishery Data Collection System and Research Activities

8.1 Log sheet data collection and verification

8.1.1 Catch, Effort and Size Data Coverage

Fleets have been very cooperative in submitting catch and effort data as per the catch logsheet. As a result there has been very high coverage of the catch and effort data. For size data, PNG runs a port sampling programme through which size data by species are collected in addition to those data collected by observers at sea. However the port sampling covers mostly vessels fishing in PNG waters and unloading or transhipping through PNG ports. For vessels not unloading or transhipping through PNG ports, size data is collected through the observer programme. For coverage explanations see attachment A.

8.1.2 Electronic Data Reporting

An electronic data reporting system have been developed, trialed and implemented in 2014 for purse seine vessels fishing in PNG waters. This system is a web-based application that allows

vessels to send their logsheets and other catch information electronically in near real-time. Most vessels are already using the e-forms to send their data. Electronic reporting for observer, CDS and Port Sampling data have also been developed and currently used by fisheries officers in the ports and on fishing vessels.

8.2 Observer program

The number of observers in PNG was over 250 in 2014. The program aims to train up to 400 observers by the next 3-4 years. The observer training is now a component of the training run by the PNG National Fisheries College. The training courses run four times a year for two months each session.

8.3 Port Sampling Program

PNG port sampling program on purse seine catches is still being conducted in the main unloading and transhipment ports around the county. With the aim of covering an estimated 20-25% of the catch weight unloaded or transhipped, a well is stratified into layers and a number of nets are being sampled based on the gross weight of the catch in the well. Fork lengths of all fish in the net are measured and fish indentified to species level by trained port samplers. Various reports of the program were presented in SC 6 session in 2010. During 2013, port sampling was conducted in three major tuna ports, Lae, Madang and Wewak. A total 1,120,148 SKJ, 369,982 BET, and 53,723 Bycatch species were sampled from a total of 73 purse seine and carriers that either landed or transhipped their catch in the ports.

8.4 PNG Tuna Tagging Project

The PNG Tuna Tagging Project was conducted in the PNG waters in collaboration with the Secretariat of the Pacific Community (SPC) under the umbrella of SPC's Pacific Tuna Tagging Program (PTTP). This initiative is aimed to improve monitoring of tuna stocks and their exploitation, and obtaining additional data over a longer time frame to be used in regular tuna stock assessments in which specific estimates for PNG EEZ can be obtained. The project was planned for three years from 2011 to 2013 in which 3 months of tag release cruise in PNG waters was conducted in the first year and 2 month cruises in 2012 and 2013. An overall total of 110,501 conventional tags were released with an estimated recovery rate of approximately 20%.

Other key areas of the project includes the implementation of tag recovery procedures in major PNG and other unloading sites; data quality checking and integration of the data into the SPC tagging database; analysis of the data to generate scientific advice for the management of tuna fisheries in PNG; and capacity building within the NFA in the above areas.

9. References

Kumoru, L.2010. Annual Report to the Commission, Part 1: Information of Fisheries, Research and Statistics, WCPFC-SC6-AR/CCM18.

10. ADDENDUM – CMM REPORTING

Specific information as required by CMMs.

CMM Reference	Description	Response
CMM 2005-03 [North Pacific Albacore], Para 4	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.* [* footnote 1: The first such report shall be due on April 30th, 2006 and shall cover calendar year 2004. Small Island Developing States will make their best efforts to comply with this first reporting deadline.] ** Note: WCPFC10 clarified that this reporting responsibility lies with the flag State*	There were no catches and effort directed at Albacore north of the equator by PNG vessels in 2013 and 2014.
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.	Not applicable. There were no PNG vessels fishing south of 15°S.
CMM 2007-04 [Seabirds], Para 9	CCMs shall annually provide to the Commission, in part 1 of their annual reports, all available information on interactions with seabirds, including bycatches and details of species, to enable the Scientific Committee to estimate seabird mortality in all fisheries to which the WCPF Convention applies.	There were no seabird interactions by PNG vessels in 2013 and 2014

CMM Reference	Description	Response
	Note: CMM 2007-04 was in effect until the end of June 2014. On 1 July 2014, CMM 2012-07 replaced 07-04	
CMM 2009-03 [Swordfish], Para 8	CCMs shall report to the Commission the total number of vessels that fished for swordfish and the total catch of swordfish for the following: a. vessels flying their flag anywhere in the Convention Area south of 20°S other than vessels operating under charter, lease or other similar mechanism as part of the domestic fishery of another CCM; b. vessels operating under charter, lease or other similar mechanism as part of their domestic fishery south of 20°S; and c. any other vessels fishing within their waters south of 20°S. This information shall be provided in Part 1of each CCM's annual report. Initially, this information will be provided in the template provided at Annex 2 for the period 2000-2009 and then updated annually. 1 Reporting requirements requested by CMMs and decisions by the Commission, as of WCPFC 11 **Note: WCPFC11 confirmed a common understanding that "total catch" in this* *reporting requirement refers to both targeted and bycatch catches of swordfish.*	Not applicable. There were no PNG vessels fishing south of 20°S.
CMM 2009-06 [Transshipment], Para 11 (ANNEX II)	CCMs shall report on all transhipment activities covered by this Measure (including transhipment activities that occur in ports or EEZs) as part of their Annual Report in accordance with the guidelines at Annex II. In doing so, CCMs shall take all reasonable steps to validate and where possible, correct information received from vessels undertaking transhipment using all available information such as catch and effort data, position data, observer reports and port monitoring data. ANNEX II TRANSHIPMENT INFORMATION TO BE REPORTED ANNUALLY BY CCMs Each CCM shall include in Part 1 of its Annual Report to the Commission:	Refer to Table 1 of this addendum for 2014 provisional estimates.

CMM Reference	Description	Response
	(1) the total quantities, by weight, of highly migratory fish stocks covered by this measure that were transhipped by 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 2010-05 [South Pacific albacore], Para 4	CCMs shall report annually to the Commission the catch levels of their fishing vessels that have taken South Pacific Albacore as a bycatch as well as the number and catch levels of vessels actively fishing for South Pacific albacore in the Convention area south of 20°S. Initially this information will be provided for the period 2006-2010 and then updated annually.	Not applicable. There were no PNG vessels fishing south of 20°S during the period 2006-2010 and years after this period till current.
CMM 2010-07	Each CCM shall include key shark species*, as identified by the Scientific	Refer to Table 2 of this

CMM Reference	Description	Response
[Sharks], Para 4	Committee, in their annual reporting to the Commission of annual catch and fishing effort statistics by gear type, including available historical data, in accordance with the WCPF Convention and agreed reporting procedures. … *footnote 2: The key shark species are blue shark, silky shark, oceanic whitetip shark, mako sharks, and thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate) and hammerhead sharks (winghead, scalloped, great, and smooth). **Note*; Whale Sharks (*Rhincodon typus*) was included as a key shark species by WCPFC9 (2012) *** Note also; para 4 is under the resolve part of the CMM* ***Commencing in reports that cover activities post-1 January 2013***	addendum for 2014 estimates.
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).	Refer to Table 3 of this addendum for 2014 estimates.
CMM 2011-04 [Oceanic whitetip sharks], Para 3	CCMs shall estimate, through data collected from observer programs and other means, the number of releases of oceanic whitetip shark, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports. ***Commencing in reports that cover activities post-1 January 2014***	Refer to Table 4 of this addendum for 2014 estimates.
CMM 2012-04 [Whale sharks], Para 06	CCMs shall advise in their Part 1 Annual Report of any instances in which whale sharks have been encircled by the purse seine nets of their flagged vessels, including details required under paragraph 4(b). ***Commencing in reports that cover activities post-1 July 2014***	Refer to Table 5 of this addendum for 2014 estimates.
CMM 2012-07 [Seabirds], Para 9	CCMs shall annually provide to the Commission, in Part 1 of their annual reports, all available information on interactions with seabirds reported or	There were no seabird interactions in 2013 and 2014

CMM Reference	Description	Response
	collected by observers, including mitigation used, observed and reported species specific seabird bycatch rates and numbers, to enable the Scientific Committee to estimate seabird mortality in all fisheries to which the WCPF Convention applies. See Annex 2 for Part 1 reporting template guideline. Alternatively, statistically rigorous estimates of species-specific seabird interaction rates (for longline, interactions per 1,000 hooks) and total numbers should be reported.	fishing period.
CMM 2013-08 [Silky sharks], Para 3	CCMs shall estimate, through data collected from observer programs and other means, the number of releases of silky shark caught in the Convention Area, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports.	Refer to Table 6 of this addendum for 2014 estimates.
Observer coverage (WCPFC 11 decision – para 484(b)	CCMs are expected to include in Annual Report Part 1 their reported longline observer coverage for the 2014 calendar year.	No ROP trips in 2014.

Table 1: Estimates for transhipment and landings by the National Fleet.

		BET (MT)			SKJ (MT)			YFT (MT)			Total (MT)		
		Frozen	Fresh	Other	Frozen	Fresh	Other	Frozen	Fresh	Other	Frozen	Fresh	Other
Offloaded and received	**PG**	443.58			44853.82			17752.1			63049.5		
Transhipped in Port	**PG**	613.40	-		185,726.89	-		43,822.98	-		13,817.22	-	
	Other Ports in the Convention Area												
	Ports Outside Convention Area												
Transhipped at Sea	**PG**	-	-		-	-		-	-		-	-	
	Other areas in the convention area												
	Outside Convention Area												

Table 2. Estimates of sharks catches by gear and species in 2014.

Gear	Species	Number	Retained	Discarded	Finned and trunk Retained	Finned but Trunk Discarded
Purse Seine	BIGEYE THRESHER SHARK	8	0	8	0	0
Purse Seine	BIGNOSE SHARK	1	0	1	0	1
Purse Seine	BLACKTIP REEF SHARK	9	0	9	0	0
Purse Seine	BLACKTIP SHARK	51	0	51	0	11
Purse Seine	BLUE SHARK	3	0	3	0	0
Purse Seine	BROADSNOUTED SEVENGILL SHARK	2	0	2	0	0
Purse Seine	BRONZE WHALER SHARK	50	3	47	0	1
Purse Seine	BULL SHARK	2	0	2	0	0
Purse Seine	CHILEAN DEVIL RAY	1	0	1	0	0
Purse Seine	Devil Manta Ray (Mobula nei)	505	34	471	0	0
Purse Seine	DUSKY SHARK	12	7	5	0	0
Purse Seine	GALAPAGOS SHARK	23	14	9	14	0
Purse Seine	Giant manta	475	23	452	0	0
Purse Seine	GREAT HAMMERHEAD	3	0	3	0	1
Purse Seine	GREAT WHITE SHARK	1	0	1	0	1
Purse Seine	HAMMERHEAD SHARKS	2	0	2	0	1
Purse Seine	LONG FINNED MAKO SHARK	1	0	1	0	1
Purse Seine	MANTA RAYS (UNIDENTIFIED)	247	1	246	0	0
Purse Seine	OCEANIC WHITE-TIP SHARK	80	7	73	3	10
Purse Seine	PELAGIC STING-RAY	155	18	136	0	0
Purse Seine	PELAGIC THRESHER SHARK	7	0	7	0	1
Purse Seine	REMORA (SHARKSUCKER)	1	0	1	0	0
Purse Seine	SANDBAR SHARK	6	0	6	0	0
Purse Seine	SCALLOPED HAMMERHEAD	5	0	5	0	1
Purse Seine	SHARKS (UNIDENTIFIED)	1	0	1	0	0

Purse Seine	SHORT FINNED MAKO SHARK	4	1	3	0	0
Purse Seine	SILKY SHARK	16783	559	16222	201	2781
Purse Seine	SILVER-TIP SHARK	5	0	5	0	0
Purse Seine	SMOOTH HAMMERHEAD	2	0	2	0	0
Purse Seine	Spinetail mobula	9	0	9	0	0
Purse Seine	THRESHER SHARK (VULPINAS)	4	0	4	0	0
Purse Seine	TIGER SHARK	2	0	2	0	0
Purse Seine	WHALE SHARK	147	0	145	0	0
Longline	BIGEYE THRESHER SHARK	118	98	19	48	16
Longline	BIGNOSE SHARK	2	1	1	1	1
Longline	BLACKTIP REEF SHARK	13	13	0	13	0
Longline	BLACKTIP SHARK	429	429	0	428	0
Longline	BLUE SHARK	66	59	7	48	6
Longline	BRONZE WHALER SHARK	104	98	6	97	2
Longline	BULL SHARK	3	3	0	3	0
Longline	CROCODILE SHARK	4	0	4	0	0
Longline	Devil Manta Ray (Mobula nei)	10	1	8	0	0
Longline	GALAPAGOS SHARK	57	57	0	57	0
Longline	GREAT HAMMERHEAD	10	10	0	10	0
Longline	GREAT WHITE SHARK	2	2	0	2	0
Longline	GREY REEF SHARK	97	97	0	96	0
Longline	LONG FINNED MAKO SHARK	16	13	3	8	2
Longline	OCEANIC WHITE-TIP SHARK	286	279	7	252	5
Longline	PELAGIC STING-RAY	16	1	15	1	0
Longline	PELAGIC THRESHER SHARK	27	16	11	1	11
Longline	SANDBAR SHARK	36	36	0	36	0
Longline	SCALLOPED HAMMERHEAD	230	228	1	193	0
Longline	SCHOOL SHARK	1	1	0	1	0
Longline	SHORT FINNED MAKO SHARK	52	51	1	50	0
Longline	SILKY SHARK	13892	12573	1309	11991	645

Longline	SILVER-TIP SHARK	120	116	4	111	0
Longline	SMOOTH HAMMERHEAD	18	17	0	13	0
Longline	THRESHER SHARK (VULPINAS)	10	7	3	2	3
Longline	TIGER SHARK	215	209	5	206	3
Longline	WHITE-TIP REEF SHARK	1	1	0	1	0

Table 3. Estimates of number of cetasean interactions with purse seine gear in 2014 from observer data.

Species	Date	Latitude	Longitude	EEZ	FATE	Number of Individuals
BOTTLENOSE DOLPHIN		0235.500S	15438.216E	PG	DPD	180
BOTTLENOSE DOLPHIN		0223.033S	14126.907E	PG	DPA	10
BOTTLENOSE DOLPHIN		0230.445S	16426.883E	NR	DPD	21
BOTTLENOSE DOLPHIN		0258.051S	14358.471E	PG	DUS	1
FRASER's DOLPHIN		0033.163S	14658.432E	PG	DUS	6
FALSE KILLER WHALE		0700.650S	15147.630E	PG	DPD	4
FALSE KILLER WHALE		0700.650S	15147.630E	PG	ESC	2
FALSE KILLER WHALE		0432.223S	15044.200E	PG	DPD	6
FALSE KILLER WHALE		0158.106N	16651.057E	NR	DPD	2
FALSE KILLER WHALE		0036.759N	16712.535E	NR	DPD	5
FALSE KILLER WHALE		0046.021S	14702.910E	PG	DPU	8
FALSE KILLER WHALE		0207.322S	14847.739E	PG	DPA	1
FALSE KILLER WHALE		0258.051S	14358.471E	PG	DUS	2
MINKE WHALE		0705.320S	14940.808E	PG	DPA	1
Rough-toothed dolphin		0234.518N	15444.370E	FM	DPD	5
Rough-toothed dolphin		0035.344S	14406.706E	PG	DPA	6
SPINNER DOLPHIN		0015.909S	14936.534E	PG	DPD	5
SPINNER DOLPHIN		0357.567S	14844.017E	PG	DPD	21
SPINNER DOLPHIN		0036.448S	15258.061E	PG	DPD	5
SPOTTED DOLPHINS		0105.765S	15051.062E	PG	DPD	1

Table 4: Estimates of the number of Oceanic White Tip Shark released dead or alive by gear type in 2014.

Gear	Alive	Dead	Total
Longline	12	69	**81**
Single Purse Seine	0	5	**5**
Total	**12**	**74**	**86**

Table 5: Estimates of the number of Whale Shark interaction with purse seine gear in 2014

Life Status	Number of Individuals
Released Alive	35
Released Dead	4
Unknown Condition	9

Table 6: Provisional estimates of the number of Silky Sharks released by gear in 2014

Gear	Alive	Dead	Unknown	Retained	Total
Longline	94	12	3	302	**411**
Purse Seine	2103	35	29	10	**2177**
Grand Total	**2197**	**47**	**32**	**312**	**2588**