SCIENTIFIC COMMITTEE
SIXTEENTH REGULAR SESSION

ELECTRONIC MEETING
11-20 August 2020

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

WCPFC-SC16-AR/CCM-28

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 2020	**YES**

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ABSTRACT

The major tuna species caught from the Foreign fishing vessels in the Vanuatu EEZ in 2019 was dominated by69% of albacore, 18% of yellowfin, 3% of bigeye and lastly 10% for others species of the total catch. In 2019 there was a reduction in catch compared to 2018 due to a reduction in fishing effort (number of vessels and trips). Fishing however from the years 2016 to 2017 had seen an increase in catch as vessels moved back into the EEZ to fish. The fluctuation in catch varies between the years depending on access to onshore facilities and good fishing patterns. In 2018 a total of 7,096.8Mt of fish was recorded compared to 2019 where 6,768Mt of fish was reported.

In the period 2016 – 2019 the annual catch estimates of the Vanuatu longline fleets in the WCPO showed a reduction from 21,244Mt in 2015 to 9,964Mt in 2016 but then increase to 16,107Mt in 2017 and again to 16,867Mt in 2018. In 2019 however, catches reduced to 10,926Mt and this was due to the reduction of fishing effort and the number of licensed vessels over these periods.

Purse seiners on the other hand experienced an increase in catch estimates between the years 2015 to 2019 due to the increase in vessel number. In 2015, a total of 8,344Mt of fish was recorded and this figure increased to 12,502Mt in 2018 and in 2019 where a total of 24,847Mt was recorded the highest in the 5 years. This catch was dominated by skipjack making up 90% of the catch followed by Yellowfin at 8% and lastly bigeye at 1%.

Raised 2019 data shows that catches of the main tuna species for Purse seines increased from 5,162Mt of skipjack in 2017 to 10,115Mt in 2018 and further to 24,406Mt in 2019. Longline vessels however, experienced a decrease in catches of Albacore from 7,260Mt in 2018 to 5,675Mt in 2019.

Since 2014, locally based vessel operation had ceased as vessels were based entirely in Fiji and the Solomon islands, however in 2019, locally based vessels moved back to fish in the Vanuatu EEZ where unloading of fish was experienced from 6 locally based foreign fishing vessels offloading fish into the Fish processing plant in Port Vila. These operations were planned to be more frequent in the year 2020.

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 has 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*.). 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 fishing 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 2015 to 2019. 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 DORADO database and which were originally collected and verified by the Vanuatu Fisheries Data Management Unit (VFDMU).

Vanuatu recognizes that there are critical data 'gaps' that need attention and focus on. Therefore, with the limitation of resources, the department has been working closely with SPC and FFA to collect as much information and data as possible to fill in these gaps. The delegation of designated ports recognized as PSMA countries for our Flagged Vessels have been established however are yet to be implemented and these will enable us to monitor landings of fish in foreign ports including those in Suva, Levuka and Pagopago which are currently the ports mainly being utilized.

FLAG-STATE REPORTING

2. Information on Flag-state Reporting

Vanuatu is currently a member of WCPFC, IATTC, SPRFMO and has ratified the NPFC. 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 6 purse seiners that are under Bilateral Fishing Agreements and 72 long-line fishing vessels which are active in WCPFC in 2019.
The Vanuatu fleet consists of purse seine and longline vessels fishing between the Pacific and Indian Ocean. Fishing inside the Exclusive Economic Zones (EEZ) of coastal states had been possible by way of Bilateral Fishing Access (BFA) for both longliners and purse seiners. Vanuatu currently operates a vessel registry, the Vanuatu International Shipping Registry (VISR). The VISR has recorded over 100 vessel registrations since 2014, and currently there is a total of 94 vessels on the registry that are actively operating. 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 ocean.

3. Catch and Effort Trends

The annual catch and effort estimates have been estimated for the Vanuatu fleet operating under bilateral arrangements and the large scale longline vessels (LSLV) operating in the wider WCPFC Area. The general observation since 2013 was that there has been a variation in the 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. Raised estimates for the longline fleet in 2019 were 5,675Mt for albacore, 2,899Mt for bigeye and 1,356Mt for yellowfin respectively and these catch estimates were determined from logsheet data raised using information on actual vessel Activity (VMS data). During the period 2015-2019, 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 2015 being 11,430Mt and the lowest in 2016 as 4,818Mt. The highest catch for bigeye was in 2016 and 2017 with 7,260Mt. Bigeye catches however showed a reduction in catch from 2015 record of 5,603Mt 2,845Mt in 2016 but increased to 7,260Mt in 2018 and then reduced again to 2,899Mt in 2019. However, an increase was experienced in 2019 with 1,356Mt of Yellowfin compared to 2018. Albacore continues to be the dominant species in the catch for 2019 followed by bigeye and then yellowfin. Effort for the longline fishery has experience a

slight reduction from 2015 to 2017 and then a slight increase from 2017 to 2018 and then another reduction from 2018 to 2019. This increase in evident through the increase in effort which is measured by the number of vessels license and number of days fished and sets deployed.

The purse seine fleet that operated under bilateral arrangements recorded a decrease in total catch from 2015 and 2016 levels which was 8,344Mt to 4,414Mt but improved in 2017 to 6,845Mt. This further increased to 12,502Mt in 2018 and the highest in 2019 with 26,847Mt (Table 1(b)). The effort in the total number of sets had also decreased from this period of 2015 to 2016 and increased from the period of 2106 to 2019. The reduction in effort was caused by the reflagging of vessels to PNG and US to fish under the FSM arrangement. During this period, the main tuna species in the catch being Skipjack also showed a decrease with a reduction of 5,162Mt from 2015 levels to the lowest record of 3,806Mt in 2016, but then increased to 5,445Mt in 2017 and then a further increase to 10,115Mt in 2018 and the highest record of 24,406Mt in 2019. This is also the same for the other two species Yellowfin.

The purse seine fleets were mainly operating within the 5 degrees North and 5 degrees South and between 150 degrees East and 175 degrees West. The effort in the purse seine fishery is measured as days fishing and searching, Figures 2)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 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 South and 40 degrees South and this effort has increase since 2016 from 2017 which had recorded tremendous reduction since 2015. This can be seen Figure 2)a) where catch has increased for both the north and south pacific region targeting Albacore.

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.

Estimated Annual total catches of non-target, associated and dependent species by the Vanuatu purse seine fleets and long-line fleets in 2015-2019 has been sought from the DORADO reporting web database as shown in Table 3 and 4 and as well as in Annex 1 where there is a summary table for all CMM's concerned.

Appendix 1 summary table also provide information on the observed species of interest collected through observer reports for the year 2019 by ROP observers on Purse seiners and by Vanuatu observers for the Vanuatu longliners. 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). 2018 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
2015	11,430	2,097	5,603	186	0	74	736	179	939	21,244
2016	4,818	1,454	2,845	169	0	25	361	40	252	9,964
2017	6,043	1,437	7,260	239	2	5	367	87	667	16,107
2018	7,260	1,269	7,260	140	0	4	270	67	597	16,867
2019 – Retained	5,675.789	1,356.678	2,899.852	160.531	0.136	2.130	244.987	60.229	525.882	10,926.214
2019 - Discarded	0	0	26.813	0	0	0	28.24	0	311.65	366.703

Notes:

- *Catch data for 2015-2019 have been Raised using VMS data*
- *2019 logsheet coverage was raised from 88.86% of logsheet coverage data*
- *Data was derived from the Dorado web tool*

Table 1(b). 2018 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)
2015	7,233	807	304	8,344
2016	3,806	282	326	4,414
2017	5,162	1,051	632	6,845
2018	10,115	2,154	233	12,502
2019 - Retained	24,406.74	2,166.43	273.98	26,847.15
2019 - Discarded	417.07	10.59	1.31	428.97

Notes:

- *Catch data for 2015-2019 have been Raised using VMS data*
- *2019 logsheet coverage was raised from 80.66% of logsheet coverage data*
- *Data was derived from the Dorado web tool*

Table 1(c). 2019 Annual catch estimates for the National (Offshore) Fleet in the WCPFC-CA for Shark species – Longline.

Species	2019 (MT)
BLUE SHARK	522.002
SILKY SHARK	0
MAKO SHARK	48.036
OCEANIC WHTETIP SHARK	0
THRESHER SHARK	26.97
PORBEAGLE SHARK	0
HAMMERHEAD SHARK	0

Note:

- *Catch reports retained catches of the Sharks*
- *Catch were Raised from 80.86% logsheet coverage. Source of Data: Dorado*

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

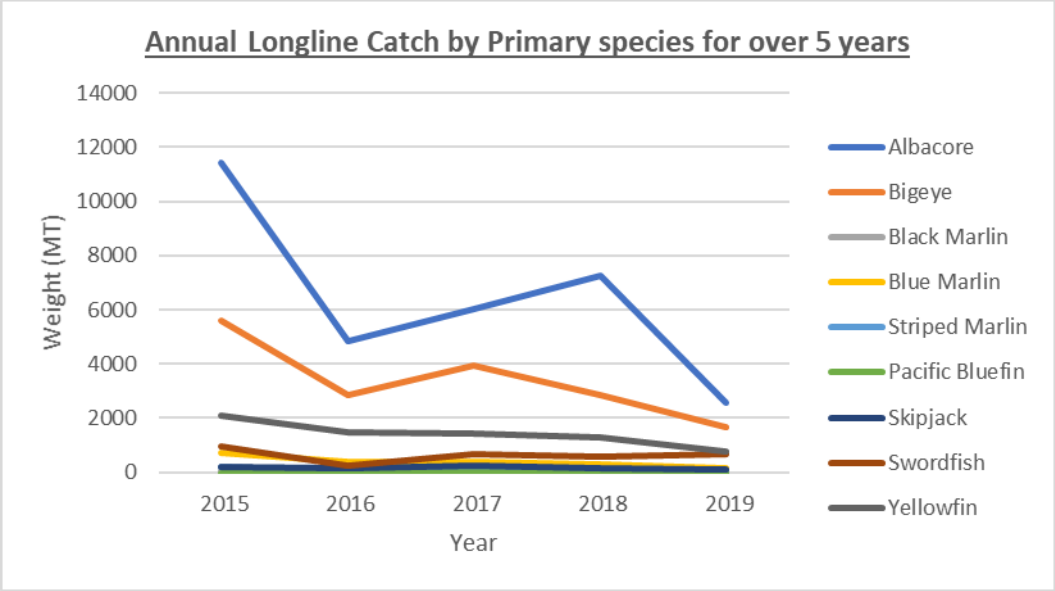


Figure 1(b) Historical Annual Catch and Effort estimates for the National Purse seine Fleet within the WCPFC-CA

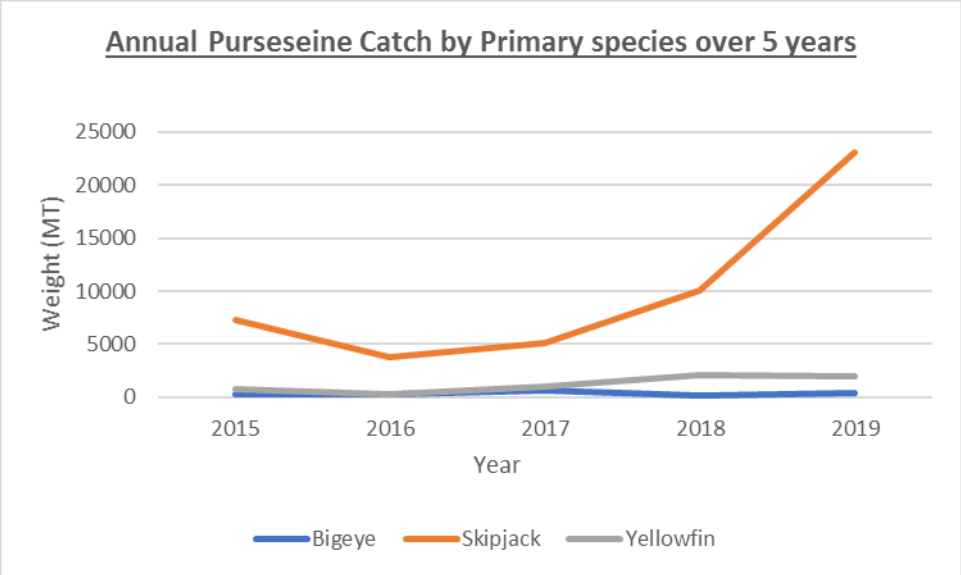


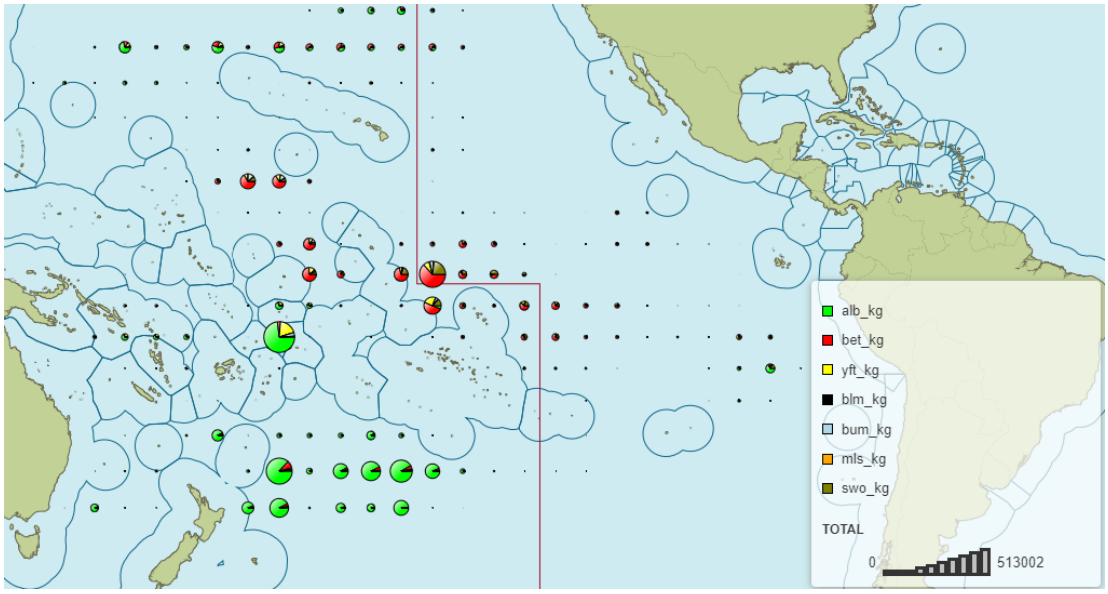
Table 2) Annual raised catch estimates for the Vanuatu longline vessels, for tuna and billfish by Broad Ocean areas

Area	Year	ALB	BET	YFT	SKJ	PBF	BUM	BLM	MLS	SWO
WCPFC	2019	5,675.78	2,899.85	1,356.67	160.53	0.13	244.98	2.13	60.22	525.88
	2018	7132.46	2826.13	1116.20	122.60	0.43	265.53	4.013	63.32	546.91
WCPFC Convention Area (N of Equator)	2019	1,141.47	N/A	N/A	N/A	0.05	N/A	N/A	18.07	102.35
	2018	1028.52	N/A	N/A	N/A	0	N/A	N/A	23.73	136.34
WCPFC Convention Area (S of Equator)	2019	1,204.89	N/A	N/A	N/A	0.07	N/A	N/A	9.31	104.28
	2018	4071.74	N/A	N/A	N/A	0	N/A	N/A	17.69	244.79
WCPO	2019	2,062.22	1,292.99	600.28	N/A	N/A	N/A	N/A	23.74	131.66
	2018	4743.21	1789.32	733.10	N/A	N/A	N/A	N/A	33.69	263.87
EPO	2019	306.1	203.63	102.75	0.21	0	15.94	0.05	18.95	338.67
North Pacific Ocean	2019	1,141.47	N/A	N/A	N/A	0.05	N/A	N/A	18.07	102.35
	2018	1067.04	N/A	N/A	N/A	0	N/A	N/A	50.13	199.10
South Pacific Ocean	2019	1,204.89	N/A	N/A	N/A	0.07	N/A	N/A	9.31	104.28
	2018	4330.19	N/A	N/A	N/A	0.36	N/A	N/A	45.48	59.87

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

2018



2019

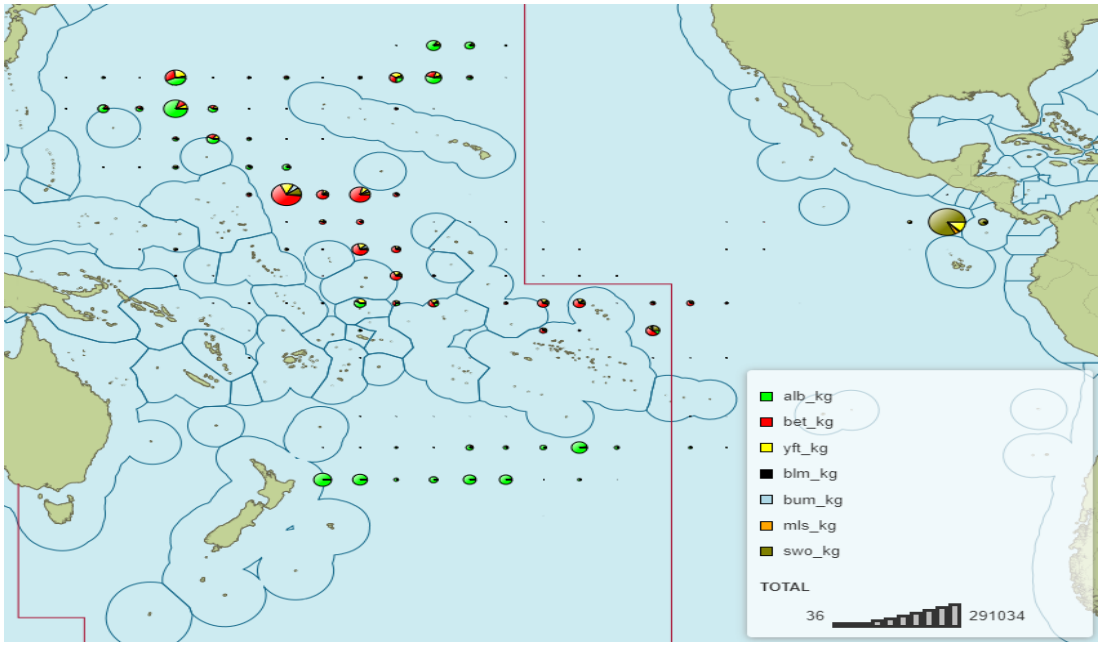
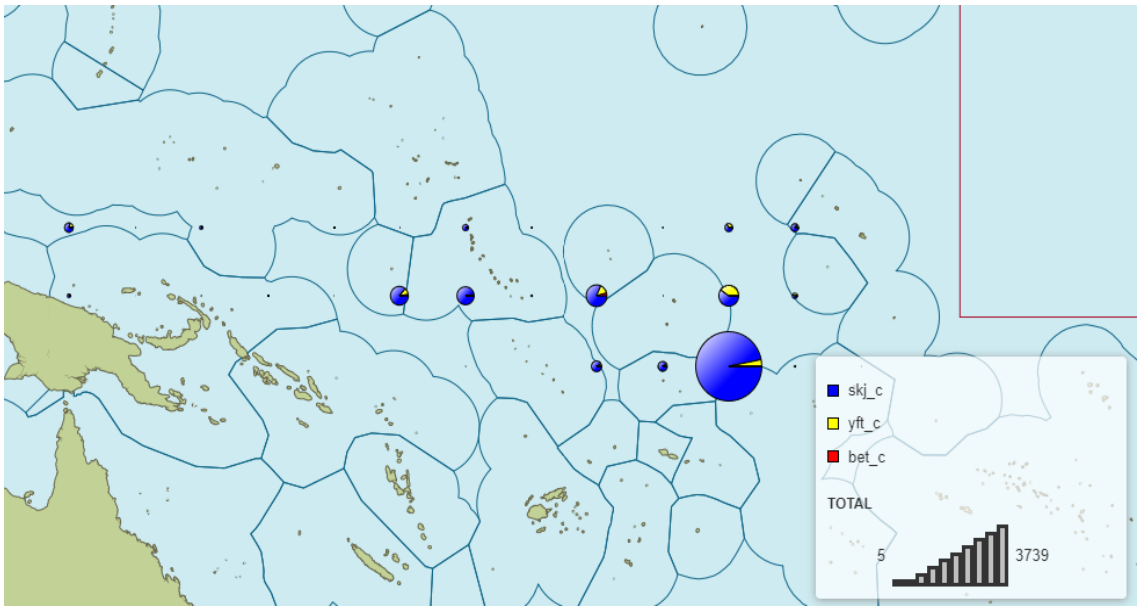


Figure 2(b). Annual Catch distribution (1°x1°) of tuna species for Purse Seine Fleet within the WCPFC-CA

2018



2019

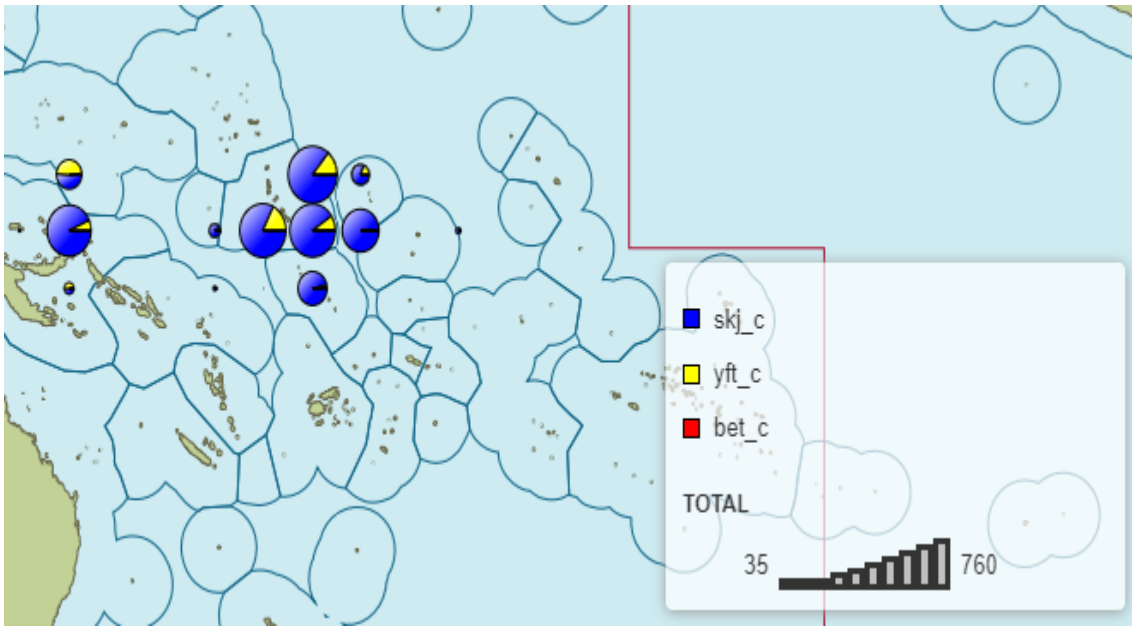


Table 3. Observed annual estimated catches of Species of Special interest (seabird, turtle and marine mammals) by gear for the National fleet in the WCPFC area.

Year	Gear	Category	Species	Number	No. Alive	No. Dead
2019	PS	WHALE SHARK	WHALE SHARK	4	4	0
	PS	MARINE MAMMALS	FALSE KILLER WHALE	3	3	0
	PS	MARINE MAMMALS	BRYDE'S WHALE	3	3	0
	L	BIRDS	BIRD (UNIDENTIFIED)	1	0	1
	L	MARINE MAMMALS	ROUGH-TOOTHED DOLPHIN	5	4	1
	L	MARINE REPTILES	LEATHERBACK TURTLE	1	1	0
	L	BIRDS	LAYSAN ALBATROSS	1	0	1
	L	BIRDS	ALBATROSS NEI	4	0	1

NOTES:

- *Observer coverage for LL is ~4.1% and PS at ~90.7%*
- *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.*

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

Species	2015	2016	2017	2018	2019
BLUE MARLIN	736	361	367	270	383.79
BLACK MARLIN	74	25	5	4	4.013
PACIFIC BLUEFIN	0	0	2	0	0.334
STRIPED MARLIN	179	40	87	67	95.576
SWORDFISH	939	252	667	597	461.719
BLUE SHARK	810.97	525.64	845.62	1,448.88	641.01
SILKY SHARK	23.67	8.45	3.25	0.56	0
OCEANIC WHITETIP SHARK	0.06	0	0.15	0.36	0
MAKO SHARK	115.68	71.42	79.27	166.74	59.024

NOTES:

- *Estimates are raised based on 80.86% logsheet coverage*

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

Year	00-50 GRT	51-200 GRT	201-500 GRT	500+ GRT	Unknown GRT	Total Vessels
2015	2	32	18	23	0	75
2016	2	31	3	13	0	49
2017	2	31	3	13	0	49
2018	0	28	16	25	0	69
2019	0	14	11	15	0	40

Note: *Fleet cover is based on DORADO reporting of vessels who are active (ie, submitted logsheets and have VMS data in Dorado for reconciliation)*

(b) Purse Seine -Bilateral Access

Year	00-500 GRT	501-1000 GRT	1001-1500 GRT	1500+ GRT	Unknown GRT	Total Vessels
2015	0	0	0	3	0	3
2016	0	0	0	3	0	3
2017	0	0	0	3	0	3
2018	0	0	2	3	0	3
2019	0	0	6	0	0	6

Note: *Vessel number is sought from the Vanuatu License listing for 2019*

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

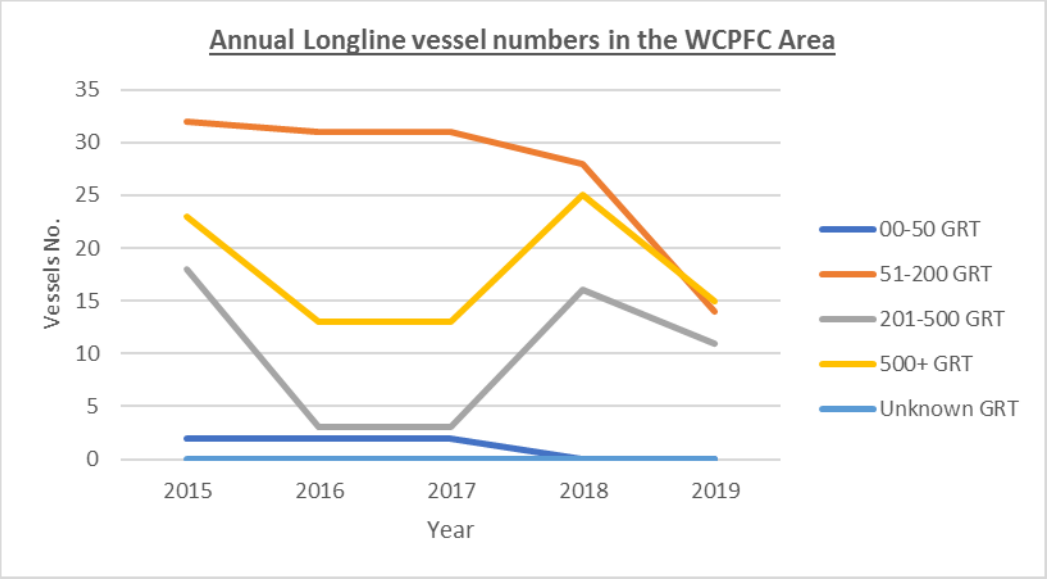
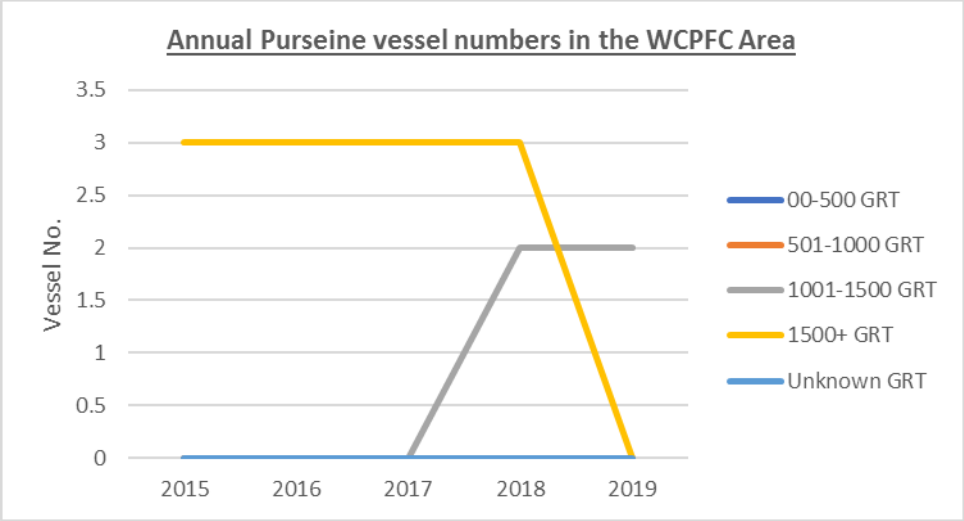


Figure 3) b) Annual vessel numbers for the National Purse seine fleet in the WCPFC-CA



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 decreased from 2013 and then rose again from 2016 to 2017 where it then decreased in 2018. It is noted that high catches were usually obtained with high effort.

6. Catch and Effort Trends

During the period 2015 to 2019, the total annual catch for all the foreign fleets in Vanuatu EEZ had reduced from 2013 to 2015 but increased from 6,780.17MT in 2013 to 7,167Mt in 2016 and a further decreased from 7,096Mt in 2018 to 6,768Mt in 2019. The reduction in catch from 2013-2015 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 85% of the total catch for the 2015-2019 and which dominated the entire catch in 2019. Fishing effort continued to decrease from 2014 to 2015 from 65 vessels to 49 vessels but increase to 74 vessels in 2016 and then reduced from 72 vessels in 2018 to 64 in 2019. The reduction in the last few years was due to the shift towards the eastern pacific where fishing was believed to be very good and after 2015 vessels started coming back to fish in the VU EEZ. Unraised and provisional estimates for this licensed fleet in 2019 were 5,114Mt, 1,105Mt and 207Mt for albacore, yellowfin and bigeye respectively and these catch estimates

were determined from logsheet data. The annual estimated tuna catch composition by weight for 2019, was again dominated by albacore (69%), yellowfin (18%) and minor bigeye (3%).

In 2016, Catch rates however improved compared to 2015 levels due to the increase in effort which is recorded as the number of fishing vessels fishing as well as the number of hooks used. Logsheet coverage for 2019 is averaged at 81%. Thus, catch figures are sure to improve as logsheet coverge is improved from currentl level as can be seen in Table 6.

The annual longline estimated tuna catch composition by weight for 2019, was again dominated by albacore (77%), yellowfin (20%) and minor bigeye (3%).
These catch proportions were similar to the historical tuna catch compositions.
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 91 thousand 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

2018

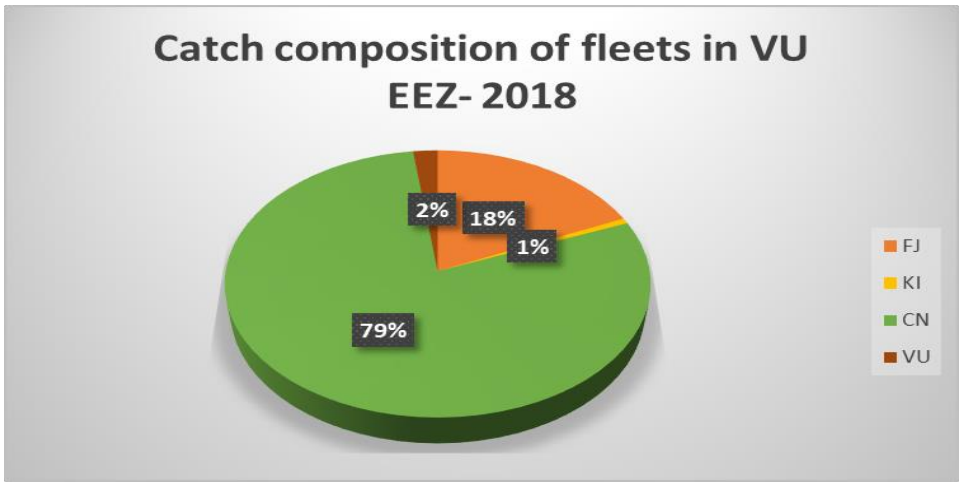
FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
FJ	13	39	890.248	50.615	260.825	92.118	1293.806
KI	1	1	33.489	0.272	7.97	3.085	44.816
CN	56	191	4102.962	151.51	797.531	564.05	5616.053
VU	2	8	87.725	5.25	39.514	11.711	144.2
Total	72	239	5114.424	207.647	1105.84	668.941	7096.852

2019

FLAG	Vessels	Trips	ALB Catch (MT)	BET Catch (MT)	YFT Catch (MT)	OTHER Catch (MT)	TOTAL Catch (MT)
FJ	8	18	398.455	23.335	122.807	42.729	587.326
SB	1	1	0.26	0	0.02	0.13	0.41
CN	54	209	4253.155	197.439	1073.456	623.782	6147.832
Total	64	229	4677.631	221.487	1202.485	667.363	6768.966

Note: Data is sought from Dorado with 2019 logsheet coverage summary at 81%

2018



2019

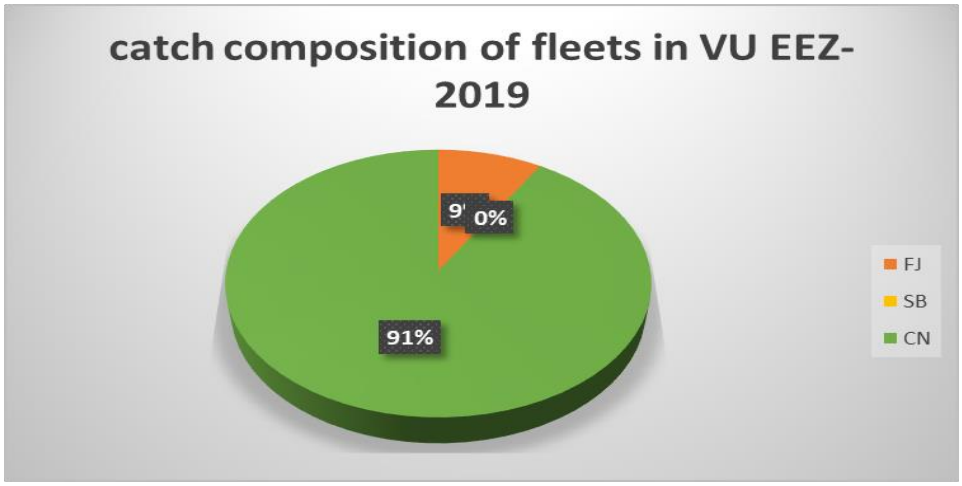
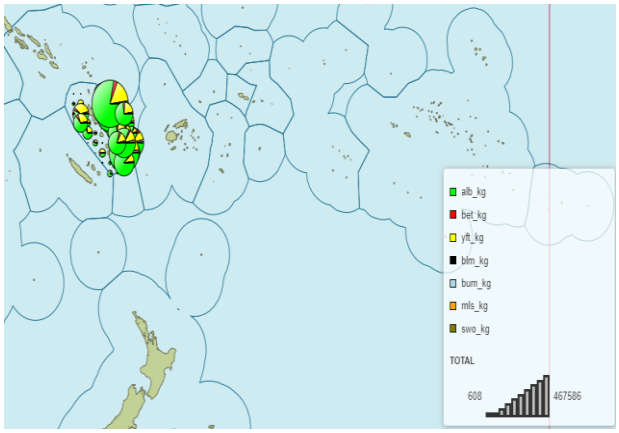
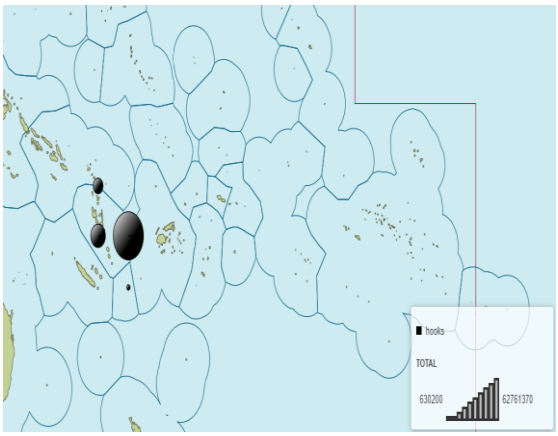


Figure 4). Annual Catch distribution of target tuna species by Major foreign Longline fleets in Vanuatu EEZ.



2019-Catch



2019-Effort

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 low catches towards the end of 2013 to early 2014 thus Transshipment in port was not as regular as before and towards the end of 2014 Transshipment in port has ceased.

For local artisanal fisherman, fishing in FADs have recently become a priority with the sudden reduction in fuel costs as more Artisanal fisherman target FAD's only to catch skipjack for Baitfish.
The TUFMAN2 database has been fully utilized since July 2016 after the shift from TUFMAN 1 which is now only used for licensing. The TAILS system has also been trailed out in Vanuatu and has been successfully set up to 19 communities who are actively sending in coastal data via Tablets into the TUFMAN2 online system. Upon the successful completion of the 2 year trial, the Vanuatu government has now embarked on using TAILS as its primarily data collection tool for coastal fisheries and as of the end of 2019, 35 communities from 4 provinces are engaged in collection activities with plans to expand to all provinces in 2020. The RIMF FFA database has been utilized to cater for as the recording of Landing and Unloading data, transshipment data as well as MCS boarding and inspection information. Fishers including small skiffs and motorized canoes are being registered within the TAILS system with the objective of enhancing the capacity to collect data for coastal, deep bottom and pelagic fisheries.

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 develop fishery operation. 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. The process of development of a new wharf is also part of the plan to allow for the vessels to harbor in Port Vila to carry out their activities and this process has began as of early this year.

9. Future Prospects of Fishery

Vanuatu has maintained its position to limit the number of license to 70 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 2016 was to move to the TUFMAN 2 database which allows for the sharing of logsheet data between countries to which licensed vessels operated. This sharing has allowed access to view Logsheets from vessels who are license to operate in our waters with other members sharing the same interests. And this is currently being fulfilled in 2017 as logsheet data is being shared by countries which has significantly reduced the amount of work load on entering data and giving more time to fixing and validating the data.

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

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 logsheet coverage based on VMS Data was 81% for 2019 and is likely to improve as more outstanding data are received and entered. Whereas for the Vanuatu flag vessels the coverage for Longline for 2019 is 80.86% which is obtained through reconciliation with VMS data sought from the Vanuatu VMS system, this is expected to rise once all missing logsheets are identified and entered. For Purse seine vessels, logsheet coverage from 2019 has been at 80.66%. Vanuatu is currently rolling out E reporting on its vessels and so far 9 have started reported with the hope to improve coverage with more of its vessels in 2020.

Assistance from trainings held by SPC on data verification has assisted in allowing data verification to be done nationally by officers as a means of improving data quality and compliance. Assistance in the entry of backlog data by SPC has also been supportive to reduce data entry backlog and support catch estimates compilation.

(b) Observer and Port Sampling Programme

The Vanuatu Observer program established in 2008 and now has 54 regional certified PIRFO observers who observe on Purse Seiners, Long Liners and Fish Carriers that are operating in the WCPFC area. Since its establishment in 2008, Fisheries Observers have been involved in Longliners and Purse seiner vessel operations and later covering fish carrier vessels in the effort to collect more information on carrier vessels at sea.

In 2017, Vanuatu National Observer Programme has managed to put in place its first Emergency Action Plan (EAP) and Standard operational Procedures. This is a great improvement to the programe. Further to that, observers are now also being insured during trips.
The programme has also purchased safety gears such as 2-way In Reach Communicating Device, Personal Locator Device (PLB) and Life vest and received few more from the Forum Fisheries Agency (FFA) and has provided these to observers to use when going on trips.

The programme looks at achieving a Cost Recovery Plan for the Observer program by the end of 2021 and this is a priority task for the program in 2021.

(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 harbor 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 until 2014 when there were only 4 transshipments in the Vanuatu port. As of then, transshipment activities has since ceased. Unloading activities slowly occurred in 2017 and 2018 where 2 unloading took place as a way of showcasing and promoting Vanuatu's capacity of having its vessels resume unloading activities in Vanuatu. In 2019, vessels resumed landing activities under the joint agreement between the Vanuatu government and the SinoVan fishing company which experienced a total of 9 unloading that took place by 6 locally based foreign vessels. Landed catch were exported to China, USA, New Zealand and Japan with the sales of frozen catch also provided to the local markets. It is expected that more of the company vessels will engage in offloading their catch in the Port Vila port in the following year developing the local market of Port Vila and Santo.

(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 and New Zealand, while other frozen fish including Albacore are exported to China and the remaining catch sold in the local markets in Port Vila. 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 in 2019, while only 6 vessels engaged in 100% offloading of catch in the Vanuatu port.

12. Research Activities

There were no major research activities carried out in 2019.

APPENDIX I-CMM Report

Table 1 Summary Table

CMM References	Description	Response

CMM 05-03 North Pacific Albacore

This is one of the Target Species by Vanuatu Longliners where a total number of 90,949 Albacore was caught weighing 1,451.91 MT was reported in 2019 by 47 vessels for 4,269 fishing days.

CCM	Area	Fishery	2002-04 Average		2019		
			No. of vessels	Vessel Days	No. of vessels	Vessel Days	No. of v
	N PAC		12	822	47	4269	

CCM	Area	Fishery	2002-04 Average		2019	
			Catch (Number)	Catch (MT)	Catch (Number)	Cat
	NPAC		81 951	993.726	90494	1

There was No North Pacific Albacore caught by Purse seiners in this area in 2019.

CMM 06-04 SW Striped Marlin

Striped marlin is caught as a by-catch by Vanuatu vessels. In 2019, 11 Vanuatu flag vessels caught 81 striped marlin, weighing 4.413 MT in the area South of 15 degrees South.

CMM 08-03 Marine Turtles

There was a total number of 1 Marine Turtle which was caught by Vanuatu Longliners in 2019 as reported by Observers. It was a Leatherback Turtle and was discarded alive.

CMM 09-03 SP Swordfish

Swordfish is caught as a bycatch. In 2018, 26 Vanuatu flag vessels caught 788 swordfish, weighing 44.905 MT in the area South of 20 South.

CMM 09-06 Transhipments

Total Quantities, by weight, of highly migratory fish stocks that were transhipped by fishing vessels the CMM is responsible for reporting against ,with those quantities broken down as below:

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**	**g) Fishing gear**
offloaded	Port-12016.764	Inside CA-29651.064	Inside -27254.198	Species Weight SKIPJACK TUNA 11,539.	Product Form Wight(mt)	Longline

				YELLOWFIN TUNA 5,390.4	Whole 20	
				BIGEYE TUNA 4,857.	Gilled, Gutted and Tailed 3	
received	High Seas-17894.992	Outside CA-64.252	Outside -2461.118	ALBACORE TUNA 4,675.4	Gilled and Gutted 2	
				SWORDFISH 1,116.1	Dressed	
				SHARK 89	Gutted, Headed and Tailed	
				OTHER FISH 593.1	Gilled, Headed and Tailed	
				BLUE SHARK 1	Other	
				BLUE MARLIN 16	Round (RD)	
				OILFISH 10	Gutted and Headed	
				STRIPED MARLIN 7		
				SHORT FIN MAKO SHARK 6		
				WAHOO 1		
				OPAH / MOONFISH (LAG)		
				POMFRET		
				SPEARFISH		
				SILFIN EEL		
				BLACK MARLIN		
				TUNA UNSPECIFIED		
				ESCOLAR (LEC)		
				MAHI MAHI		
				SAIL FISH		
				BILLFISH UNSPECIFIED		

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	e) fishing gear
offloaded	Port-26	Inside CA-190	Inside -191	Longline
	Within EEZ-16			

received	High Seas- 148	Outside CA-91	Outside- 91	

CMM 10-07

Sharks

In 2019 the total Shark catch estimates caught based on Logsheet data for the Vanuatu vessels was 30,643 Sharks weighing 695.005MT. From this amount, the Longline vessels reported 30,643 which weighed a total of 694.795MT and Purse seine vessels recorded a total of 0.21MT of sharks. The species reported through logsheets for Longlines were Blue shark, Mako sharks, Porbeagle sharks, Silky sharks, Thresher sharks, Oceanic whitetip and Ocellated Angelsharks. The species recorded by the Purse seines was Silky Shark.

Gear	Flag	Species	Fate	Catch (n)	Catch (mt)
PS	VU	SILKY SHARK	Discarded/Released		0.21
PS	VU	OCEANIC WHITETIP SHARK	Discarded/Released		
LL	VU	BLUE SHARK	Discarded/Released	144	2.152
LL	VU	BLUE SHARK	Retained	26,993	597.872
LL	VU	MAKO SHARKS	Discarded/Released		
LL	VU	PORBEAGLE SHARK	Discarded/Released	1088	
LL	VU	SILKY SHARK	Discarded/Released		
LL	VU	THRESHER SHARKS NEI	Retained	964	35.029
LL	VU	BASKING SHARK	Discarded/Released		
LL	VU	GREAT HAMMERHEAD	Discarded/Released		
LL	VU	HAMMERHEAD SHARKS NEI	Discarded/Released		
LL	VU	MAKO SHARKS	Retained	1271	54.106
LL	VU	OCEANIC WHITETIP SHARK	Discarded/Released	8	
LL	VU	OCELLATED ANGELSHARK	Retained	175	5.636
LL	VU	PACIFIC SLEEPER SHARK	Discarded/Released		
LL	VU	PORBEAGLE SHARK	Retained		
LL	VU	SHORTFIN MAKO	Discarded/Released		
LL	VU	SILKY SHARK	Retained		

From Observer data, a total of 1800 Sharks were reported of which 1407 were from Longline vessels and 393 were from Purse seine vessels. From this amount Purse seines recorded a total of 391 sharks Discarded and 2 Retained while Longline recorded a total of 975 Sharks Retained and 429 discarded.

gear	species	Number	Retained	Discarded	Finned and trunk Retained	Finned but Trunk Discarded
S	OCEANIC WHITETIP SHARK	6	2	4	0	0
S	SILKY SHARK	383	0	383	0	0
S	WHALE SHARK	4	0	4	0	0
L	BIGEYE THRESHER	117	4	113	2	1

			SHARK					
		L	BIGNOSE SHARK	8	0	8	0	0
		L	BLUE SHARK	924	902	19	893	0
		L	BRONZE WHALER SHARK	2	0	2	0	0
		L	COOKIE CUTTER SHARK	5	0	5	0	0
		L	CROCODILE SHARK	155	0	155	0	0
		L	KITEFIN SHARK	7	0	7	0	0
		L	LONGFIN MAKO	31	23	8	23	0
		L	OCEANIC WHITETIP SHARK	9	0	9	0	0
		L	PELAGIC THRESHER SHARK	4	0	4	0	0
		L	SANDBAR SHARK	3	0	3	0	0
		L	SHORTFIN MAKO	53	46	7	45	0
		L	SILKY SHARK	25	0	25	0	0
		L	THRESHER SHARK (VULPINUS)	23	0	23	0	0
		L	VELVET DOGFISH	41	0	41	0	0

CMM 11-03	Cetaceans	In 2019 according to observer data, there were interactions with Cetaceans in both the Purseseine and Longline fishery. There was a total of 5 interactions by the Longline vessels, all of them with a Rough-toothed Dolphin. For Purseseiners there were 4 interactions. The interactions were with a False Killer whale and Bryde's whale.
CMM 11-04	Oceanic White-Tip Shark	In 2019 according to observer data, there were a total of 16 interactions with Oceanic White Tip Shark in both the Purse seine and Longline fishery. In the Longlines there were 9 Interactions reported to which 3 were Discarded Alive, 4 were Discarded Dead and 2 were Discarded fate Unknown. While in the Purseseiners there were 7 interactions and both interactions to which 1 was Discarded Alive, 4 were Discarded Dead and 3 were Discarded fate Unknown. From logsheet data reported in 2019, there was a total of 8 Oceanic white-tip sharks caught and reported by both Longline and Purseseiners. All of them were caught by Longliners and were all Discarded.
CMM 12-04	Whale Sharks	In 2019 according to observer data, there were 4 interactions with Whale Sharks in the Purse seine fishery. Based on Logsheet data, there were no records of Whale sharks reported by logsheets.
CMM 12-07	Seabirds	See tables below the Addendum for information on Seabird CMM.

CMM 13-01	Discard reporting–by National Fleet	According to observer data, in 2019 there was a total of 181.758MT of discards by the National fleet vessels all of which are Purse seine vessels. From this number 176.237MT were Skipjack, 4.42MT were Yellowfin and 1.079MT were Bigeye. From this amount 181.723MT were discards for reasons of Gear damage while 128.196MT were discards for reasons of fish being too small, 0.026MT were discards for reasons of line cut or other, 10MT were discards for reasons of poor quality, 27.26MT were discards for reasons of vessels fully loaded and 105MT were discards for Other reasons.
CMM 13-08	Silky Sharks	According to Observer data, there were a total of 443 Silky sharks observed in 2019 by both the Longline and Purse seine vessels. From this amount 31 were observed on Longline vessels of which an estimate of 17 were caught Alive and 14 were caught dead. And total of 18 were Discarded Dead while 12 were Discarded Alive and 1 released with Unknown condition. With regards to Purse seines a total of 412 silky sharks were observed. From this total 127 were caught Dead, 134 were caught Alive and 142 was caught with unknown condition. With regards to Discards, a total of 302 were discarded Dead, 79 were Discarded Alive and 22 was Discarded with Unknown condition. From Logsheet data, a total of 101 Silky sharks were caught and reported. 15 Silky Sharks were reported by Purseseiners while 86 were reported by Longliners. All sharks were Discarded.
CMM 15-02	South Pacific Albacore	Addressed through the regular provision of operational catch/effort log sheet data to SPC, who automatically include these data to the WCPFC databases, as per our authorisation.
WCPFC 11 decision-para 484 (b	Observer Coverage	In 2019, the Observer coverage for LL vessels was measured using the number of days fished that was observed by the Observers. There was a total of 5 observer trips in 2019 with a total observed day of 733. The total number of sea days for Vanuatu long line vessels is 17,824 days therefore, from this figure Vanuatu's observer coverage based on days observed on its LL vessels in 2019 was 4.1%. For Purse seine vessels, the Observer coverage is based on trip coverage and this is 90.7% for 2019.

CMM 2018-03 Seabirds

Table 1. Seabird Interactions

gear	OBS PGRME	flag	vessel	species	date	time	latitude	EEZ	FATE	# of individuals	Alive	Dead	Unknown	Sighted
L	VUOB	VU	HUI SHUN	ALBATROSSES NEI	30/05/2019	123500	< 30S	I7	DPA	1	1	0	0	

L	VUOB	VU	HUI SHUN	ALBATROSSES NEI	16/06/2019	233200	< 30S	I7	RCC	1	0	1	0		
L	VUOB	VU	HUI SHUN	ALBATROSSES NEI	19/06/2019	13400	< 30S	I7	DPD	1	0	1	0		
L	VUOB	VU	HUI SHUN	ALBATROSSES NEI	19/06/2019	2800	< 30S	I7	DPD	1	0	1	0		
L	VUOB	VU	HUI SHUN	BIRD (UNIDENTIFIED)	17/08/2019	21400	< 30S	I7	DPD	1	0	1	0		
L	VUOB	VU	HUI SHUN	LAYSAN ALBATROSS	21/08/2019	2700	< 30S	I7	RCC	1	0	1	0		
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	13/06/2019	-	< 23N > 30S	MH	-	6					6
L	VUOB	VU	GLORY 8	GULLS - TERNS AND SKUAS	15/06/2019	-	< 23N > 30S	I3	-	2					2
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	17/06/2019	-	< 23N > 30S	I4	-	4					4
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	17/06/2019	-	< 23N > 30S	I4	-	8					8
L	VUOB	VU	GLORY 8	BLACK-FOOTED ALBATROSS	23/06/2019	-	< 23N > 30S	I4	-	5					5
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	23/06/2019	-	< 23N > 30S	I4	-	4					4
L	VUOB	VU	GLORY 8	GULLS – TERNS AND SKUAS	27/06/2019	-	< 23N > 30S	I5	-	2					2
L	VUOB	VU	GLORY 8	PETRELS AND SHEARWATERS NEI	28/06/2019	-	< 23N > 30S	I5	-	37					37
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	09/07/2019	-	< 23N > 30S	I5	-	27					27
L	VUOB	VU	GLORY 8	ALBATROSS NEI	11/07/2019	-	< 23N > 30S	I5	-	18					18
L	VUOB	VU	GLORY 8	GULLS – TERNS AND SKUAS	20/07/2019	-	< 23N > 30S	I5	-	23					23
L	VUOB	VU	GLORY 8	BOOBIES AND GANNETS NEI	23/07/2019	-	< 23N > 30S	I5	-	4					4
L	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	01/08/2019	-	< 23N > 30S	I5	-	15					15
L	VUOB	VU	GLORY 8	PETRELS AND SHEARWATERS NEI	10/08/2019	-	< 23N > 30S	I5	-	17					17
L	VUOB	VU	GLORY 8	BLACK-FOOTED ALBATROSS	25/08/2019	-	< 23N > 30S	I5	-	40					40
L	VUOB	VU	GLORY 8	BLACK-FOOTED ALBATROSS	02/09/2019	-	< 23N > 30S	I5	-	17					17
LL	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	05/09/2019	-	< 23N > 30S	I5	-	25					25
LL	VUOB	VU	GLORY 8	GULLS – TERNS AND SKUAS	07/09/2019	-	< 23N > 30S	I5	-	40					40

LL	VUOB	VU	GLORY 8	LAYSAN ALBATROSS	10/09/2019	-	< 23N > 30S	I5	-	35		35
LL	VUOB	VU	GLORY 8	GULLS – TERNS AND SKUAS	11/09/2019	-	< 23N > 30S	I5	-	27		27
LL	VUOB	VU	HUI SHUN	BIRD (UNIDENTIFIED)	06/07/2019	-	<30S	I7	-	20		20
LL	VUOB	VU	HUI SHUN	LAYSAN ALBATROSS	21/07/2019	-	<30S	I7	-	4		4
LL	VUOB	VU	HUI SHUN	BOOBIES AND GANNETS NEI	11/08/2019	-	<30S	I7	-	4		4
LL	VUOB	VU	HUI SHUN	GULLS – TERNS AND SKUAS	17/08/2019	-	<30S	I7	-	50		50

Table 2. Proportion of Mitigation types

year	fleet	Total sets	Combination mitigation	South of 30S	25S-30S	25S-23N	North of 23N
2019	VU	137	MOD	9	0	128	0
2019	VU	4	No Mitigation	4	0	0	0
2019	VU	17	NS	16	1	0	0
2019	VU	1	NS BC MOD	1	0	0	0
2019	VU	108	NS MOD	44	10	54	0
2019	VU	6	NS WB MOD	0	1	5	0
2019	VU	20	WB MOD	0	0	20	0

Table 3. Number of Observed Seabird captures in Vanuatu Longline fisheries, 2019, by species and area.

Year	Species	Birds >30S	Birds > 23N	Birds Between 23N and 25S	Birds Between 25S and 30S
2019	BIRD (UNIDENTIFIED)	1	0	0	0
2019	LAYSAN ALBATROSS	1	0	0	0
2019	ALBATROSSES NEI	4	0	0	0

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 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.