SCIENTIFIC COMMITTEE
TWELFTH REGULAR SESSION

Bali, Indonesia
3-11 August 2016

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

WCPFC-SC12-AR/CCM-28
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VANUATU

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THE REPUBLIC OF VANUATU
FISHERIES DEPARTMENT

VANUATU

Scientific data was provided to the commission in accordance with the decision relating to the provision of scientific data to the commission by 30 April 2016	**YES**

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ABSTRACT

The major tuna species from the Foreign fishing vessels catch in the Vanuatu EEZ in 2015 was dominated by 74% of albacore, 21% of yellowfin, 3% of bigeye and lastly 2% for others species of the total catch. The decrease of catch in 2015 was due to the shift of effort to the Solomon Islands compared to 2014 which was much higher.

In the period 2011 – 2015 the annual catch estimates of the Vanuatu longline fleets in the WCPO have increased as did the fishing effort (sets) and number of fish per 100 hooks. This however is not the same for Purse seiners whose catch estimates have reduced as more of the Vanuatu Purse seine vessels reflagged to the US and PNG under the FSM arrangement, this is also evident through the reduction of Effort of the vessels.

For Purse seiners, there were more sets on unassociated than associated schools. The total catches for the purse seine fleets that fished in the WCPFC-CA decreased from to 20,514MT in 2014 to 8,433MT in 2015 and this has been the largest reduction since 2011. Purse seine catches in 2015 were dominated by skipjack (95%), then Yellowfin (5%) and lastly bigeye (0%).

Unraised and provisional 2015 data shows that catches of the main tuna species for Purse seines decreased from 19,285mt of skipjack in 2014 to 7,972mt in 2015. Longline however increased its catches from 6,581Mt in 2014 to 11,430Mt in 2015 for Albacore, however all other Tuna species caught in 2014 and compared to 2015 also increased. Yellowfin and Bigeye catches for the Purse seine fleets also reduced from 2014 to 2015.

Since 2010, Vanuatu accomplished 100% Observer coverage for the locally based foreign fishing vessels and 100% port sampling on all unloading of fresh fish and this 100% coverage also includes transshipment in port, however since 2014, there has been no Locally based vessels in operation thus port sampling and transshipment activities in port have ceased since, however with the commencement of the Fish processing plant in Port Vila, Chinese vessels who are licensed to fish in the VU EEZ will offload their catch in the Port Vila port and will then see the operation of port sampling and transshipment activities commencing again as of 2017.

ANNUAL FISHERIES INFORMATION

1. Background

The main commercial tuna and billfish species caught in the Vanuatu EEZ and by the Vanuatu fleet in the WCPFC consists of albacore (*Thunnus alalunga*), bigeye (*Thunnus obesus*), skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), black marlin (*Makaira indica*), blue marlin (*Makaira nigricans*), striped marlin (*Tetrapturus audax*) and swordfish (*Xiphias gladius*).

As part of Vanuatu's obligation to report the WCPFC CMMS's for key shark species, data have also been compiled, some of which are now covered in the longline fleet tables, these are blue shark (*Prionace glauca*), silky shark (*Carcharhinus falciformis*), oceanic whitetip shark (*Carcharhinus longimanus*) and mako shark (*Isurus spp*.). Catches of other shark species are not covered explicitly, and discards are not considered however they have been reported by Observers. The main industrial fishing methods employed in the Vanuatu EEZ has been dominated by the longline gear outside 24 miles however few Artisanal fishers fishing within the 12 miles around FAD's catch Skipjack and Yellowfin. Individual fleets presented herein cover vessels with high catch and effort data coverage and these are a few of Fiji and Taiwan vessels with the dominant flag being the Chinese flag vessels who are entirely based in Fiji and are fishing in Vanuatu under Foreign or Locally Based Foreign Licenses.

The report covers the fishing activities in the Vanuatu EEZ and operations of the Vanuatu flag vessels that were active in the WCPFC and other broad ocean area during the period 2011 to 2015. The report mainly focuses on the fleet structures, annual catch estimates and catch/effort distributions. The report also raises areas where new and further effort is required on the part of Vanuatu to enhance its role in contributing to the overall conservation and management of highly migratory stocks in the WCPFC area.
Most of the current presented data were obtained from the OFP/SPC database and were originally collected and verified by the Vanuatu Fisheries Data Management Unit (VFDMU). It should be noted that data provided for Vanuatu in this report and also from the past reports to the commission are from unraised log sheet data.

Vanuatu recognizes that there are critical data 'gaps' that need attention and focus on. Therefore, with the limitation of staffs and funds available, the department has been working closely with SPC and FFA to collect as much information and data as possible to enable us to fill in these gaps. We have establish designated ports for our Flagged Vessels however are yet to implement these as they will enable us to monitor landings of fish in foreign ports including the Suva, Levuka and Pagopago which are currently the ports mainly utilized in.

FLAG-STATE REPORTING

2. Information on Flag-state Reporting

Vanuatu is currently a member of IATTC, IOTC, SPRFMO, CCSBT and ICCAT and has ratified the WCPFC and SPRFMO and is intending to join CCAMLR in the near future. As part of the strengthening and effectively monitoring and controlling of our vessels, Vanuatu will be moving out of ICCAT and IOTC in December 2016. The membership of Vanuatu in these RFMOs has enabled Vanuatu's fishing fleet to fish these RFMO's waters for tuna and other highly migratory fish species. The Vanuatu fleet consists of 3 purse seiners that are under Bilateral Fishing Agreements and 74 long-liner fishing vessels which were active in WCPFC in 2015 which is a drop in number of Purse seiners from 2014 levels as well as a decrease in the number of Longliners from the 82 vessels in 2014.

The Vanuatu fleet consists of purse seine and longline vessels fishing between the Pacific, Indian and Atlantic Oceans. Fishing inside the Exclusive Economic Zones (EEZ) of coastal states had been possible by way of Bilateral Fishing Access (BFA) agreements particularly for long liners and sub-regional arrangements (FSM Arrangement) for purse seiners. Vanuatu currently operates a vessel registry, the Vanuatu International Shipping Registry (VISR). The VISR has recorded over 100^{+} registrations since 2014, and currently there is a total of 119 vessels on the registry. It is a requirement by law that all Vanuatu fishing vessels acquire an International Authorization to Fish Certificate (IATF) to operate in the high seas within the Pacific, Atlantic and Antarctic Ocean.

3. Catch and Effort Trends

The annual catch and effort estimates have been estimated for the Vanuatu fleet operating under bilateral arrangements with PNG and the FSM Arrangement, and the large scale longline vessels (LSLV) operating in the wider WCPFC Area. The general observation since 2014 was that there has been a variation in the 2015 annual catch and effort estimates for both the purse seine and the longline fleet.

The major tuna species for the Vanuatu longline fleet catch was dominated by albacore then bigeye and lastly yellowfin. Unraised and provisional estimates for the longline fleet in 2015 were 11,430 mt for albacore, 5,603 mt for bigeye and 2,097 mt for yellowfin respectively and these catch estimates were determined from logsheet data raised using information on actual vessel Activity (VMS data). During the period 2011-2015, the longline fleet recorded its highest

total annual catch estimate as 21,244 MT in 2015 (Table 1(a)). The longline fishery recorded the highest catches for albacore in 2010 being 12,293mt which is an increase from the 5,582mt in 2008 and 7,992mt in 2009.The highest catch for bigeye was in 2015 which is 5,603mt an increase from the 3,419mt in 2014. Yellowfin catches also showed an increase in catch from 2009 (514mt) and 2012 (2,229.9mt) but was reduced in 2013 (1,626.2mt) and again a slight increase in 2014 to 1,626mt and then the largest in 2015 which was 2,097Mt. Albacore was the dominant species in the catch for 2015 followed by bigeye and yellowfin. Effort for the longline fishery has reduced evidently between the 2013 to 2014 period but has increase from 2014 to 2015 and this was measured by the number of hooks fished as can be seen in Figure 2)a)ii).

The purse seine fleet that operated under bilateral arrangements recorded a decrease in total catch from 2014 levels which was 20,514mt to 8,344Mt in 2015 (Table 1(b)). The effort in the total number of sets had also decreased from this period. This reduction was caused by the reflagging of vessels to PNG and US under the FSM arrangement. During this period, the main tuna species in the catch had decreased also with a reduction of 11,313Mt from 2014 levels, this is also the same for the other two species for Bigeye and Yellowfin.
The purse seine fleets were mainly operating within the 5 degrees N and 5 degrees S and between 150 degrees E and 175 degrees W. The effort in the purse seine fishery is measured as days fishing and searching, Figures 2)b)ii) shows the effort distributions of purse seine vessels that operated under the bilateral agreements.

The longline effort is given as 100s of hooks. The longline efforts are distributed between 40 degrees North and 40 degrees south. This implies that both the southern and northern albacore stocks were targeted. However, there was more effort experienced in the south i.e between 10 degrees S and 40 degrees S with a strong concentration in the Vanuatu EEZ in 2013 but this effort has reduced tremendously in 2014 then increased thereafter in 2015 as cans be seen in the Figure 2)a)ii) where more effort is seen accumulating around the EEZs of Tuvalu and Kiribati.

The catch and effort data coverage for the Vanuatu fleet are high, but the size data coverages are uncertain as most of these vessels are landing their catch elsewhere and this would mostly be corroborated by the observers and port samplers in whose jurisdictions catch may have been landed or transshipped. The inferences for high, medium, and low scores for the catch/effort, and size data coverage, are provided in Appendix II. A high score for catch or effort implies that more than 80% of the data had been covered and question marks indicate that there was no data coverage.

Estimated Annual total catches of non-target, associated and dependent species by the Vanuatu purse seine fleets and long-line fleets in 2011-2015 has been sought from the TUBS reporting web database as shown in Table 3 and 4 as well as in Annex 1 where there is a summary table for all CMM's concerned.

Appendix 1 summary tables also provide information on the observed species of interest collected through observer reports for the year 2015 as most of the Observer records were collected by the PNG and FSM observers therefore Vanuatu in collaboration with PNG has been successful in meeting 100% observer coverage on its purse seine vessels that are fishing under the FSM Arrangement and Bilateral arrangements with PNG. SPC has confirmed that this information have been collected by observers in other jurisdictions on vessels that were operating in their waters and has been submitted to the WCPFC, SPC or FFA.

Table 1(a). 2015 Annual catch estimates for the Vanuatu Offshore Longline Fleet in the WCPFC Convention Area for Tuna and Billfish species.

Year	Albacore Catch (MT)	Yellowfin Catch (MT)	Bigeye Catch (MT)	Skipjack Catch (MT)	Pacific Bluefin Catch (MT)	Black Marlin Catch (MT)	Blue Marlin Catch (MT)	Striped Marlin Catch (MT)	Sword fish Catch (MT)	Total
2011	8,059	1,269	1,809	0	0.623	11	195	67	170	3,521.63
2012	8300	2,229	2,150	0.6	0	18.3	436.6	71.1	176.7	13,382.6
2013	10446	1,626	1,989	166.2	0	18.5	544.6	104.6	344.6	15,239.5
2014	6,581	1,695	3,419	134	0	27	493	77	368	12,794
2015	11430	2097	5603	186	0	74	736	179	939	21,244

Notes:

- *2013-2015 catch estimates were derived from the eRecap and th Tufman reporting web tool; DORADO where logsheet coverage for 2015 is 87%.*

Table 1(b). 2015 Annual catch estimates for the National Purse seine Fleet in the WCPFC-CA for Tuna and Billfish species.

Year	Skipjack Catch (MT)	Yellowfin Catch (MT)	Bigeye Catch (MT)	Total (MT)
2011	18,105	4,133	1,144	23,382
2012	17,876	6,151	806	24,853
2013	16,482	2,983	634	20,099
2014	19,285	896	333	20,514
2015	7,972	371.8	0	8,344

Notes:

1. 2013-2015 catch estimates are based on estimates derived from the eRecap and the DORADO tool with logsheet coverage for 2015 ~85%
2. Estimates also apply to the WCPO Area (the Pacific Ocean west of 150°W)
3. Catches do not include Vanuatu-flagged vessels that fish the FSM Arrangement vessels with HOME PARTY = PNG

Table 1 (c) i). 2015 Annual catch estimates for the National (Offshore) Fleet in the WCPFC-CA for Shark species.

Species	2015 (MT)
BLUE SHARK	776.65
SILKY SHARK	23.18
MAKO SHARK	102.49

Note:

- *Catch estimates were derived from the eRecap and the Tufman reporting web tool; where logsheet coverage for 2015 is 87%.*

Figure 1(a) Historical Annual Catch and Effort estimates for the National Longline Fleet within the WCPFC-CA

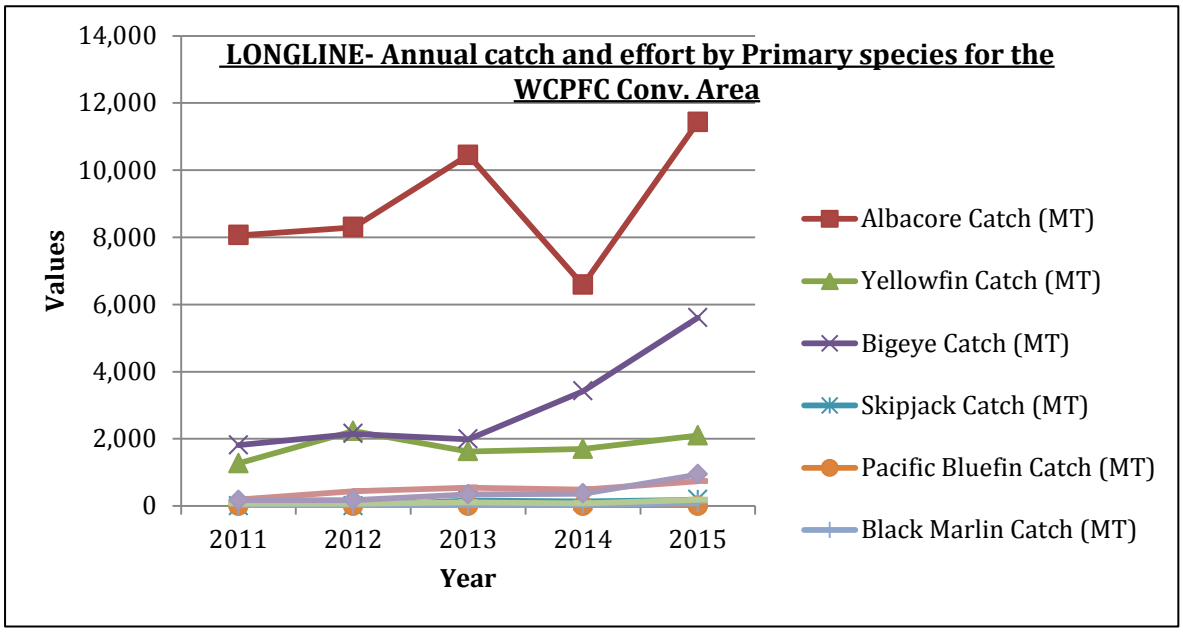


Figure 1(b) Historical Annual Catch and Effort estimates for the National Purse seine Fleet within the WCPFC-CA

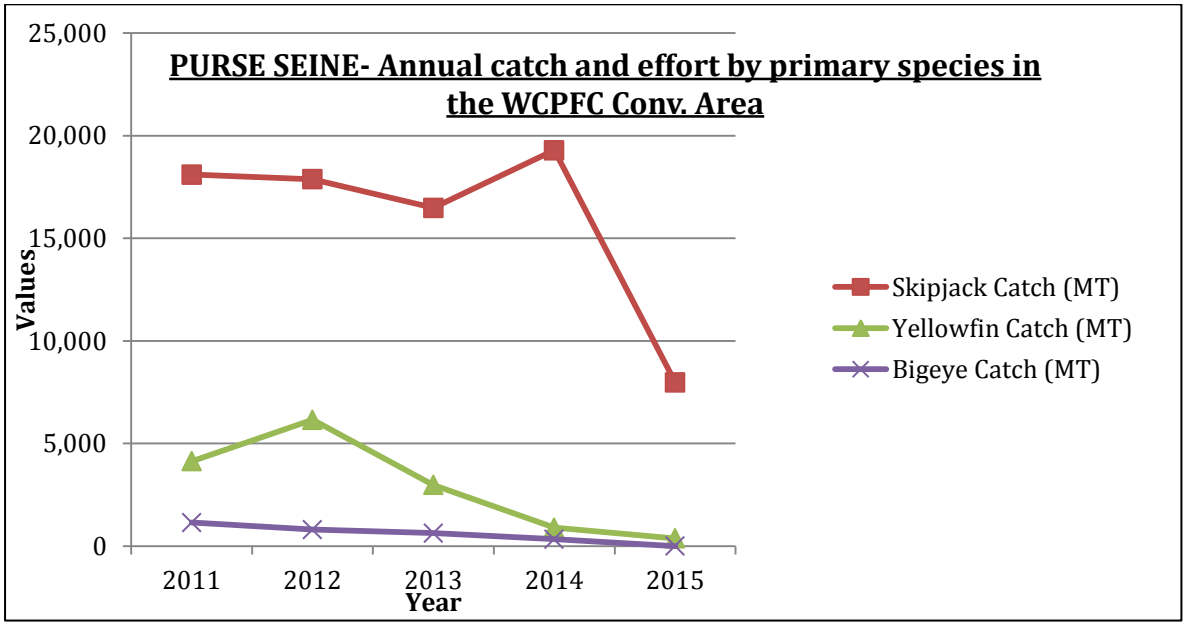


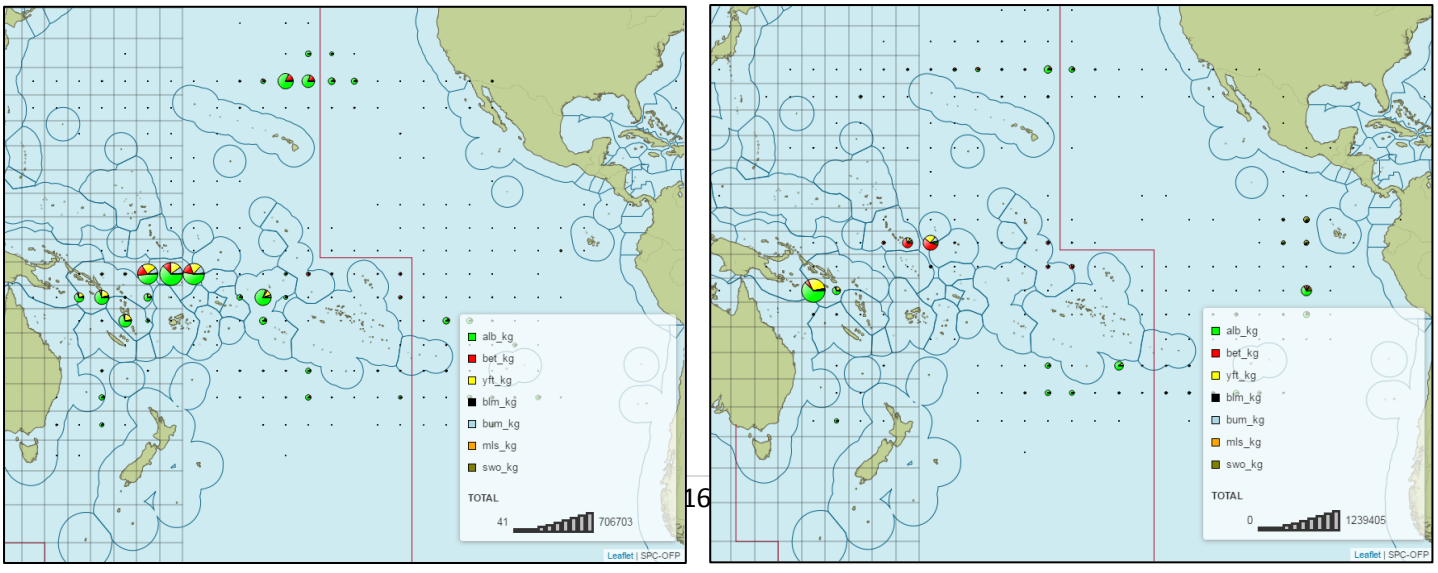
Table 2) Annual un-raised catch estimates for all Vanuatu longline vessels, for tuna and billfish by broad ocean areas

Area	Year	ALB	BET	YFT	SKJ	PBF	BUM	BLM	MLS	SWO
1. WCPFC Convention Area	2015	6,400.7	6,018.9	2,006.8	112.1	0.175	758.5	35.1	78.5	555.3
	2014	6,581	3,419	1,695	134	0	493	27	77	368
	2013	10,446.2	1,989.2	1,626.2	166.2	0	544.6	18.5	104.6	344.6
	2012	8,300.1	2,150.7	2,229.9	0.6	0	436.6	18.3	71.1	176.7
	2011	8,059	1,809	1,269	0	0.623	195	11	67	170
2.WCPFC Convention area (S of Equator)	2015	3,963.4	N/A	N/A	N/A	0.175	N/A	N/A	61.5	369.5
	2014	4,157	N/A	N/A	N/A	0	N/A	N/A	54	286
	2013	6,486.2	N/A	N/A	N/A	0	N/A	N/A	33.8	135.4
	2012	5,615.3	N/A	N/A	N/A	0	N/A	N/A	36.6	130
	2011	3,210	N/A	N/A	N/A	0.623	N/A	N/A	20	83
3.WCPFC Convention Area (N of Equator)	2015	2,437.3	N/A	N/A	N/A	0	N/A	N/A	16.9	185.8
	2014	2,426	N/A	N/A	N/A	0	N/A	N/A	24	81
	2013	1,361.5	N/A	N/A	N/A	0	N/A	N/A	9.2	18.5
	2012	2,684.8	N/A	N/A	N/A	0	N/A	N/A	34.5	44.7
	2011	4,850	N/A	N/A	N/A	0	N/A	N/A	30	27
4. WCPO	2015	5,704.4	4,959.5	1,716.8	N/A	N/A	N/A	N/A	52.3	445.3
	2014	5,559	3,028	1,601	N/A	N/A	N/A	N/A	57	328
	2013	7,409.2	1,380	1,507.7	N/A	N/A	N/A	N/A	32.3	109.2
	2012	7,191.3	1,943.5	2,191.3	N/A	N/A	N/A	N/A	58.9	158.4
	2011	7,376	1,706	1,252	N/A	N/A	N/A	N/A	53	155
7. North Pacific Ocean	2015	2,629.3	N/A	N/A	N/A	0	N/A	N/A	19.6	215.4
	2014	2,426	N/A	N/A	N/A	0	N/A	N/A	24	81
	2013	1,801.5	N/A	N/A	N/A	0	N/A	N/A	15.4	40
	2012	2,843.2	N/A	N/A	N/A	0	N/A	N/A	38.6	60.9
	2011	8,102	N/A	N/A	N/A	0	N/A	N/A	95	95
8. South Pacific Ocean	2015	7,921.5	N/A	N/A	N/A	0.25	N/A	N/A	166.5	805.5
	2014	3,134	N/A	N/A	N/A	0	N/A	N/A	32	247
	2013	8,636.9	N/A	N/A	N/A	0	N/A	N/A	87.7	303.1
	2012	9,096.2	N/A	N/A	N/A	0	N/A	N/A	87.3	211.2
	2011	5,779	N/A	N/A	N/A	0.62	N/A	N/A	71	136

Note: *N/A in the table refers to data that is not a WCPFC requirement to record. Only the species in the areas reflected in the accepted stock boundaries stated are reported for each broad ocean area.*

Figure 2(a)i). Annual Catch distribution (1°x1°) of tuna species for National Longline Fleet within the WCPFC-CA

2013 **2014**



2015

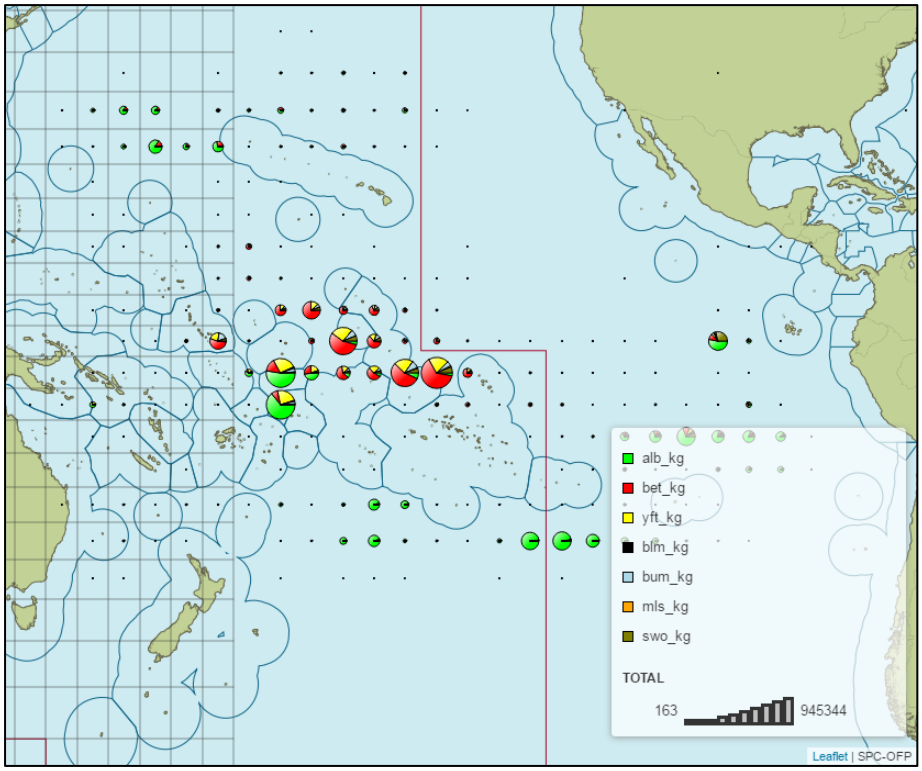
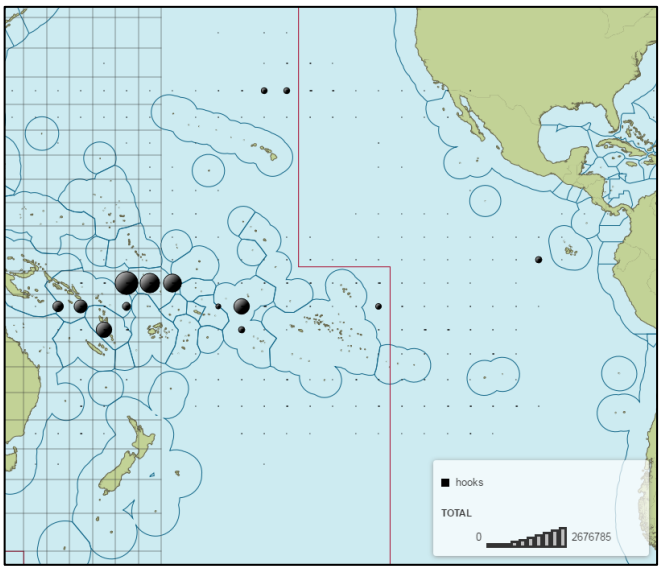
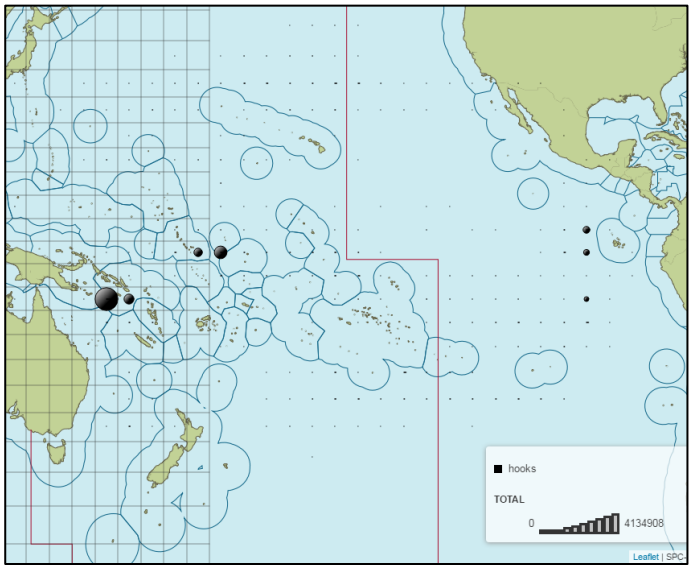


Figure 2(a)ii). Annual Effort distribution (1°x1°) of tuna species for National Longline Fleet within the WCPFC-CA

2013 **2014**





2015

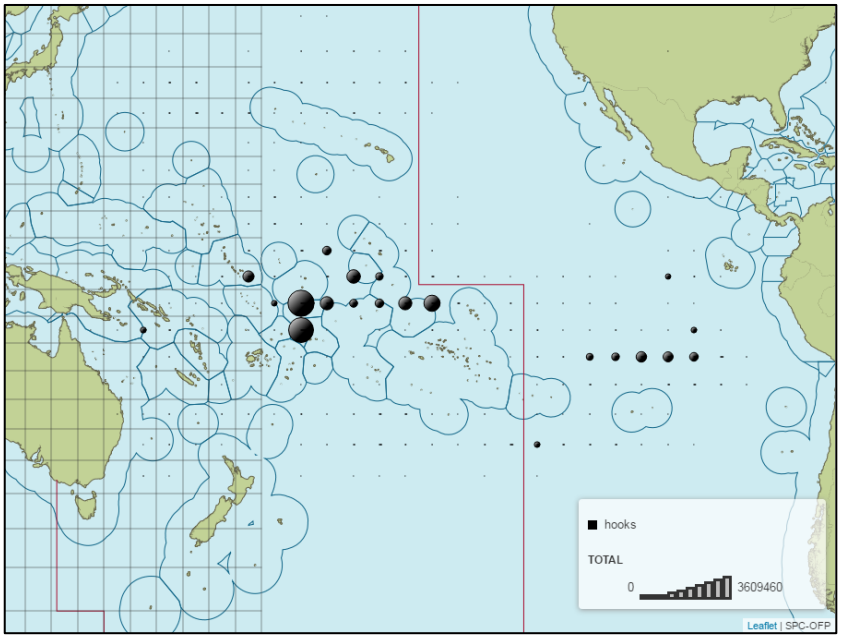
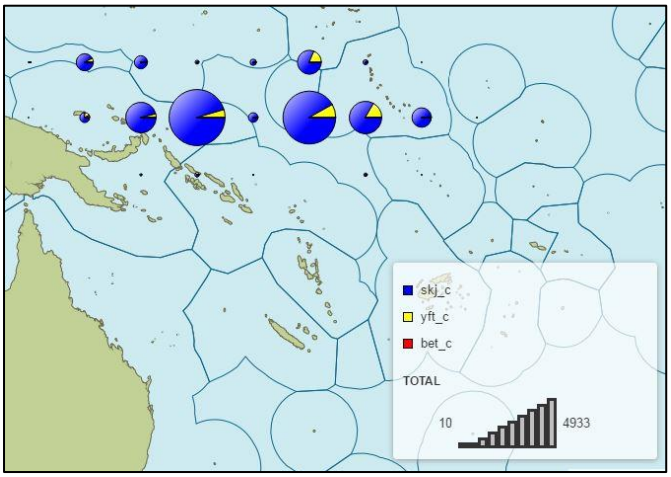
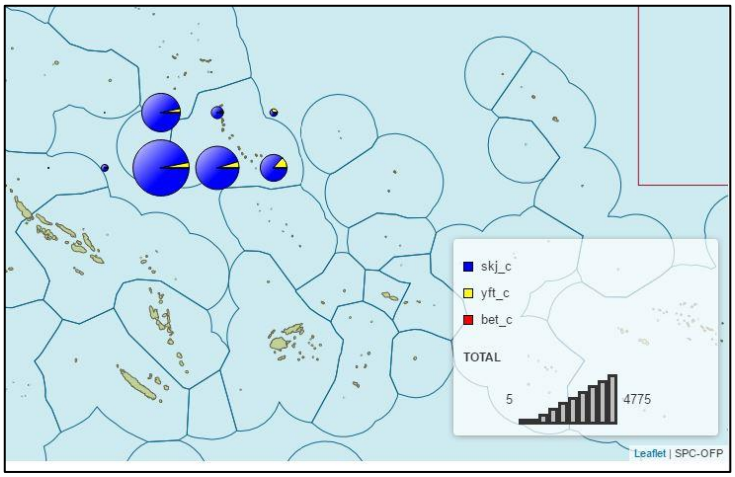


Figure 2(b)i). Annual Catch distribution (1°x1°) of tuna species for Purse Seine Fleet within the WCPFC-CA

2013



2014



2015

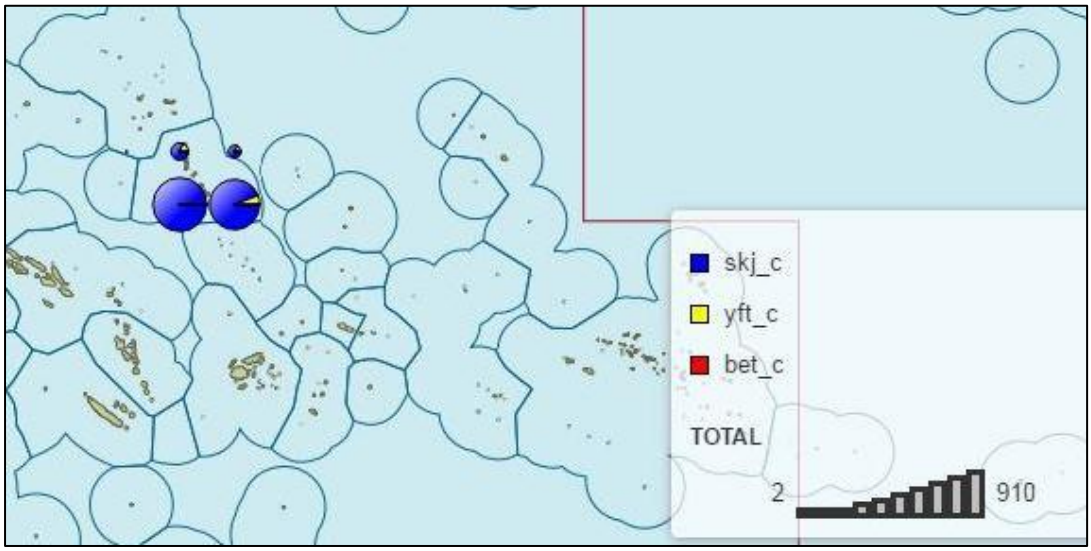
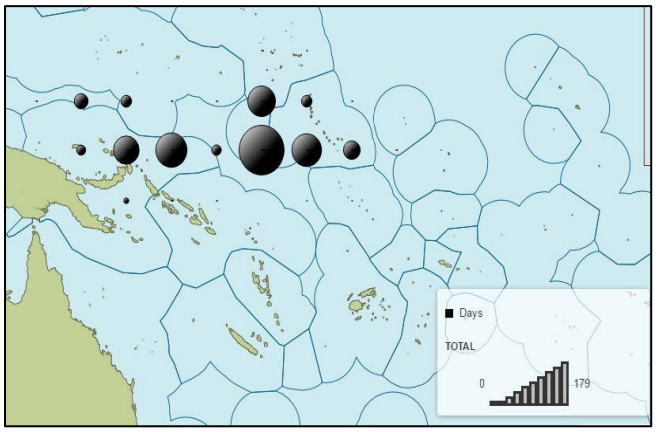
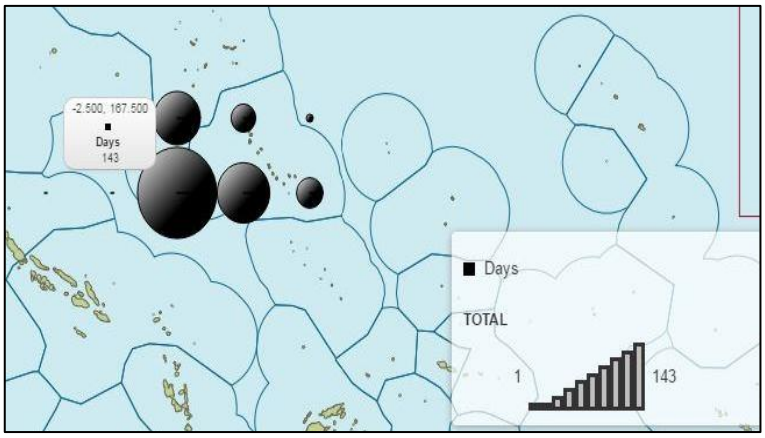


Figure 2(b)ii). Annual Effort distribution (1°x1°) of tuna species for National Purse seine Fleet within the WCPFC-CA

2013



2014



2015

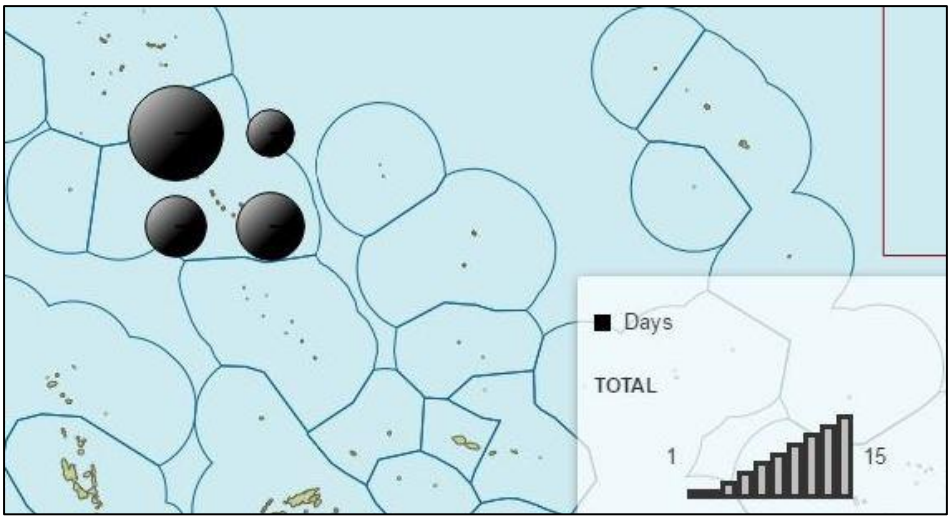


Table 3. Observed annual estimated catches of Special interest (seabird, turtle and marine mammals) by gear for the National fleet in the WCPFC area.

Year	gear	Category	species	Number	Alive	Dead
2015	L	MARINE MAMMALS	FALSE KILLER WHALE	1	1	0
	L	MARINE REPTILES	GREEN TURTLE	2	1	1
	L	MARINE REPTILES	HAWKSBILL TURTLE	1	0	1
	L	MARINE REPTILES	LEATHERBACK TURTLE (NEW FAO)	1	0	1
	L	MARINE REPTILES	OLIVE RIDLEY TURTLE (NEW FAO)	28	10	18
2014	S	MARINE MAMMALS	BOTTLENOSE DOLPHIN	3	0	0
	S	MARINE REPTILES	LOGGERHEAD TURTLE	1	0	0
	L	MARINE REPTILES	OLIVE RIDLEY TURTLE (NEW FAO)	3	1	2
2013	S	WHALE SHARK	WHALE SHARK	3	0	0
	S	MARINE MAMMALS	COMMON DOLPHIN	2	0	0
	S	MARINE MAMMALS	SPINNER DOLPHIN	3	0	0
	S	MARINE MAMMALS	Rough-toothed dolphin	1	0	0
	S	MARINE MAMMALS	FALSE KILLER WHALE	1	0	0
	S	MARINE REPTILES	HAWKSBILL TURTLE	3	0	0

	S	MARINE MAMMALS	RISSO'S DOLPHIN	2	0	0
	L	MARINE MAMMALS	FALSE KILLER WHALE	1	1	0
	L	MARINE MAMMALS	RISSO'S DOLPHIN	1	1	0
	L	BIRDS	ALBATROSS	1	0	1
2012	S	WHALE SHARK	WHALE SHARK	8	0	0
	S	MARINE MAMMALS	FALSE KILLER WHALE	5	0	0
	S	MARINE REPTILES	OLIVE RIDLEY TURTLE (NEW FAO)	2	0	0
	S	MARINE REPTILES	HAWKSBILL TURTLE	1	0	0
2011	S	WHALE SHARK	WHALE SHARK	2	0	0
	S	MARINE REPTILES	GREEN TURTLE	1	0	0
	S	MARINE MAMMALS	FALSE KILLER WHALE	1	0	0
	S	MARINE REPTILES	HAWKSBILL TURTLE	6	0	0
	S	MARINE REPTILES	LOGGERHEAD TURTLE	3	0	0
	L	MARINE MAMMALS	FALSE KILLER WHALE	1	1	0
	L	MARINE REPTILES	LEATHERBACK TURTLE (NEW FAO)	1	1	0

NOTES:
1. Observed annual estimated catches of species of special interests have been determined by Observer data
2. As an interim measure, species composition data obtained from observers for this fleet in adjacent years have therefore been used to produce estimates of these species of special interests. For recent years, processed observer data may become available and will therefore contribute to more reliable estimates in the future.
3. The observer data coverage rate is considered low (3.75%) to produce estimates of species of special interests for the previous years.

Table 4. Annual Estimated catches of Non-target, Associated and Dependent species including Sharks caught by Vanuatu Longline Vessels

Species	2011	2012	2013	2014	2015
BLUE MARLIN	195	436.6	544.6	493	758.5
BLACK MARLIN	11	18.3	18.5	27	35.1
PACIFIC BLUEFIN	0.623	0	0	0	0.175
STRIPED MARLIN	67	71.1	104.6	77	78.5
SWORDFISH	170	176.7	344.6	368	555.3
BLUE SHARK	1.5	9.7	73.5	659.3	776.654
SILKY SHARK	0.8	2.3	34.3	49.03	23.178
OCEANIC WHITETIP SHARK	0	0.1	0.5	0.06	0
MAKO SHARK	13.2	8.2	18.9	121.9	102.49

4. Licensing and Fleet Structure

Table 5). Annual Vessel Numbers for the National Fleet active in the WCPFC Convention Area by Gear and Size Category

(a) Longline Distant Water and Offshore

Size class (GRT)	2011	2012	2013	2014	2015
0–10	0	0	0	0	0
10–50	0	0	0	1	1
50–200	29	38	35	54	32
200–500	24	24	17	15	18
500+	22	22	9	12	23
Total Vessels	75	84	61	82	74

Note: *Fleet cover is based on Tufman Reporting of only vessels who are active (ie, submitted logsheets in Tufman therefore number should have been higher)*

(b) Purse Seine -Bilateral Access

Size class (GRT)	2011	2012	2013	2014	2015
0–500	3	3	0	0	0
500–1,000	0	0	0	0	0
1,000–1,500	11	13	11	0	0
1,500+	13	6	5	4	3
Total Vessels	27	22	16	4	3

Note: *Fleet cover is based on Tufman Reporting of only vessels who were active (ie, submitted logsheets in Tufman)*

Figure 3) a) Annual vessel numbers for the National Longline fleet in the WCPFC-CA

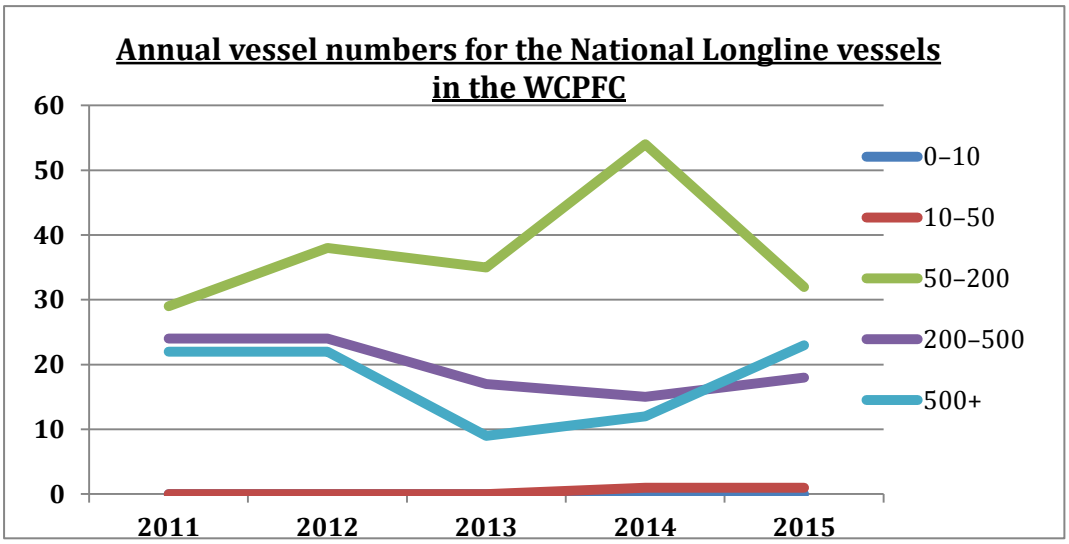
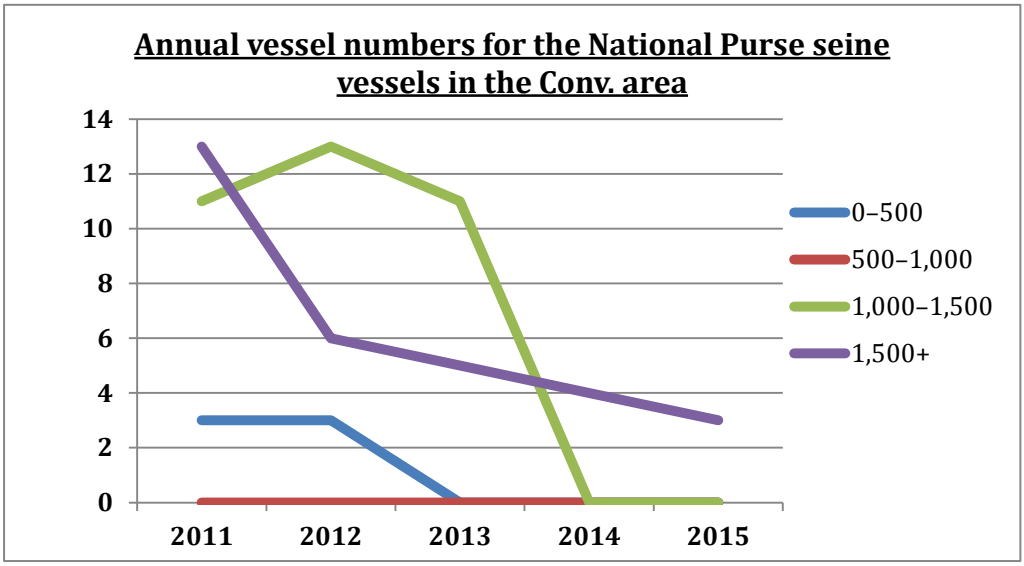


Figure 3) b) Annual vessel numbers for the National Purse seine fleet in the WCPFC-CA



COASTAL STATE REPORTING

5. Information on Coastal State Reporting

The Vanuatu Exclusive Economic Zone (EEZ) is approximately 690,000 square kilometers and includes over 80 islands and an area of archipelagic waters. Commercial tuna fishing commenced in Vanuatu in 1957 with the establishment of the Japanese South Pacific Fishing

Company Limited (SPFC) longline transhipment base at Palekula, Espiritu Santo Island. The base, consisting of a wharf and cold storage facilities, was substantially upgraded in 1974. After handling annual landings of between 4-15,000 tonnes since 1969, SPFC closed its operations in the late 1980s and the facility was turned over to the Government of the Republic of Vanuatu. US purse-seiners, licensed under the US Treaty fished on four occasions in Vanuatu waters in1999 with very small catches.

In the Vanuatu EEZ fishing has been through Bilateral Fishing Agreements (BFA) particularly with Fiji and Solomon Island based companies. These catch proportions were similar to the historical tuna catch compositions. The recent tuna fishery in Vanuatu has generally seen a rapid expansion of fishing effort since 2006 but slowing decreasing until 2013. It is estimated that recent effort exceeded 25 million hooks per year based on unraised data but it is likely that the actual estimate may have exceeded 40 million hooks per year if the data were raised. It is noted that high catches were usually obtained with high effort.

6. Catch and Effort Trends

During the period 2011 to 2015, the total annual catch for all the foreign fleets in Vanuatu EEZ had decreased from 6,780.17MT in 2013 to 4,154.50MT in 2015. There has been a variation in the catch for these years and this was a result of the effort decline that took place also for this period as the vessels shifted their operations to Solomon Islands. The catch was largely attributed to the Chinese fleet which recorded over 80% of the total catch for the 2011-2015 periods, and again Fiji and Vanuatu fleet contributing only 11%. Fishing effort continued to decrease from 2014 to 2015 from 65 vessels to 49 vessels as well as a reduction in number of trips from277 in 2014 to 216 in 2015. Unraised and provisional estimates for this licensed fleet in 2015 were 2,837.197MT, 813.539MT and 126.073MT for albacore, yellowfin and bigeye respectively and these catch estimates were determined from logsheet data raised using information on actual vessel activity (VMS data) by using the eRECAP logsheet/VMS reconciliation web tool. The annual estimated tuna catch composition by weight for 2015, was again dominated by albacore (85%), yellowfin (22%) and minor bigeye (3%).

In the period 2011 to 2015, the total annual catch for the foreign longline fleets in Vanuatu EEZ decreased from 6,304MT to 4,154.50MT (2015). This catch reduction was a result of the effort decline that resulted in a shift to the Solomon Island EEZ. Catch from these fleets were largely attributed to the Chinese fleet which recorded over 80% of the total catch for the 2011-2015 periods followed by the Fijian and Taiwanese fleet contributing only 11%. Catch rates for this period has seen a great reduction due to the reduction in the number of vessels also where in 2015 the only foreign fleet operating were the Chinese vessels with the exclusion of only 1 Fijian vessel. The Taiwanese fleets have been declining evidently since 2010 to 2014 and have completely lost numbers in 2015; as can be seen in Table 6.

The annual longline estimated tuna catch composition by weight for 2015, was again dominated by albacore (85%), yellowfin (22%), and minor bigeye (3%). These catch proportions were similar to the historical tuna catch compositions. It has been estimated that the total catch of albacore in 2009 exceeded 6,000mt based on unraised data but it is likely that the best estimate may have approached 10,000mt if the data were raised. The total catch of swordfish in Vanuatu EEZ was estimated at 22.86MT in 2015.

The recent tuna fishery in Vanuatu has seen a general decline in both fishing effort and catch estimates respectively. It is estimated that the recent effort exceeded 91thousand hooks per year based on unraised data but it is likely that the actual estimate may exceed 180 thousand hooks per year if the data were raised. It is noted that low catches were usually obtained with

low effort. SPC also provided estimates based on raised logsheet data that have been submitted by Fiji and Pagopago for the Fiji based fleet.

Data regarding the fishing operations of the Vanuatu fleet have been provided by the various members in whose jurisdictions the vessels may have operated, and also by various established fishing agents in Vanuatu.

Table 6. Annual Catch and Effort estimates for Each Foreign Fleet by Gear and Primary species in the National EEZ

Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2012	CN	29	136	1080.301	22.569	226.814	201.509	1,531.19
	FJ	14	29	321.7	19.528	91.116	67.066	499.41
	TW	10	95	702.039	97.275	367.732	171.363	1,338.41
	VU	17	115	547.397	54.051	270.739	142.346	1,014.53
	TOTAL	**70**	**375**	**2651.437**	**193.423**	**956.401**	**582.284**	**4,383.55**

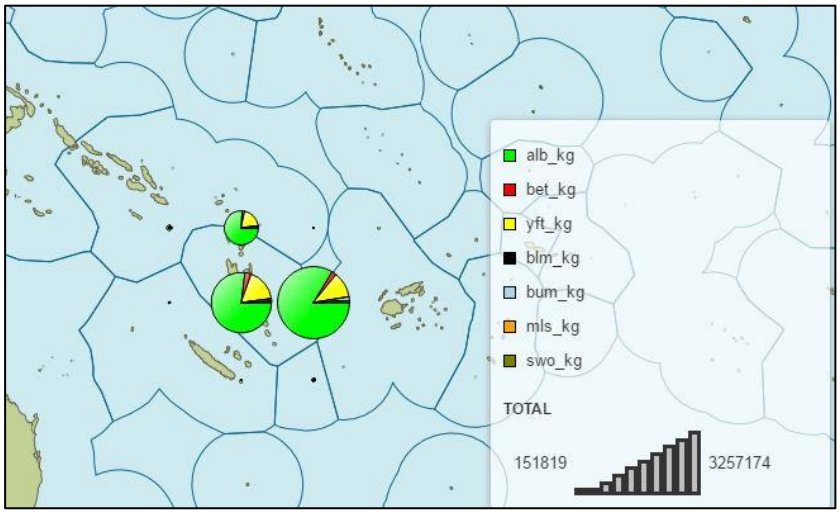
Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2013	CN	48	241	3792.393	92.407	638.672	564.148	5,087.62
	FJ	7	28	595.586	31.398	108.676	80.911	816.57
	TW	10	62	341.271	22.825	87.092	59.548	510.74
	VU	12	74	228.946	16.921	81.861	37.513	365.24
	Total	**77**	**405**	**4958.196**	**163.551**	**916.301**	**742.12**	**6,780.17**

Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2014	CN	51	247	4338.997	138.831	886.111	636.948	6,000.89
	FJ	3	10	110.953	3.581	13.428	23.077	151.04
	TW	5	11	77.925	3.451	22.307	11.547	115.23
	VU	6	9	26.998	1.153	5.778	2.911	36.84
	Total	**65**	**277**	**4554.873**	**147.016**	**927.624**	**674.483**	**6,304.00**

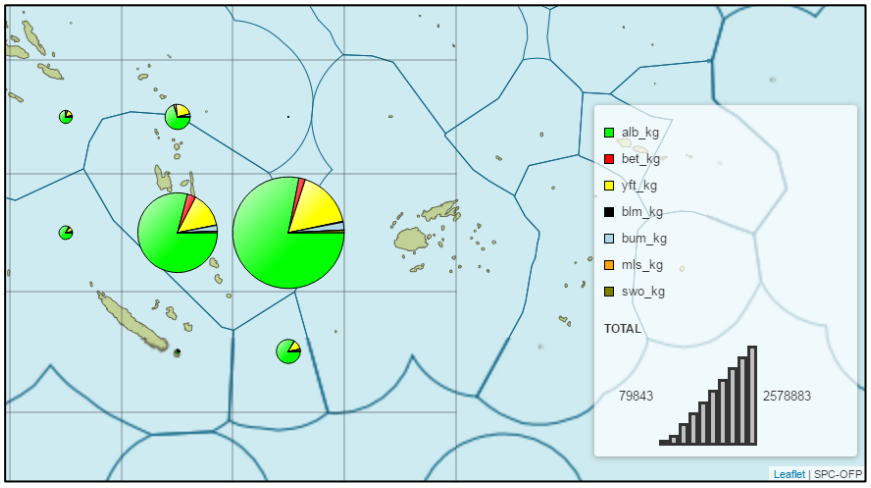
Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2015	CN	48	210	2759.957	123.718	801.014	361.254	4,045.94
	FJ	1	6	77.24	2.355	12.525	16.436	108.56
	Total	**49**	**216**	**2837.197**	**126.073**	**813.539**	**377.69**	**4,154.50**

Figure 4). Annual Catch distribution of target tuna species by Major foreign Longline fleets in Vanuatu EEZ.

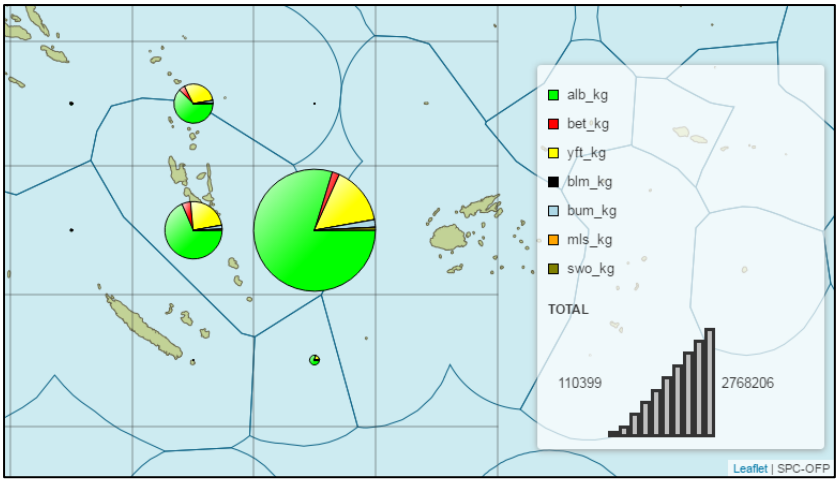
2013



2014



2015



7. Socio-economic Factors

Since 2013 the number of Foreign and locally based Foreign license has dropped as most vessels were moving to the Solomon Islands EEZ and towards the eastern pacific where fishing was reported to be very good. Vessels that were offloading their catch in the Vanuatu EEZ through transshipment were also reporting very low catches towards the end of 2013 to early 2014 thus Transshipment in port was not as regular and towards the end of 2014 Transshipment in port ceased.

For local artisanal fisherman fishing in FADs have recently become a priority with the sudden reduction in fuel costs as most Artisanal fisherman target FAD's only to catch skipjack for Baitfish.

The TUFART database is currently under development for Vanuatu and by August 2016 Vanuatu Fisheries will be fully using the TUFMAN2 database as well as fully utilize the RIMF to cater for all Artisanal vessel registration and licensing activities. Fishers including small skiffs and motorized canoes are also registered with the objective of enhancing the capacity to collect data for coastal, deep bottom and pelagic fisheries.

One of the major factors that is affecting our Locally Based Foreign Vessels is the very high cost associated while based in Vanuatu, thus the reason for the shift in operations over the last 2 years.

8. Onshore Developments

The processing plant (Tuna Fishing Vanuatu Limited) in Port Vila harbor seized operations in February 2014 due to movement of the fleet to the Solomon Islands. The Chinese fishing Base is currently under renovation and is part of the Governments 100 day plan to commence operations by the end of 2016. This will allow the licensed Chinese vessels currently fishing the VU EEZ to offload their catch in the Vila port and facilitate for the export of the catch to the Export countries including US and China.

9. Future Prospects of Fishery

Vanuatu has maintained its position to limit the number of license to 75 Foreign License and 40 Locally Based Foreign license however the license fee has been increased by 50% of the current fee.

RESEARCH AND STATISTICS

10. Estimated data coverage

Coverage of logsheets from foreign fleets fishing in the Vanuatu EEZ extends back as far as the 1970s and has been low and variable among years. The only recent high coverage catch and effort rates are those from the Vanuatu and Fiji fleet. There has also been significant missing data throughout the years thus the difficulty in estimating coverage rates for some years. Because of the uncertainty of the estimated catch, effort, and size data coverage amongst the fleets that operate in Vanuatu, the catch and effort levels for Vanuatu have been difficult to

estimate. It is understood however, that most of these fleets have been unloading their catch in the ports of Pagopago in American Samoa and Levuka and Suva in Fiji.

Vanuatu is looking into strict measures in terms of estimating catch and effort data, since most of our licensed vessels are currently offloading all or part of their catches overseas, either to the factory or on the carrier vessel in port. One of the major steps for Vanuatu in 2015 was to establish designated ports for landing catches.

Most of the current presented data were obtained from the OFP/SPC database, and were originally collected and supplied by Vanuatu and Fiji.

Apart from biological samples that Vanuatu observers are collecting for the Deep Bottom snapper fishery in 2014, there has never been any research on tuna fishery data collection system in Vanuatu.

11. Status of Tuna Fisheries Data Collection Systems

(a) Logsheet Data collection and Verification

There has been vast improvements with the collection of logsheet data since it has become one of the special licensing conditions; which has forced vessel owners to keep up with the submission of logsheet data. For the licensed vessels the logheet coverage based on VMS Data was ~100%. Whereas for the Vanuatu flag vessels the coverage was ~87%, this was because most of these vessels are based entirely in the high seas therefore it may take a while before their logsheets reach the agents in Taiwan for checks before they sent them to Vanuatu for processing and entering. Vanuatu is planning to apply E-log forms to be used on board all Vanuatu longliners and Vanuatu will make sure all purse seiners flying Vanuatu flag will be required to use the E-Forms that were developed by SPC and this is something that is currently looked at implementing by the end of 2017.

(b) Observer and Port Sampling Programme

Vanuatu established the National Observer and Port Sampling Program in 2008. From then until now the Vanuatu National observer and Port Sampling programme (VNOPP) managed to have established 100% coverage on all Locally Based Foreign Vessels and also 100% coverage port sampling on all transshipment and unloading activities in port. However, there is still very limited observer coverage for the Fiji and Solomon Island based fleets operating in the Vanuatu EEZ.

Port Sampling/Transshipment activities have continuously been carried out in port and alongside port to assess the size, weight and type of specified species either targets or non-target caught within the Vanuatu EEZ.

The most valuable species for sashimi caught within the VU EEZ is Big Eye Tuna, but supply volumes are very low and are declining. After Big Eye tuna, Yellow Fin is the next most valuable species and is the most highly target species followed by albacore and then, to a lesser extent, mahi mahi, wahoo and Opah.

Small scale fresh tuna longliners that offload regularly are typically less than 100GRT fiberglass reinforced plastic (FRP) vessels and use refrigerated sea water for storing catch. Average number of vessel trip per month for sashimi is 15 trips.

Currently there are 27 active observers within the Vanuatu national observer program responsible for carrying out both observer and port sampling duties.
To meet National program responsibilities, objectives are established for scientific technicians working as observers aboard longline fishing vessels

(c) Unloading and Transshipment

Unloading and Transshipment in Vanuatu port has been by way of locally based foreign vessels fishing in Vanuatu EEZ. Since 2009 there has been 100% port sampling for all unloading and transshipment activity in Vanuatu EEZ. Transshipment has been constantly carried out within the harbour mostly targeting albacore for canning (e.g. Fiji and Solomon) or other species such as sharks (mainly fins), Marlins, wahoo, Sword fish and other relevant by-catch including low grade yellow fin and big eye. Transshipment is 100% sampled in measurement and estimated capacity weight of each fish well; all fish for transshipment are stored frozen in blast freezers. Transshipment often occurs once a month and in 2014 there were only 4 transshipments in the Vanuatu port. These 4 transhipments involved 1 carrier vessel and nine small-scale tuna longliners offloading around 15,224 measured albacore, bigeye, yellowfin and other tuna like species as frozen catch into the carriers. There has not been any transshipment activities carried out in 2015 in the Port Vila port.

(d) Disposal of Catch

Fresh Tuna previously landed in Vanuatu by Locally Based Foreign vessels were exported by air to Japan as well as USA, Australia and New Zealand, while fresh Opah was exported to Hawaii. The frozen catch however usually transferred to fish carriers and exported to canneries in Fiji.
The Foreign fleets that have been licensed to fish in Vanuatu EEZ unload 100% of their catch (both their fresh and frozen) either, in Pagopago or Fiji which are either moved to canneries or exported to Japan.

12. Research Activities

There were no major research activities carried out in 2015.

APPENDIX I-CMM Report

Table 1 Summary Table

CMM Reference	Description	Response
CMM 05-03	North Pacific Albacore	This is one of the Target Species by Vanuatu long liners and 187,141.0 albacore weighing 2,438.5MT was reported in 2015 by 49 vessels for 2,754.0 fishing days. There were no albacore recorded north of the equator for Purse seine activities.
CMM 06-04	SW Striped Marlin	Striped marlin is caught as a by-catch. In 2015, 50 VU flag vessels caught 1,661 striped marlin, weighing 78.29MT in the area South of 15 degrees South.
CMM 09-03	SP Swordfish	Swordfish is caught as a bycatch. In 2015, 39 VU flag vessels caught 809 swordfish, weighing 39.423MT in the area South of 20 South.
CMM 09-06	Transhipments	See below for details.
CMM 10-05	South Pacific Albacore	SP Albacore is a target species for VU longline flag vessels. In 2015, 39 VU flag vessels caught 354,230 SP ALB, weighing 4,287.42MT in the area S 20 S.
CMM 10-07	Sharks	Shark species catch estimates based on catch data for 2015 approximately 37,790 in total weighing 936.84MT. All these were caught by Longline vessels.
CMM 11-03	Cetaceans	Based on Observer data there was only 1interaction with a False Killer Whale in 2015 and this was from a Longline vessel.
CMM 11-04	Oceanic White-Tip Shark	An estimated 4 oceanic white tip shark were taken by purse seine vessels and these were released/discarded dead. An estimated 20 Oceanic white tip shark were taken by longline vessels and all were released. An estimated 50% were alive when released.
CMM 12-04	Whale Sharks	In 2015 according to observer data, there were no interactions with Whale sharks in the Purse seine fishery.
CMM 12-07	Seabirds	There were no interactions with seabirds interactions by both LL and PS vessels in 2015.
CMM 13-01	Discard reporting–by National Fleet	According to observer data, in 2015 there was a total of 178.557mt of discards by the National fleet vessels all of which are Purse seine vessels. From this number 164.622mt were Skipjack, 13.595mt were Yellowfin and 0.34Mt were Bigeye. All discards were done

		for the two main reasons of Gear Damage and that the fish was too small.
CMM 13-08	Silky Sharks	An estimated 1,307 silky sharks were caught from the Longline vessels weighing 23.178MT and all were discarded/released, except for observer reports of 7 individuals retained [currently being investigated]. An estimated 23% of the released silky shark were alive. An estimated 243 Silky shark were caught from purse seine vessels. All were discarded and all were estimated as being dead on discard.1
CMM 08-03	Marine Turtles	In 2015, there were a total of 487 turtle interactions with Longline vessels reported from TUBS. From this figure, 31 were Green turtles of which 16 were discarded alive and 15 were discarded Dead. There were 420 Olive Ridley Turtles also caught of which 140 were discarded Alive and 280 were discarded Dead. 18 Leatherback Turtles were also caught of which all 18 were discarded Dead and finally 18 Hawksbill Turtles were also caught of which all 18 were discarded Dead. There were no turtle interactions by Purse seines reported.
WCPFC 11 decision- para 484 (b)	Observer Coverage	In 2015, the Observer coverage for LL vessels was measured using the number of days fished that was observed by the Observers. There were only 2 trips in 2015 and the trips totalled up to 250 observed days in total. Therefore, from this figure Vanuatu's observer coverage on its LL vessels in 2015 came up to a 3.57%. The minimum 5% coverage is 350 observed days so VU is short of 100 days for 2015. For Purse seine vessels, the Observer coverage is 100% for 2015.

CMM 09-06 – Transshipments

Annex II (1)

(1) Total quantities, by weight, of highly migratory fish stocks that were transshipped by fishing vessels the CCM is responsible for reporting against, with those quantities broken as below:	
(a) Offloaded and Received	
Year	2015
Offloaded	178.4
Received	56,440.50
*** - Figures in metric tonnes**	
(b) Transshiped in Port, At Sea, and ABNJ	
Year	2015
High Seas	25,795.90
Within a EEZ	3,750.40
Port	24,824.40
Outside convention area	1,731.00
	492.6
*** - Figures in metric tonnes**	
(c) Transshipped Inside and Outside CA	
Year	2015
Inside CA	54,370.70
Outside CA	1,731.00
*** - Figures in metric tonnes**	
(d) Caught Inside and Outside CA	
Year	2015
Inside CA	49,472.20
Outside CA	7,122.20
*** - Figures in metric tonnes**	
(e) Species	
Year	2015
SKIPJACK TUNA	21,419.00
BIGEYE TUNA	17,010.40
YELLOWFIN TUNA	10,302.30
ALBACORE TUNA	4,458.40
SWORDFISH	1,745.90
OTHERS	556.6
BLUE MARLIN	325.6
BLACK MARLIN	216.7
STRIPED MARLIN	173.8
SHARK	109.6
LAG	90.9
BLUEFIN TUNA	44.3

WAHOO	34.6
MARLIN UNSPECIFIED	29
LEC	25.6
OILFISH	23.8
BLUE SHARK	20.2
SOUTHERN BLUEFIN TUNA	5.9
SAIL FISH	1.4
SPANISH MACKEREL	0.4
*** - Figures in metric tonnes**	
(f) Product Form	
Year	2015
Whole	32,175.10
Gilled and Gutted	16,424.00
Gilled, gutted and tailed	4,762.10
Dressed	935
Gutted, Headed and Tailed	644.4
Other	564.4
Head Off	436.1
Gilled, headed and tailed	276.5
Round (RD)	169.4
Gutted and headed	131.3
Filleted	72.2
Gilled and headed	1.9
Shark Fins	1.5
Gutted only	0.6
*** - Figures in metric tonnes**	

Annex II (2)

(2) Number of transhipments by fishing vessels:	
(a) Offloaded and Received	
Year	2015
Offloaded	9
Received	517
*** - Figures denote the number of transhipments.**	
(b) Number of Transhipments in Port, At Sea, and ABNJ	
Year	2015
High Seas	379
Within a EEZ	78
Port	52
Outside convention area	6
	7
*** - Figures denote the number of transhipments.**	

(c) Number of Transhipment Inside and Outside CA	
Year	2015
Inside CA	509
Outside CA	6
*** - Figures denote the number of transhipments.**	
(d) Number of Transhipment Caught Inside and Outside CA	
Year	2015
Inside CA	501
Outside CA	119
*** - Figures denote the number of transhipments.**	

APPENDIX II

Table showing Categories of coverage for catch, effort and size data.

Category	Catch/Effort data Coverage	Size data coverage
HIGH	>80%	>80%
MEDIUM	50-80%	50-80%
LOW	0-50%	0-5%
-	No data	No data

LEGEND*: "Catch/Effort data coverage" is determined by the comparing the annual catch from operational (logsheet) data to the total annual catch, as determined by unloading or other types of data/information. "Size data coverage" is determined by comparing the number of trips covered by port sampling and observers (collecting size data) with the estimated number of actual trips undertaken by this fleet during that* year.