SCIENTIFIC COMMITTEE
TENTH REGULAR SESSION

Majuro, Republic of the Marshall Islands
6-14 August 2014

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

WCPFC-SC10-AR/CCM-28 Rev 1
(30 October 2014

VANUATU

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PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS
WCPFC-SC10-AR/CCM-01

The 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 2014	**YES**

1. SUMMARY

Vanuatu is now 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. 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 consists of 16 purse seiners and 61 long-liner fishing vessels and these were active in WCPFC in 2013 compared to 2012 where there were 74 Longliners and 22 Purse-seiners.

In the Vanuatu EEZ fishing has been through Bilateral Fishing Agreements (BFA) particularly with Fiji and Solomon Island based companies, whereas for the Vanuatu Flag purse seiners have been fishing under Bilateral Arrangements with PNG and FSM whereas the small longliners fishing under Bilateral arrangements with Kiribati and the Large Scale Tuna long line vessels were based entirely in the high seas.

The main commercial tuna and billfish species caught in the Vanuatu EEZ and by the Vanuatu fleet in the WCPFC are 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 our obligation to the WCPFC CMMS's we have also compiled estimates of key shark species, 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. Individual fleets presented herein cover vessels with high catch and effort data coverage and these are Fiji, Taiwan and mostly Chinese flag vessels who are entirely based in Fiji and are fishing in Vanuatu under Foreign or Locally Based Foreign Licenses. The major tuna species from the Foreign and locally based foreign catch in the Vanuatu EEZ was dominated by albacore with 75%, yellowfin with 15% and lastly bigeye with 5% of the catch total.

In the period 2009 – 2013 the annual catch estimates of the Vanuatu longline fleets in the WCPO have generally decreased as did the fishing effort (sets) and number of fish per 100 hooks; this also applies to the purse seiners whose catch estimates were also reduced due to the reduction in effort. For Purse seines, there were more sets on unassociated than associated schools. The total catches for the purse seine fleets that fished under bilateral agreements were reduced from 24,834mt in 2012 to 20,099mt in 2013. This recent catch comprises 93% skipjack, 6.5% Yellowfin and 0.2% bigeye. Unraised and provisional 2013 data shows that catches of most major tuna species have increased from 15,667mt of skipjack in 2012 to 18,751 in 2013, from 8,300.1mt of Albacore in 2012 to 10,446.2mt in 2013 including an increase in catches of marlins and billfishes from 2012-2013 (Table 1). Yellowfin catches for both the Purse seine and Longline fleets reduced from 2012 to 2013 where for Purse seine catches dropped from 9,167mt to 1,313mt and for Longline catches also dropped from 2,229.9mt to 1,626.2mt respectively.

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. For Vanuatu flag Long liners that were based in Vanuatu in 2013, there was 100% observer coverage together with 100% port sampling for all unloading and transshipment activity that took place in port. Fresh fish caught and unloaded in Vanuatu in 2013 was exported to Japan, Australia, USA and New Zealand via airfreight while frozen fish are shipped to the canneries in Fiji via fish carriers.

2. Background

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 transshipment 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.

The report covers the fishing activities in the Vanuatu EEZ and operations of the Vanuatu flag vessels operating in the WCPFC and other broad ocean area during the period 2009 to 2013. 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 Data Management Unit. 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 more attention and focus on. Therefore, with limited staffs and limited funds available at the moment we will work more closely with SPC, FFA and Fiji to collect as much information and data as possible to enable us to fill in the gaps. We are yet to establish port designation for our Flagged Vessels and this would enable us to monitor landings of fish.

FLAG-STATE REPORTING

3. Information on Flag-state reporting

The Vanuatu fleet of purse seine and longline vessels fish 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 agreements particularly for long liners and sub-regional arrangements (FSM Arrangement) for purse seiners. Vanuatu currently operates a vessel registry, the Vanuatu International Ship Registry (VISR). The VISR has recorded over 500 registrations since 2003 of which 164 were fishing vessels. In 2013 Vanuatu has been working to exercise improvement of its flag state responsibility over these vessels and since 2002 to date there has been a vast improvement however more work needs to be done to meet requirement standards set by the European Union in 2012 when Vanuatu was given the Yellow Flag. International Authorization to Fish Certificates known as IATFs has been issued to all Vanuatu fishing vessels in the Pacific Ocean, Atlantic and Antarctic Ocean. 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 longline vessels operating in the wider WCPFC Area. The general observation was that annual catch and effort estimates have increased for both the purse seine and the longline fleets.

The major tuna species for the Vanuatu longline fleet catch was dominated by albacore then yellowfin and lastly bigeye. Unraised and provisional estimates for the longline fleet in 2013 were 10,446.2mt for albacore, 1,626.2mt for yellowfin and 1,989.2mt for bigeye respectively

and these catch estimates were determined from logsheet data raised using information on actual vessel Activity (VMS data). The purse seine fleet that operated under bilateral arrangements recorded an increase in effort in the number of days vessels spent fishing and searching from 510 days in 2012 to 626 days in 2013 (Table 1(b)). The effort in the total number of sets had also increased with the most seen in associated sets. The total annual estimated catches for this fleet also increased from 15,667mt in 2012 to 18,751mt in 2013. During this period, the main tuna species in the catch of increased which was skipjack which increased by 3,084mt and also bigeye which increased by 34mt. Yellowfin catches on the other hand, decreased by 7,853mt.

During the period 2009-2013, the longline fleet recorded its highest total annual catch estimate as 15,240.10mt in 2013 with a total effort of 224,579 hooks (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 2010 also which was an increase from the 1,651mt in 2006 to 2,060mt in 2010. Yellowfin catches also showed an increase in catch from 2009 (514mt) and 2012 (2,229.9mt) but was reduced in 2013 (1,626.2mt). Albacore was the dominant species in the catch followed by bigeye and yellowfin and then on to blue fin and other marlin species.

4. Tabular Annual Fisheries Information

Table 1(a). Annual catch (mt) in the WCPFC Convention Area by species for the VANUATU Offshore LONGLINE fishery.

SPECIES	2009	2010	2011	2012	2013
Yellowfin	514	788	1269	2,229.9	1,626.2
Bigeye	1,300	2,060	1809	2,150.7	1,989.2
Blue Marlin	102	173	195	436.6	544.6
Black Marlin	28	56	11	18.3	18.5
Skipjack	0	0	0	0.6	166.2
Albacore	7,992	12,293	8059	8,300.1	10,446.2
Pacific Bluefin	0	0	0.623	0	0
Striped Marlin	57	77	67	71.1	104.6
Swordfish	130	281	170	176.7	344.6

Notes: *1) 2009-2012 catch estimates were taken from TUFMAN database system – coverage of logsheets for 2012 is expected to be ~50%. Catch estimates were determined from logsheet data raised using information on actual vessel activity (e.g. VMS data).*

2) 2013 catch estimates were derived from the Tufman reporting web tool where logsheet coverage is ~65%.

Table 1(b). Annual catch (MT) in the <u>WCPFC Convention Area</u> by species for the VANUATU PURSE SEINE fishery.

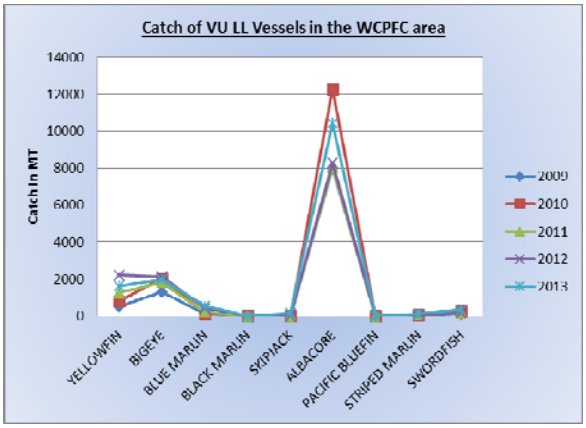
Species	2009	2010	2011	2012	2013
Skipjack	129,593	105,706	76,830	15,667	18,751
Yellowfin	15,126	23,259	9649	9,167	1,314
Bigeye	174	563	207	0	34

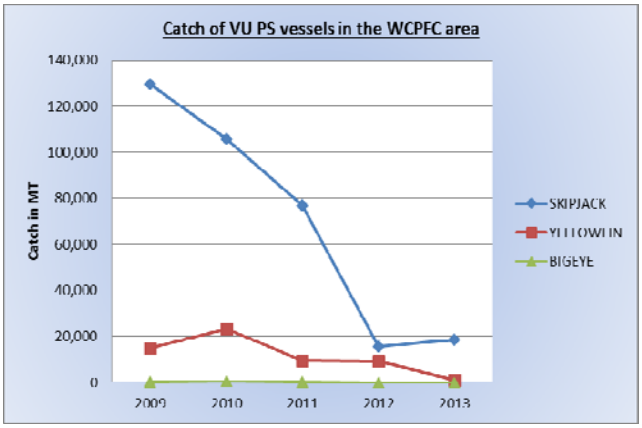
Notes:

1. *2009-2012 catch estimates were determined from logsheet data raised using information on actual vessel activity (e.g. VMS data)*
2. *2012 estimates of logsheet coverage was ~52%.*
3. *2013 catch estimates are based on estimates derived from the Tufman reporting web tool with logsheet coverage ~37%*
4. *Estimates also apply to the WCPO Area (the Pacific Ocean west of 150°W)*
5. *2012-2013 Catches do <u>not</u> include Vanuatu-flagged vessels that fish the FSM Arrangement vessels with HOME PARTY = PNG*

<u>Figure 1. Historical Annual Catch for the Vanuatu Fleet in the WCPFC Convention Area</u>

(a) Longline **(b)Purse Seine**





<u>Table 2. Number of Fishing Vessels Active in the WCPFC Convention Area by Gear and Size Catergory</u>

(a) Longline Distant Water and Offshore

Size class (GRT)	2009	2010	2011	2012	2013
0–10	0	0	0	0	0
10–50	0	0	0	0	0
50–200	12	18	29	38	35
200–500	23	23	24	24	17
500+	24	24	22	12	9

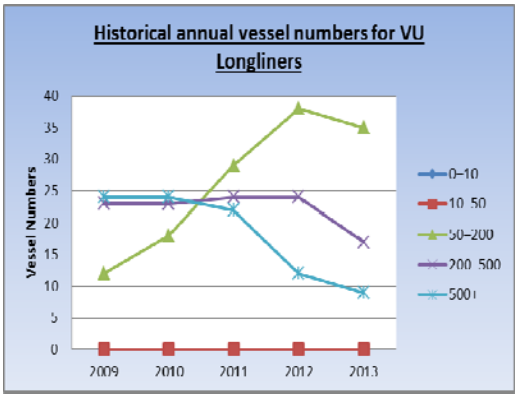
(b) Purse Seine -Bilateral Access

Size class (GRT)	2009	2010	2011	2012	2013
0–500	3	3	3	3	0
500–1,000			0	0	0
1,000–1,500	11	11	13	13	11
1,500+	5	5	6	6	5

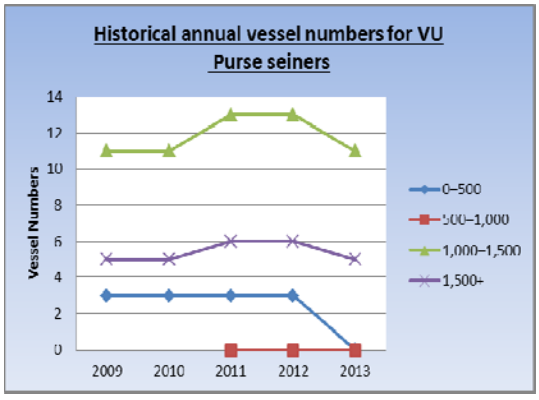
Note: *Fleet cover is based on Tufman Reporting of only vessels who were active (ie, submitted logsheets in Tufman)*

Figure 2. Historical Annual Vessel Numbers by Gear and Size Class for Vessels in the WCPFC Convention Area

(a) Longlines



(b) Purse seines



5. Catch distribution

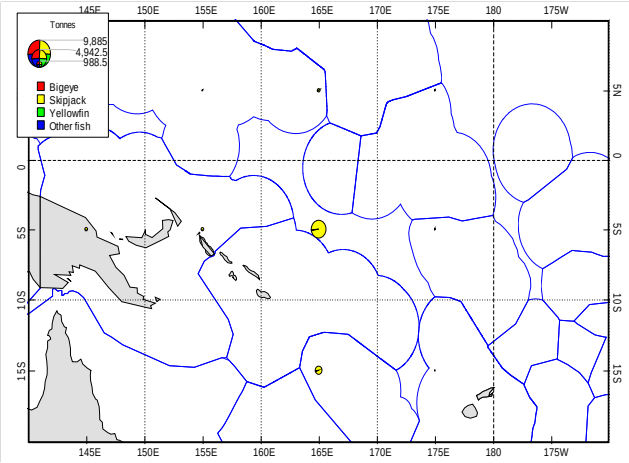
The purse seine fleets were mainly operating within the 5 degrees N and 5 degrees S and between 150 degrees E and 175 degrees W. The effort in the purse seine fishery is measured as days fishing and searching. Figures 3 (b) shows the effort distributions of purse seine vessels that operated under the bilateral agreements. The longline effort is given as 100s of hooks. The 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 in experienced in the south i.e between 10 degrees S and 40 degrees S with a strong concentration in the Vanuatu EEZ in 2012 and also in the Cook Islands EEZ in 2012 and 2013 with a little effort in the EEZs of other coastal states particularly in 2010 (Figure 4(b)) .

Estimated Annual total catches of non-target, associated and dependent species by the Vanautu purse seine fleets and long-line fleets in 2009-2013 has been sought from the TUBS reporting web database as shown in Table 4 and Table 5 as well as in Annex 1 where there is a summary table for all CMMs concerned.

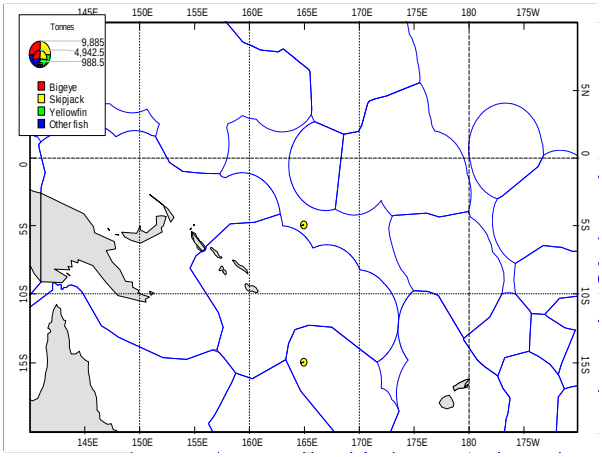
Annex 1 summary tables also provide information on the observed species of interest collected through observer reports for the year 2009-2013 as most of the Observer records were collected by the PNG and FSM observers however Vanuatu in collaboration with PNG has been successful in meeting a required observer coverage on its purse seine vessels that are fishing under the FSM Arrangement. 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.

Figure 3 (a). Annual Distribution of Target Species CATCH for Vanuatu Purse seine vessels active in the WCPFC Convention Area.

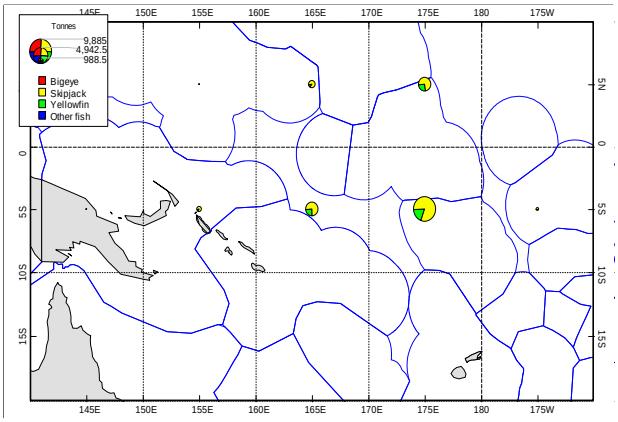
2010



2011



2012



2013

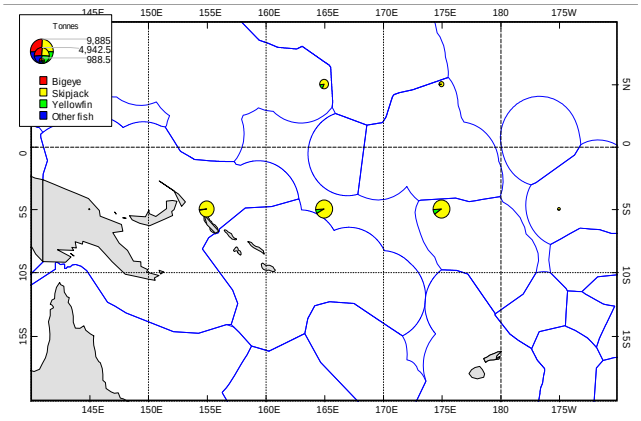
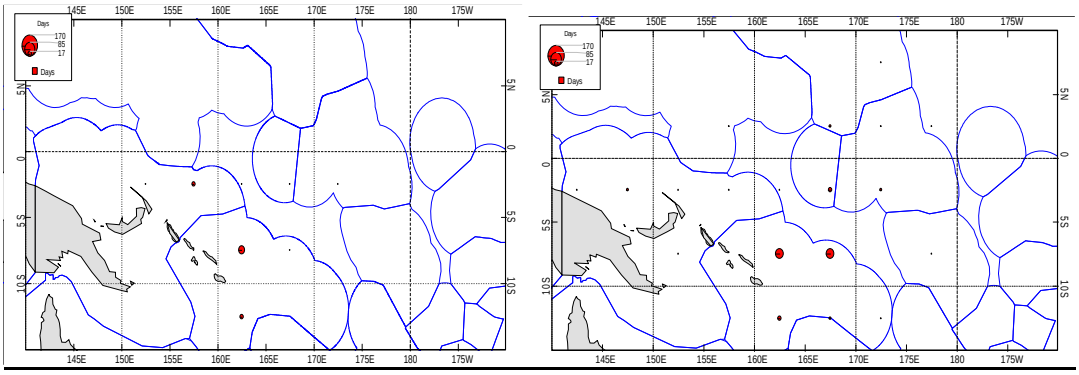


Figure 3 (b). Annual Distribution of Target Species EFFORT for Vanuatu Purse seine vessels active in the WCPFC Convention Area.

2010 **2011**



2012 **2013**

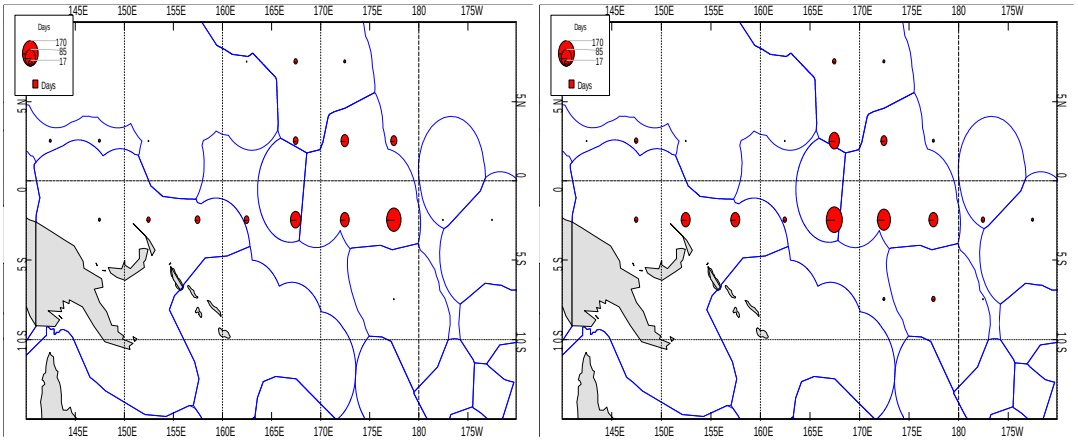
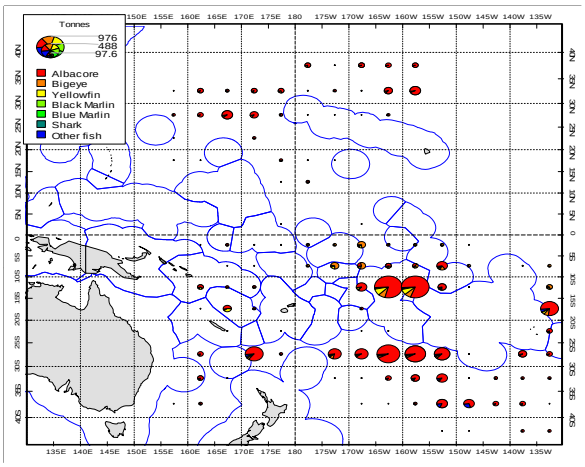


Figure 4(a) Annual Distribution of Target Species CATCH for Vanuatu Longline vessels active in the WCPFC convention area.

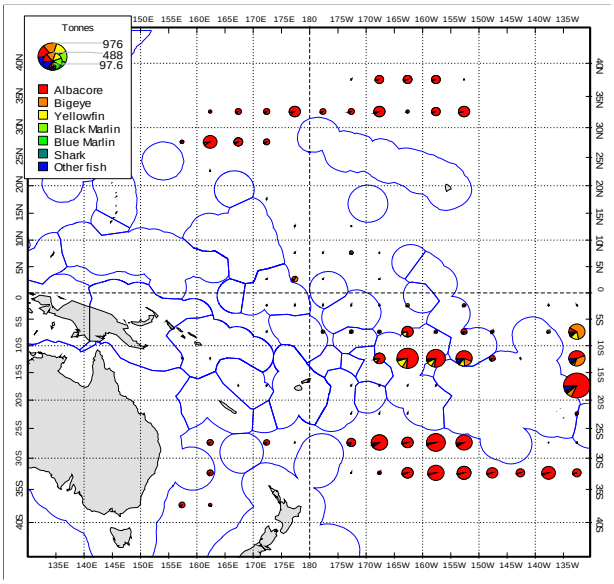
2009



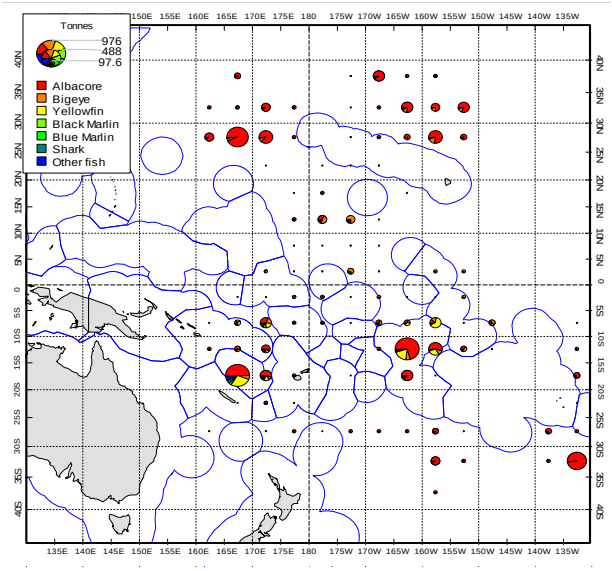
Cont.

Figure 4(a) Annual Distribution of Target Species CATCH for Vanuatu Longline vessels active in the WCPFC convention area.

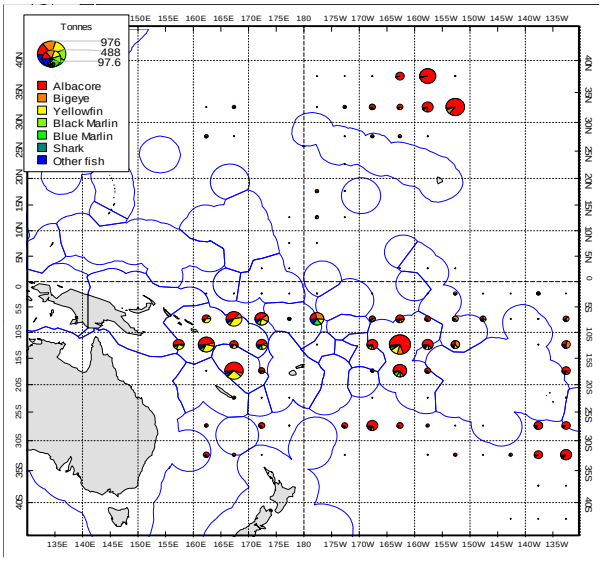
2010



2011



2012



2013

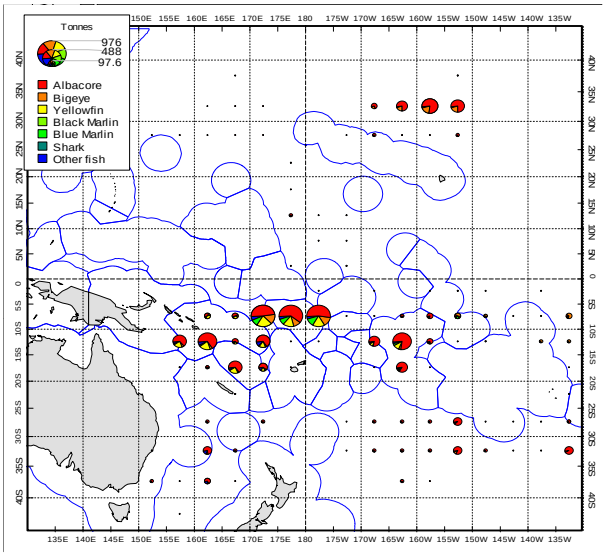
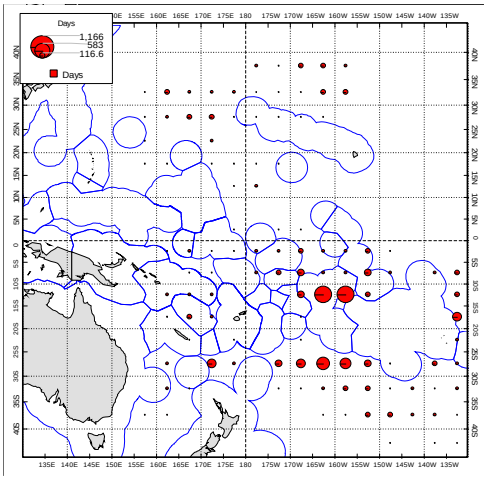
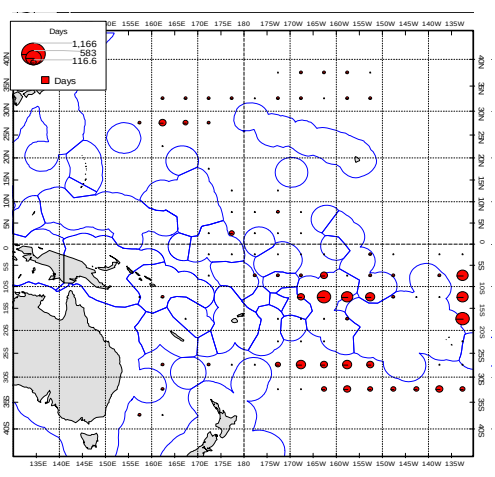


Figure 4(b) Annual Distribution of Target Species EFFORT for Vanuatu Longline vessels active in the WCPFC convention area.

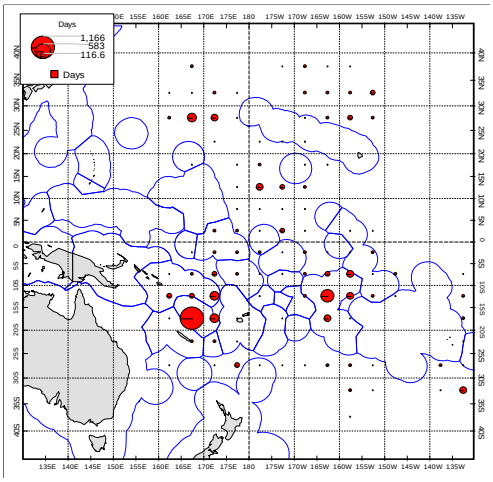
2009



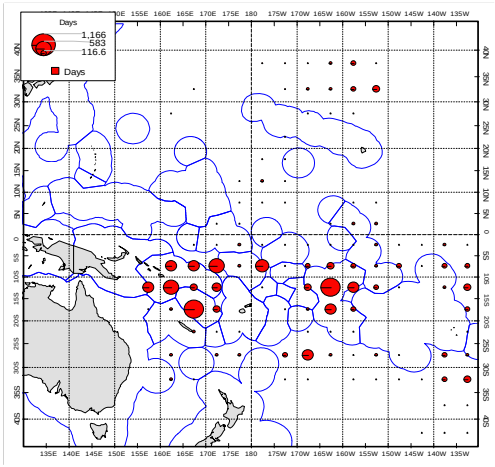
2010



2011



2012



2013

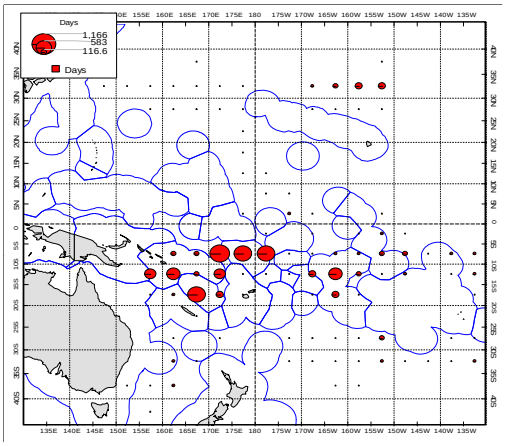


Table 3. Observed annual estimated catches of species catch and effort by the Vanuatu Longline Vessels

	Gear	Category	Species	Number	No. Alive	No. Dead
2009	L	BIRDS	GULLS - TERNS AND SKUAS	1	0	1
2010	L	BIRDS	BIRD (UNIDENTIFIED)	3	0	3
2010	L	MARINE MAMMALS	RISSO'S DOLPHIN	1	1	0
2010	L	MARINE REPTILES	LOGGERHEAD TURTLE	1	1	0
2011	L	MARINE MAMMALS	FALSE KILLER WHALE	1	1	0
2011	L	MARINE REPTILES	LEATHERBACK TURTLE (NEW FAO)	1	1	0
2012	L	n/a	n/a	0	0	0
2013	L	BIRDS	ALBATROSS	1	0	1
2013	L	BIRDS	NORTHERN GIANT PETREL	1	0	1
2012	L	MARINE MAMMALS	RISSO'S DOLPHIN	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 a more reliable estimates in the future.

3. The observer data coverage rate is considered too low (< 0.8%) to produce estimates of species of special interests for this previous years.

Table 4. Annual Estimated Catches of Non-Targeted, Associated and Dependent Species, including Sharks caught by Vanuatu Longline Vessels

Species	2009	2010	2011	2012	2013
Skipjack	1.3	0	10	113.6	95
Black Marlin	26.9	40.1	13.5	27.2	12.4
Blue Marlin	103.8	104	190.8	369.4	342.3
Striped Marlin	64.1	50	47.8	56.9	30.5
Sailfish	0.1	0	1	3.5	41.1
Short Billed Spear Fish	0	0	0.2	0.1	0.9
Swordfish	126.3	144.7	119.7	161.1	104.4
Blue Shark	0	0	1.5	9.7	73.5
Marko Shark	33.2	8	13.2	8.2	18.9
Oceanic White Tip	0	0	0	0.1	0.5
Silky Shark	0	0	0.8	2.3	34.3
Other Sharks	124.3	96	158	247.5	4.8

Other Species	433.4	311.9	317	578.6	479.3

Table 5 (a). Estimated annual coverage of operational catch/effort, port sampling and observer data for Vanuatu Longliners in the WCPFC convention area

Flag	Year	Observer Data		Target tuna catch estimate	Shark species catch estimate (t.)							See Note
		Available ?	Coverage		BSH	FAL	MAK	OCS	POR	SPN	THR	
VU	1995	N	0.00000%	176.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	1996	N	0.00000%	535.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	1997	N	0.00000%	463.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	1998	N	0.00000%	88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	1999	N	0.00000%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2000	N	0.00000%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2001	N	0.00000%	721.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2002	N	0.00000%	7,930.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2003	N	0.00000%	7,059.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2004	N	0.00000%	14,489.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2005	N	0.00000%	13,660.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2006	N	0.00000%	14,245.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2007	N	0.00000%	11,477.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2008	N	0.00000%	9,174.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
VU	2009	Y	0.09452%	16,505.9	260.7	1,808.1	2,129.2	402.2	0.0	178.0	12.7	3
VU	2010	Y	0.20118%	18,188.0	1,567.8	3,834.1	480.2	755.9	0.0	139.4	0.0	3
VU	2011	Y	0.68639%	13,732.5	1,407.2	2,462.8	1,067.3	246.2	0.0	114.4	15.7	3
VU	2012	Y	0.00249%	16,247.2	1,981.6	0.0	0.0	0.0	0.0	0.0	0.0	3
VU	2013	Y	0.12428%	16,959.9	7,891.0	4,088.0	5,117.0	1,155.5	0.0	541.4	38.6	3

NOTES

1. Shark species catch estimates have been determined by raising the nominal observed catch by the coverage rate (observed target tuna catch to annual catch estimates of target tuna). Observer data with coverage rates > 0.8% have only been considered.

2. There are currently no observer data available (for this year) to estimate shark species catches. As an interim measure, Shark species composition data obtained from observers for this fleet in adjacent years have therefore been used to produce estimates of shark species catch. For recent years, processed observer data may become available and will therefore contribute to a more reliable estimate in the future.

Table 5 (b). Estimated annual coverage of operational catch/effort, port sampling and observer data for Vanuatu Purse seiners in the WCPFC convention area

Flag	Year	Observer Data		Target tuna catch estimate	Shark species catch estimate (t.)							See Note
		Available ?	Coverage		BSH	FAL	MAK	OCS	POR	SPN	THR	
flag_id	yy	obs_est	cov	tun_c	bsh	fal	mak	ocs	por	spn	thr	note_no
VU	1994	N	0.00000%	820.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	2
VU	1995	Y	3.28127%	7,100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
VU	1996	N	0.00000%	10,962.0	0.0	3.4	0.0	0.2	0.0	0.0	0.0	2
VU	1997	N	0.00000%	25,701.0	0.0	8.2	0.0	0.4	0.0	0.1	0.0	2

VU	1998	Y	1.94950%	39,335.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
VU	1999	Y	5.93020%	10,070.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
VU	2000	N	0.00000%	37,545.0	0.0	11.8	0.0	0.7	0.0	0.1	0.0	2
VU	2001	N	0.00000%	11,196.0	0.0	3.7	0.0	0.2	0.0	0.0	0.0	2
VU	2002	N	0.00000%	20,348.9	0.0	6.5	0.0	0.4	0.0	0.0	0.0	2
VU	2003	Y	2.08720%	9,836.0	0.0	52.9	0.0	0.0	0.0	0.0	0.0	1
VU	2004	Y	5.04371%	52,304.0	0.0	12.6	0.0	1.8	0.0	0.0	0.0	1
VU	2005	Y	5.32547%	74,731.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0	1
VU	2006	Y	6.77944%	61,903.0	0.0	29.5	0.0	0.0	0.0	0.0	0.0	1
VU	2007	Y	11.54567%	71,281.0	0.0	26.4	0.0	2.9	0.0	0.0	0.0	1
VU	2008	Y	13.73024%	38,718.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0	1
VU	2009	Y	18.00083%	37,906.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0	1
VU	2010	Y	63.70260%	23,770.0	0.1	5.6	0.0	0.0	0.0	1.2	0.1	1
VU	2011	Y	65.54812%	23,382.0	0.0	10.2	0.0	3.6	0.0	0.0	0.0	1
VU	2012	Y	100.00000%	26,167.0	0.0	3.4	0.0	0.0	0.0	0.2	0.0	1

COASTAL STATE REPORTING

5. Coastal-state reporting

During the period 2009 to 2013, the total annual catch for all the foreign fleets that were undertaking fishing operations in Vanuatu had decreased from 5,042.6mt in 2012 to 4,137.20mt in 2013. 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 of years for these Longline vessels in the Vanuatu EEZ. The catch was largely attributed to the Chinese and Taiwanese fleet which recorded over 80% of the total catch for the 2009-2013 periods, and with the Fiji and Vanuatu fleet contributing only 11%. In fact, catches for the Taiwanese fleet have declined in comparison to other fleets since 2011 and slowly picking up pace in 2012 but due to the movement of fishing effort towards the Solomon Islands EEZ there has been a dramatic decrease in terms of catch. On the other hand, catches for the Chinese fleet have steadily decreased during this period. Unraised and provisional estimates for this licensed fleet in 2013 were 1,980mt, 416.1mt and 50.6 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 the using the eRECAP logsheet/VMS reconciliation web tool. The annual estimated tuna catch composition by weight for 2013, was again dominated by albacore (85%), yellowfin (14%) and minor bigeye (12%). 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.

5.1 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 2014 is to establish designated ports for landing catches.

However the newly built processing plant in Port Vila harbor has already been receiving fresh Tuna for Sashimi exports mainly to Japan and also to USA, Australia and New Zealand. In 2013 there were 10 Transshipment permits issued in Port Vila Harbor with 100% Port Sampling coverage (Appendix 1 Table 13).

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

5.2 Annual catches in the Vanuatu EEZ

In the period 2009 to 2013, the total annual catch for the longline fleets that were undertaking fishing operations in Vanuatu EEZ decreased from 5,310.7mt (2011) to 4,137.2mt (2013). This catch reduction was a result of the effort decline that took place for this period of years (Figure 4 (a),(b),(c)). Catch from these fleets were largely attributed to the Chinese and Taiwanese fleet which recorded over 80% of the total catch for the 2008-2012 periods followed by the Fiji fleet contributing only 11%. Catches for the Taiwanese fleet have been declining evidently since 2010 and 2011 and on again from 2012 and 2013 as a result of their large decline in effort as can be seen in 2011.

The annual longline estimated tuna catch composition by weight for 2013, was again dominated by albacore (70.5%), yellowfin (16%), and minor bigeye (3%). These catch proportions were similar to the historical tuna catch compositions (Figure 4). 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. This also applies to the 2013 albacore catch which is estimated to exceed 3,500mt based on unraised data but is likely to have approached 7,000mt if it were raised.

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. Annual catch in Vanuatu EEZ, were sought from Vanuatu and Taiwanese flag vessels, fishing under the Kaoshiung Bilateral Agreement whom are obliged to report their catches annually. 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 Vanuatu Flag Management Authority. 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 Annex 1. 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.

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)
2009	TW	7.0	24.0	320.9	24.7	196.2	42.3	584.1
	FJ	3.0	3.0	9.3	0.4	7.2	0.8	17.8
	ID	1.0	1.0	0.0	0.0	0.2	0.0	0.2
	VU	6.0	15.0	97.3	6.9	66.8	15.1	186.2
	CN	7.0	7.0	35.5	2.4	3.6	3.1	44.6
	TOTAL:	24.0	50.0	463.1	34.4	274.1	61.4	832.9

Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2010	TW	12.0	37.0	350.8	29.0	143.8	45.0	568.8
	FJ	12.0	16.0	166.8	5.7	43.1	12.5	228.1
	ID	1.0	5.0	2.7	0.5	8.8	1.7	13.8
	VU	10.0	37.0	277.6	12.8	118.9	39.3	448.6
	CK	1.0	1.0	1.4	0.1	0.5	0.6	2.6
	CN	45.0	67.0	722.5	17.1	122.4	79.9	941.9
	TOTAL:	81.0	163.0	1,521.8	65.4	437.5	179.0	2,203.7

Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2011	TW	18.0	103.0	756.8	94.7	421.3	150.8	1,423.5
	FJ	15.0	45.0	262.9	19.0	104.9	32.6	419.4
	VU	21.0	110.0	483.8	53.6	289.3	121.8	948.5
	CN	49.0	230.0	1,806.1	43.1	370.3	299.7	2,519.3
	TOTAL:	103.0	488.0	3,309.6	210.3	1,185.9	604.9	5,310.7

Year	FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
2012	TW	9.0	56.0	300.1	46.1	182.4	66.1	594.7
	FJ	7.0	34.0	186.3	28.2	80.0	28.8	323.3
	VU	16.0	80.0	312.5	25.7	165.9	48.4	552.5
	CN	52.0	256.0	2,571.3	63.6	627.3	309.8	3,572.1
	TOTAL:	84.0	426.0	3,370.2	163.6	1,055.6	453.1	5,042.6

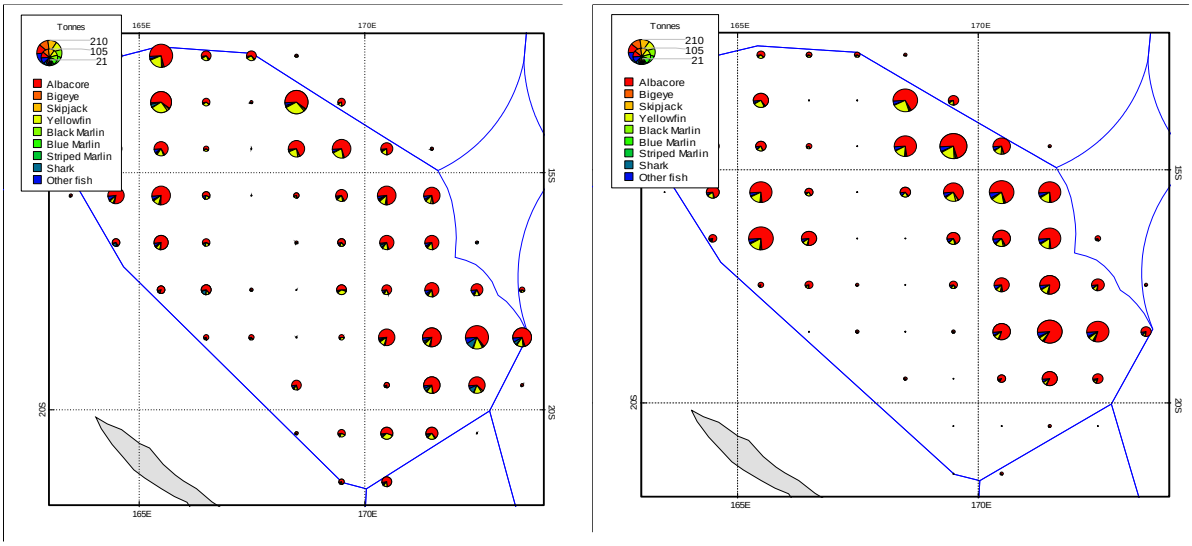
Year	FLAG	Ves	Trip	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)

		sels	s					
2013	TW	9.0	57.0	432.0	38.3	122.5	64.1	656.9
	FJ	5.0	15.0	185.1	9.3	36.0	24.4	254.8
	VU	14.0	74.0	321.2	22.2	102.0	42.8	488.2
	CN	50.0	200.0	1,980.0	50.6	416.1	290.7	2,737.4
	TOTAL:	78.0	346.0	2,918.4	120.4	676.5	422.0	4,137.2

Figure 4. Map of the Annual Distribution of Target Species catch and Effort for Each major Foreign Fleets in the National EEZ

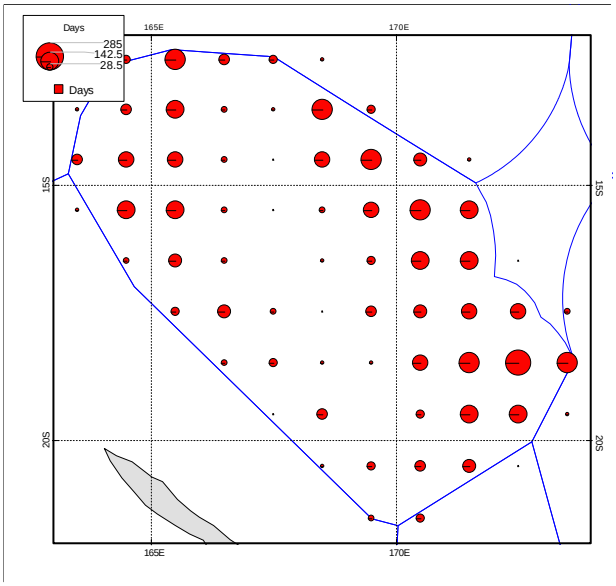
A) CHINESE FLEET- CATCH

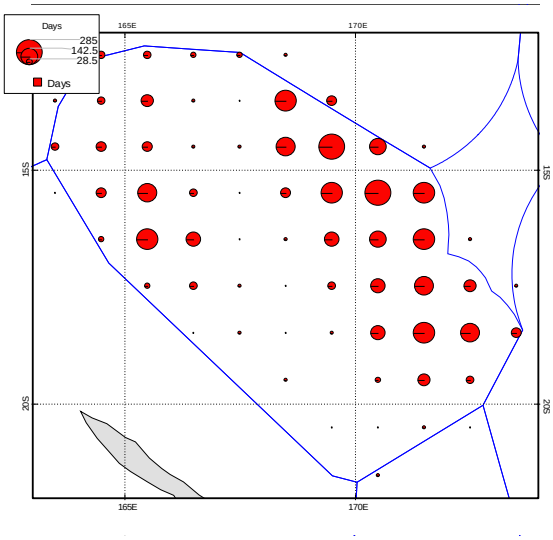
2012 **2013**



CHINESE FLEET – EFFORT

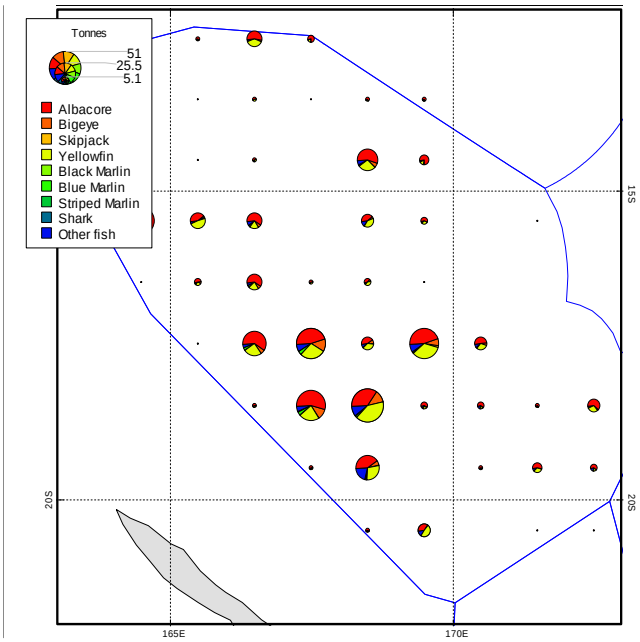
2012 **2013**

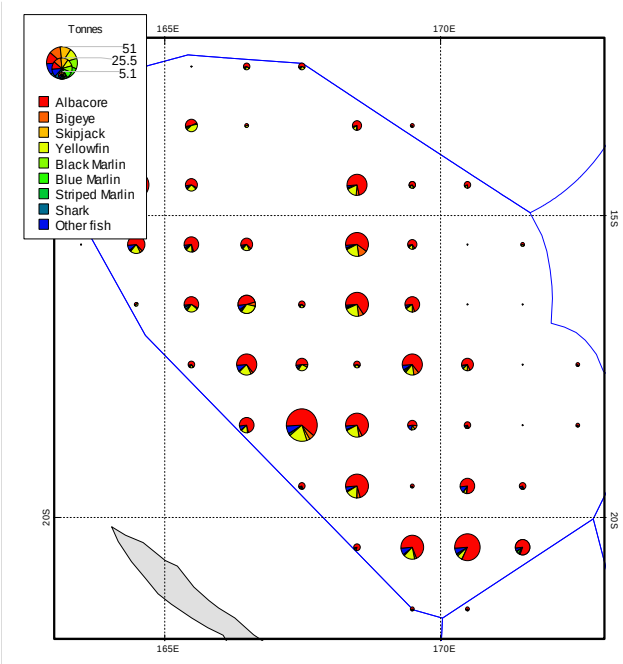




B) TAIWAN FLEET – CATCH

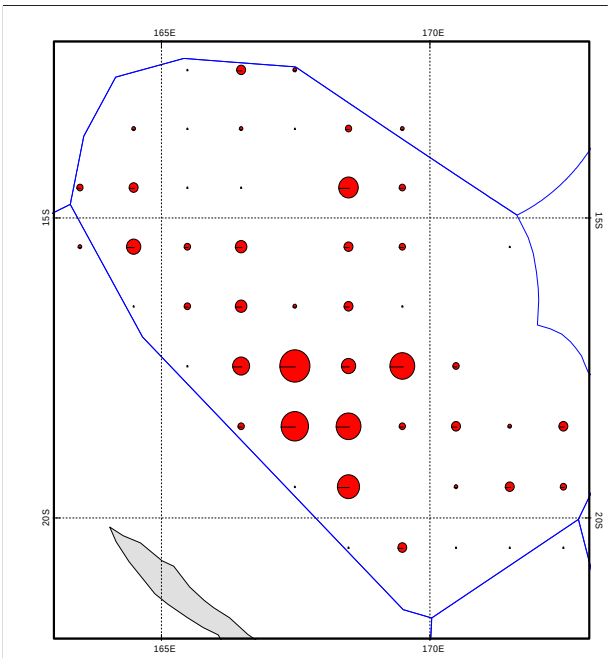
2012 **2013**

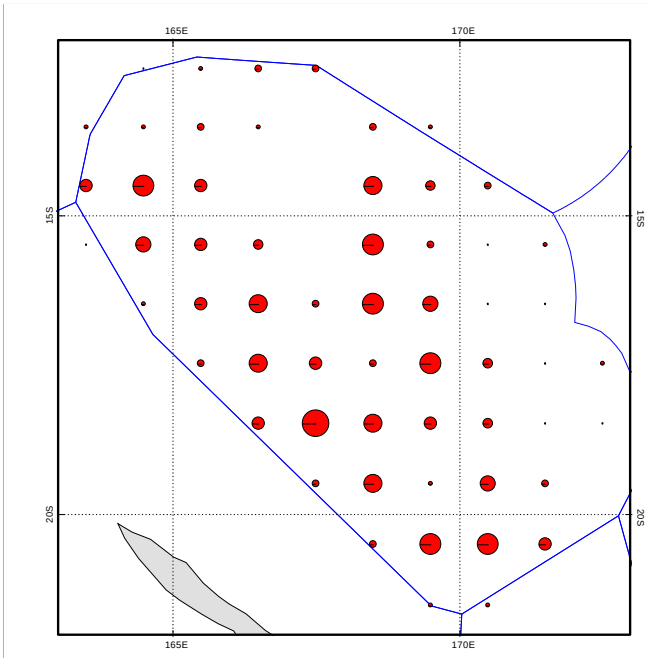




TAIWAN FLEET – EFFORT

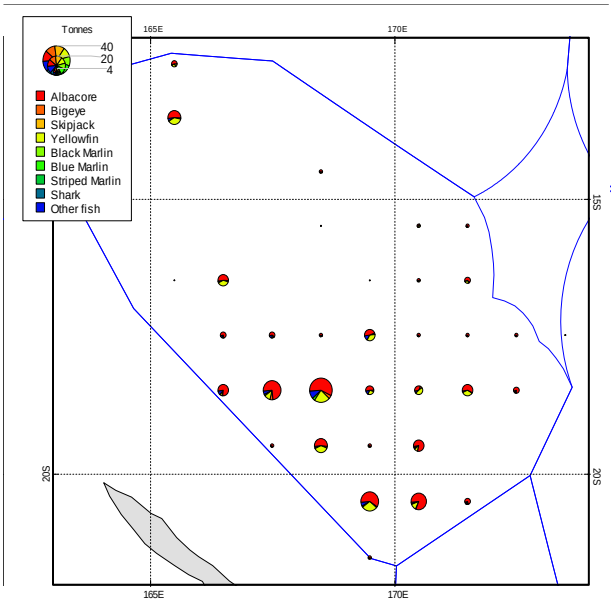
2012 **2013**

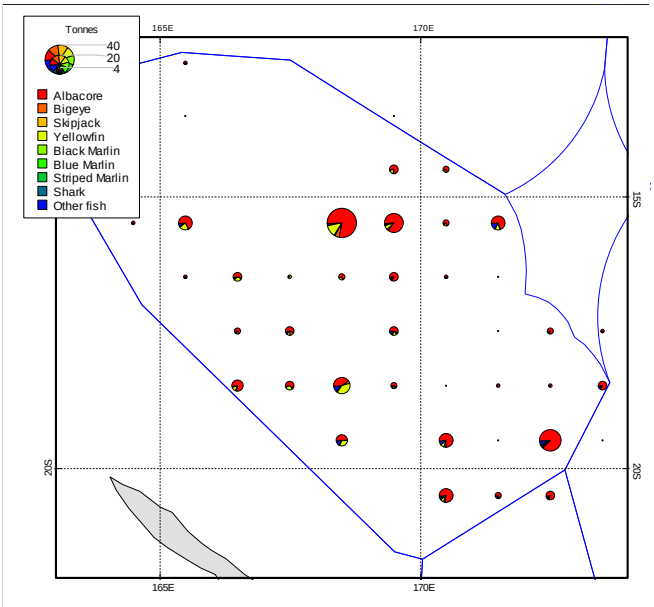




C) FIJI FLEET – CATCH

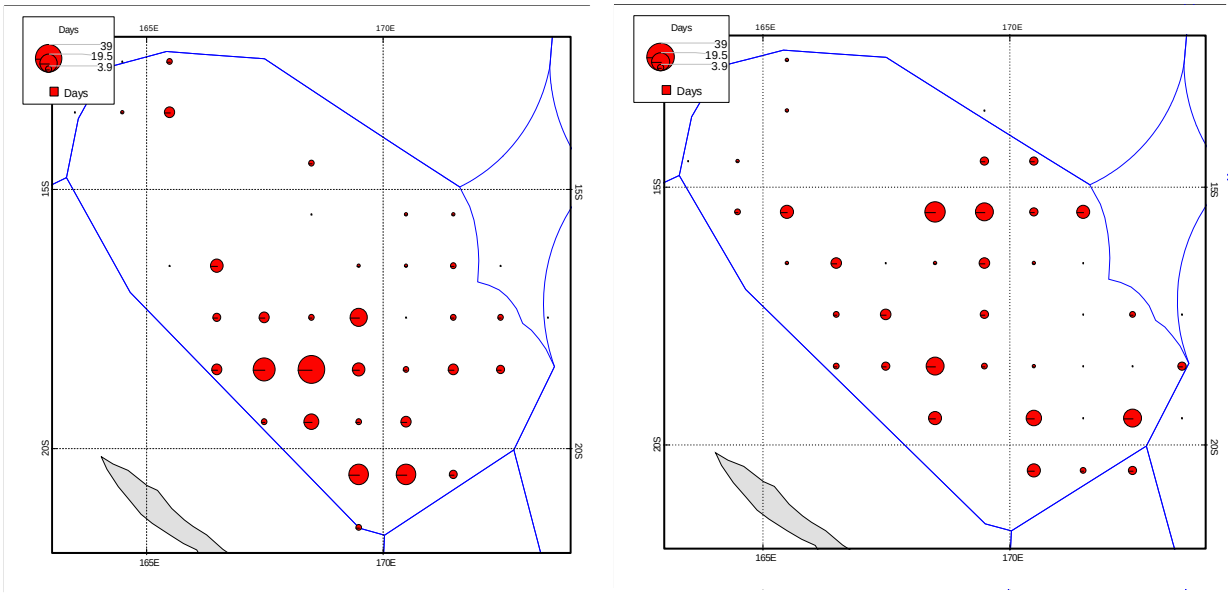
2012 **2013**





FIJI FLEET – EFFORT

2012 **2013**



6. Socio-economic Factors

In 2013 the number of license slightly dropped as most vessels were moving to the Solomon Islands EEZ where fishing was reported to be at a very good peak. Vessels that were offloading their catch in the Vanuatu EEZ through transshipment were also reporting very low catches towards the end of 2013 thus Transshipment in port was not as regular as it used to be in the past.

For local artisanal fisherman due to the very high cost of fuel fishing in FAD's were not a high priority as most Artisanal fisher man target FAD's to catch skipjack for Baitfish.

7. Disposal of Catch

Fresh Tuna landed in Vanuatu by Locally Based Foreign vessels are exported by air to Japan as well as USA, Australia and New Zealand, while fresh Opah is exported to Hawaii. The frozen catch however is transferred to a carrier and exported to canneries in Fiji.

The Foreign fleets unload both their fresh and frozen catch in Fiji which are either taken to canneries or exported to Japan (Annex 1 Table 13).

8. Onshore Developments

The newly built processing plant in Port Vila harbor has already been receiving fresh Tuna since 2009 for Sashimi export to Japan, USA and New Zealand. The Chinese fishing Base is still pending operations due to Governmental issues with regards to Environmental Impact Assessment and land disputes.

9. Future Prospects of Fishery

Vanuatu plans to drop the number of license in 2014 to 75 Foreign License and 40 Locally Based Foreign however the license fee will be increased by 50% of the current fee.

10. Status of Tuna Fisheries Data Collection Systems

(a) Logsheet Data collection and Verification

There has been a slight improvement in the collection of logsheet data, as 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 less than 60%, 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 develop its own E-forms to be used on board all Vanuatu long liners and Vanuatu will make sure all purse seiners flying Vanuatu flag will be required to use the E-Forms that were developed by SPC early this year.

(b) Observer and Port Sampling Programme

Vanuatu established the National Observer and Port Sampling Program in 2008. During the late 2008 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 transshipment and unloading in port however, there is still very limited observer coverage for the Fiji and Solomon Island based fleet operating in the Vanuatu EEZ. Vanuatu has already implemented its 5% coverage on the long distant longliners across the convention area.

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.

Currently about 6 mt of tuna within range length of 90-150 mt is supplied monthly to Japanese sashimi markets and 2 mt to non-Japanese sashimi markets (i.e. Australia, NZ and USA). 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 off load regularly are typically less than 100GRT fiberglass reinforced plastic (FRP) 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. Observers play a large role in collecting data and are referred by scientist as ‘eyes and ears’ of the department or organization.

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 2013 there were 10 transshipments in the Vanuatu port. Eight to ten small-scale tuna longliners off loaded about 25 to 30 MT each frozen catch to a carrier.

11. Research on Tuna Fishery Data collection System

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

ANNEX 1

Table 1: 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.

Table 2: CMM REPORTING

CMM Reference	Description	Response
CMM 05-03	North Pacific Albacore	This is one of the Target Species by Vanuatu long liners and 1372.439MT was reported in 2013
CMM 06-04	SW Striped Marlin	This is not a target species however 151.351MT was reported as by catch from 52

		longline vessels vessel's in 2013
CMM 07-04	Seabirds	Based on the observer reports there were interactions with sea birds;1 Abatros and 1 Northern Giant Petral
CMM 09-03	SW Swordfish	This is not a target species however 1,372.439MT was reported as by catch from 28 vessels that were fishing in the south pacific in 2013
CMM 09-06	Transhipments	All Transhipment in Port and on the High Sea were reported by both fishing vessels and carriers
CMM 10-05	South Pacific Albacore	Based on observer data from 2 vessels there where 23.979MT of SP Albacore reported
CMM 10-07	Sharks	Catches by National Fleet (see Appendix Table
CMM 11-03	Cetaceans	Reported by Observer onboard VU Flag LL in VU EEZ
CMM 11-04	Oceanic White-Tip Shark	34 sharks Reported by Observer onboard VU FLAG LL in VU EEZ
CMM 12-04	Whale Sharks	There was no interactions for Longline and Purse seine fisheries
CMM 12-07	Seabirds	Reported by Observer on National Fleet
CMM 13-01	Tropical Tunas	Reported by Observer on National Fleet
CMM 13-08	Silky Sharks	Reported by Observer on National Fleet
CMM 08-03	Marine Turtles	There was no interactions in the Longline and Purse seine fisheries
CMM 13-01	Discard reporting–by National Fleet	There Was no Data on discards

Table 3: CMM 05-03 – North Pacific Albacore catches by National Fleet

Flag	Year	Catch (Number)	Catch (MT)
VU	2011	262388	3292.507
VU	2012	237655	2610.778
VU	2013	119912	1372.439

Table 4: Table 1. CMM 06- 04 – South – west Striped Marlin catches by National Fleet

Flag	Year	Vessels	Catch (Numbers)	Catch (MT)
VU	2011	52	955.0	46.6
VU	2012	58	1,205.0	68.6
VU	2013	46	626.0	36.2

Table 5: CMM 07-04 – Seabird interactions by National Fleet

N	Ge		Species	Date					# of

o.	ar	Flag			Latitude	Longitude	EEZ	FATE	individuals
1	L	VU	ALBATROSS	14/06/2013	2913.752S	16723.437W	IW	DPD	1
2	L	VU	NORTHERN GIANT PETREL	28/12/2013				RWW	1

Table 6: CMM 09 -03- South Pacific Swordfish catch by National Fleet

Flag	year	Vessels	Catch (Number)	Catch (MT)
VU	2011	28	572.0	30.6
VU	2012	36	1,005.0	44.4
VU	2013	22	342.0	17.1

Table 7: CMM 10-05 – South Pacific Albacore catches by National Fleet

Flag	Year	Vessels	Catch (Number)	Catch (MT)
VU	2011	28	140,626.0	2,208.1
VU	2012	36	378,011.0	4,661.4
VU	2013	22	176,275.0	2,180.5

Table 13(a): Fresh Unloading and Transhipment data for Port Vila Port in 2013
Fresh Unloading:

	Total Summary	YFT_#	BET_#	WAH_#	DOL_#	MLS_#	LAG_#	SWO_#	
		6326	1785	31	31	2	20	0	

Table 13(b):Transhipment:

TOTAL SUMMARY OF TRANSHIPMENT	ALB_#	YFT_#	BET_#	SKJ_#	DOL_#	WAH_#	GBA_#	MLS_#	SWO_#	BUM_#	TST_#	LAG_#	SFA_#	SSP_#	BLM_#	LEC_#	OIL_#
	3814 3	1453	372	1919	2448	1384	255	116	170	184	7	584	199	336	18	363	2