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Rarotonga, Cook Islands
9 – 17 August 2017

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

WCPFC-SC13-AR/CCM-25

TONGA

Ministry of Fisheries

GOVERNMENT OF THE KINGDOM OF TONGA

WESTERN AND CENTRAL PACIFIC COMMISSION

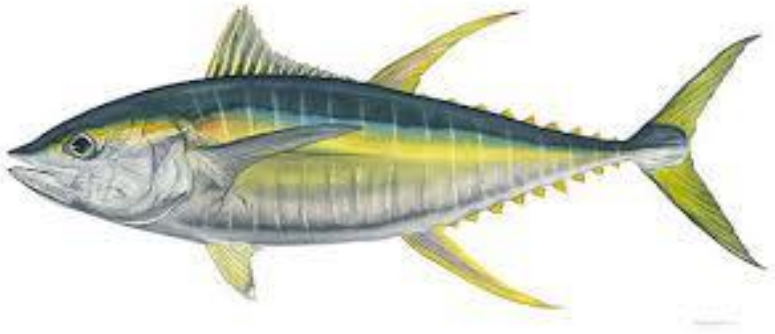
Thirteen Regular Session of the Scientific Committee

9th – 17th August, 2016

TONGA

Annual Fisheries Report Part 1

Information on Fisheries, Research and Statistics



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

1.0 ABSTRACT

Tonga has a small commercial Tuna fishery. In 2016, there were four Tongan flagged (Table 3) long-line vessels operated entirely within Tonga EEZ. The total estimated catch of primary species for the Tonga National long-line fleets was 511mt which was an increase by 10% in comparison to 2015. Apart from the National fleet, Tonga continues on licensing foreign fishing vessels to fish in its waters under agreed conditions, since 2011. In February 2015, a revised Tonga National Tuna Fisheries Management and Development Plan (2015 – 2017) was approved and implemented. The revised plan limits the total number of longline fishing vessel licenses (including local, locally-based and foreign licenses) issued, to fish at any given time, to only 15 vessels. Preference was first given to local operators. Furthermore, only six (6) licenses were given to foreign fishing vessels. The total estimated catch for tuna and tuna-like species for both national and foreign fishing fleets for 2016 was estimated to 2,973mt.

For the National fleets, it is evident that the trend for the total catch was attributed to the increase in the catches of the main tuna species; albacore, yellowfin and bigeye for the last 5 years. In 2016, yellowfin tuna dominated the catch composition of the main tuna species with 63% followed by albacore with 8%. Catch composition indicated that the domestic longline vessel targeted bigeye and yellowfin tuna for fresh fish market. Mahimahi dominated the catches for non-target species, totaling 128mt. Targeting of any sharks species is prohibited in Tonga according to the Term and Conditions for fishing licenses. According to the observer reports, Tonga's long-line fishery has no reported interactions with species of special interest (eg. turtle, marine mammals and seabirds).

Ministry of Fisheries continues to work closely with the Offshore Fisheries Program (OFP) of SPC on issues regarding the status of tuna resources in the Tonga EEZ relative to the whole stock in the Western and Central Pacific Ocean (WCPO). The total tuna harvested by Tongan fleet in 2016 was still insignificant to pose any major impact on the whole stock in the region and the WCPO. Despite the ample room for improvement and development of tuna fleet in Tonga, high operation cost had restricted the operation of fishing vessels mainly to areas near the main fishing port, Nuku'alofa.

Tonga has no purse seine fisheries; therefore, some of the WCPFC measures regarding purse seine fisheries are not applicable to Tonga. But at the same time, Tonga has set an effort limit effort for Purse Seine fishing with in its EEZ per calendar year to be not exceeded 150-200 days. The total number of days of Purse Seine fishing activity within Tonga EEZ for 2016 was zero (0) days.

Tonga has its National Observer Program and active domestic port sampling program for highly migratory species. Tonga National Observer Programme (TNOP) has been authorized since 2011 to provide ROP observer trips. Tonga has four certified Debriefer to debrief observer data which speed

up observer data entry into TUBs database. Tonga continues to use the latest version (2014) of SPC/FFA regional forms for logsheets, port sampling, unloading and observer data collection. These forms have had a number of revisions over the years, some of which is to cater for the requirements of the WCPFC. For example, the identification to species level of seven key shark species. This is one of the areas identified by the Compliance and Monitoring Scheme where many of the SIDS such as Tonga requires assistance. The total observer coverage onboard foreign and domestic vessels for 2016 were 82% and 13.5% respectively. The port sampling and logsheets coverage were 100% in 2016. At the same time, Tonga continues to implement and monitor its obligation towards the Commission's Conservation and Management Measures and also the Resolutions and report back to the Commission annually (Appendix 1 – CMM Reporting).

2.0 BACKGROUND

Tonga is a small island development state in the WCPFC and has continued to develop her Tuna Fishery capacities. The current focus for Tonga is to strengthen the capacities for development of her Tuna fishery. Currently, Tonga tuna fishery consists solely of longline fishing vessels targeting tuna and tuna-like species, with a very small artisanal fleet, include small fishing vessels with outboard engine and game fishing vessels which used trolling fishing method. The data collection from this fleet is in its early stage. However, TufArts database system provided by SPC has already been installed into the Tonga Fisheries database server to cater for these data.

Tonga Ministry of Fisheries continues to work closely with the Offshore Fisheries Program (OFP) of SPC on issues regarding the status of tuna resources in the Tonga EEZ relative to the whole stock in the Western and Central Pacific Ocean (WCPO).

Despite the ample room for improvement and development of tuna fleet in Tonga, there are challenges identified including the high operation cost had restricted the operation of fishing vessels mainly to areas near the main fishing port, Nuku'alofa.

Tonga continues to develop and build sustainable fisheries through better management decision that will allow the people of Tonga to continue benefiting from now and in the future.

3.0 FLAG STATE REPORTING

3.1 Status of the Fishery

3.1.1 Total annual catch, by primary species

The annual catch and effort estimated, by primary species for the national longline fleet fishing throughout the WCPF Convention Area for the years 2012 to 2016 are summarized in Table 1. The total effort in the WCPF-CA was approximately 12,265 hundred hooks (Table 1) and it's all attributed

to the Tonga EEZ. In further details, the annual catch estimates of primary species, (Table 1) in 2016 were amounted to 511mt and it is about 10% increases from the previous year. The significant rise in catch could be due to the active operation of domestic vessels throughout the year and also the increase in effort in terms of number of hooks which was increased by 12% from previous years. In 2016, the catches for primary species were dominated by yellowfin (63 %) for main tuna species, followed by 8 % albacore and 5 % for bigeye tuna with only 1% of skipjack tuna. Swordfish occupied 8 % of the total catch of primary species followed by 2% and 8% each of striped marlin and blue marlin respectively.

***Table 1*. Annual catch (mt) and effort (hooks) estimates for the Tonga longline vessels, by primary species, for the WCPFC Convention Area, 2012 – 2016**

YEAR	Effort	Catch in metric tons									
	Total no. hooks (100s of Hks)	Albacore	Bigeye	Yellowfin	Pacific Bluefin	Black Marlin	Blue Marlin	Stripe Marlin	Swordfish	Skipjack	Total
2012	9774	20	10	140	0	2	47	8	19	1	247
2013	7786	13	7	126	0	0	48	2	26	1	223
2014	8234	25	22	195	0	10	13	12	37	8	322
2015	10916	29	25	297	0	13	23	30	42	6	465
2016	12265	42	27	322	0	20	43	12	39	6	511

The annual estimated effort and catch for the primary species, for the Tongan Longliners for the year 2012 to 2016 (Figure 2).

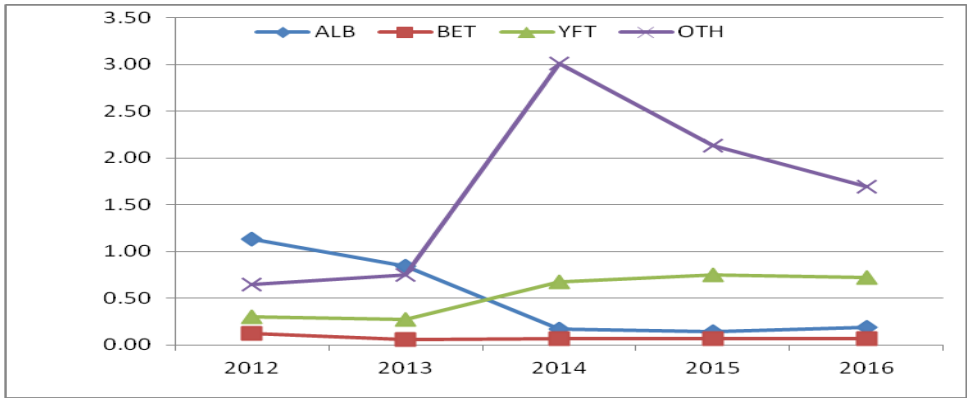


Figure 2. CPUE (kg per 100 hooks) of main tuna species and others for Tonga longliners were active in the WCPF Convention Area for the years 2012 to 2016

3.1.2 Annual catch estimates of non-target, by-catch associated and dependent species

The provisional estimated total catch of non-target, associated and dependent species for the national longline fleets for the last five years are provided in Table 2. The species composition of the catch by weight in 2016 was dominated by Dolphin fish (*Mahimahi*) totaling 128mt followed by *Wahoo* with 17mt. Following the implementation of the Expanded Version SPC/FFA Regional Longline Logsheets to include specific shark records, the total un-raised shark catch for the National fleets (sources: Dorado Longline Report 1) within WCPF-CA was 20mt dominated by *Mako* sharks (Table 2).

By-catches are obtained from logsheets and also from observer records as well as port sampling data. Observer records are important for estimating catches of the less valuable species that are less likely to be retained or recorded. Observers have reported high retention rates of target tunas, including those that are discarded due to shark damages. Wahoo, mahimahi, moonfish and billfishes also had high retention rates as these are also have valuable components for the fishery especially the local market.

Based on available data, there was no interaction of Tonga flagged longliners with species of special conservation interest (eg. Marine turtle, marine mammal and sea birds) recorded by observers (*Appendix 1*). To reduce sea turtle mortality in fishing operations, Tonga National longline fleets used circle hooks and fish baits with less squid bait in longline fishing operation.

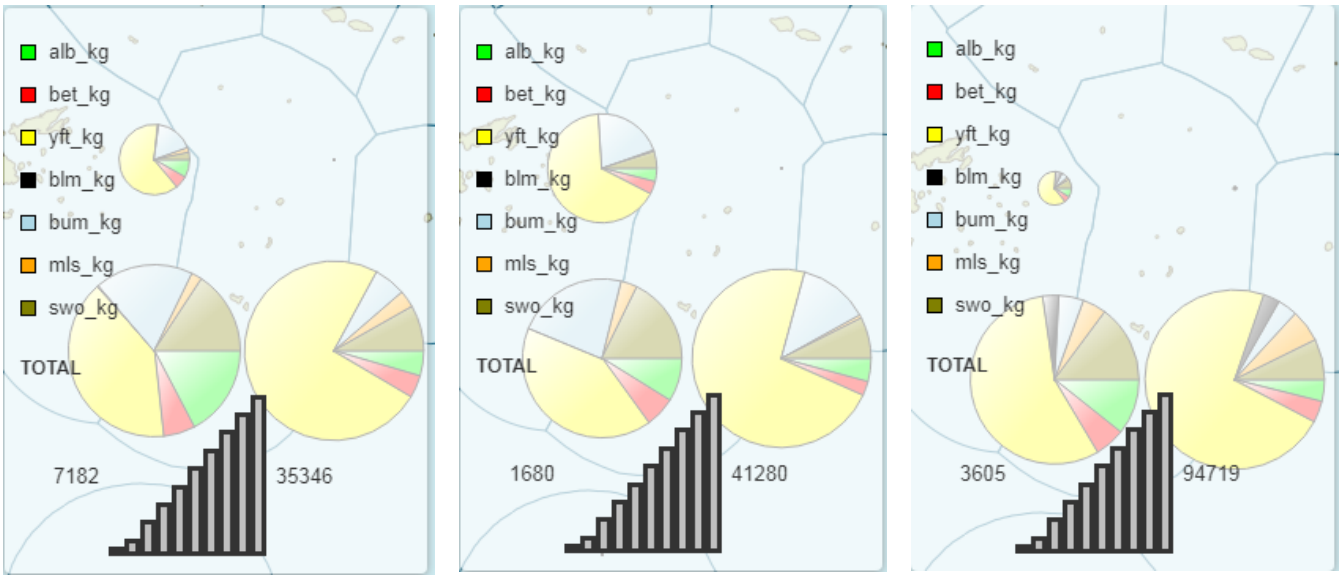
Table 2. Annual estimated catches (mt) of non-target and by-catch species, including sharks, by the National longline Fleets, in the WCPF Convention Area, for years 2012 to 2016.

Non Target Species	2012	2013	2014	**2015**	2016
Wahoo	6.3	3.0	9.7	**17.4**	16.6
Short-Billed Spearfish	1.0	2.6	4.1	**7.9**	8.7
Mako Sharks		1.0	8.4	**8.5**	19.6
Hammerhead Sharks			0.03	**0**	**0.0**
Oceanic Whitetip Sharks			0.0	**0.0**	**0.0**
Silky Sharks			0.0	**0.0**	**0.0**
Thresher Sharks			0.0	**0.0**	**0.0**
Blue Sharks			0.0	**0.0**	**0.0**
Sharks (Unidentified)	130.0	13.2	4.5	**0.0**	**0.0**
Sailfish (Indo Pacific)	0.8	2.1	4.0	**14.4**	10.8
Dolphin fish	39.0	53.3	190.1	**162.6**	128.2
Opah/Moonfish	0.5	0.0	0.3	**0.1**	0
Others	8.5	32.2	6.5	**7.1**	9.8
Total	186.0	107.4	227.5	218.0	193.9

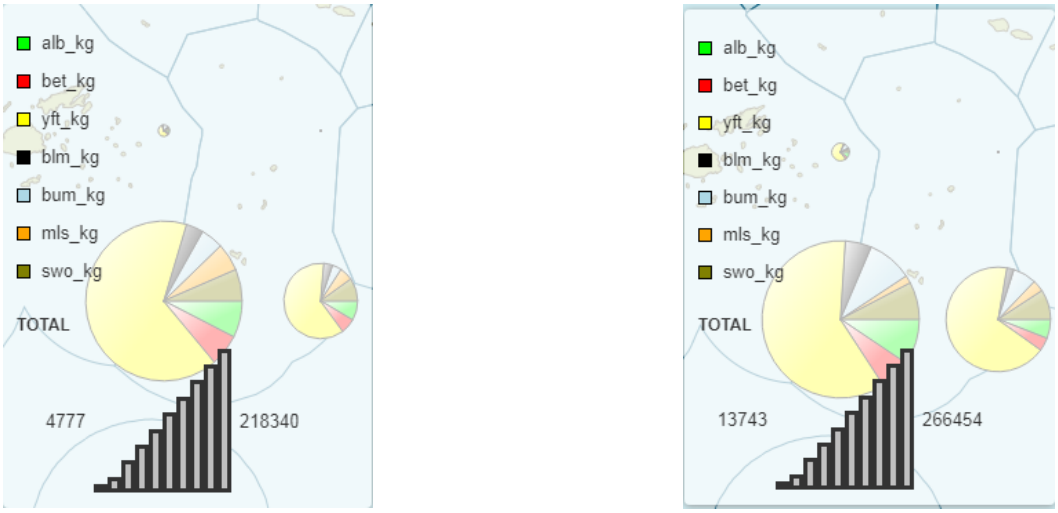
3.2 Fishing Patterns – National Fleets in the WCPF Convention Area

Figures 2a & 2b provide an illustration of the map of catch and effort for the national longline fleets over the past five years in the WCPF Convention Area.

In 2016, 100% of the fishing catch and effort of the National longline fleet was widely distributed in the southern part of the Tonga EEZ.

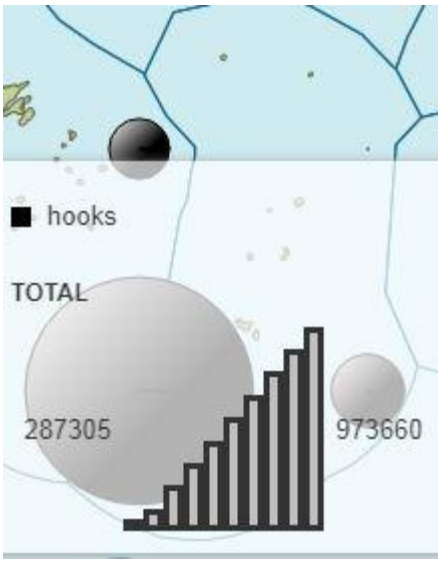


(i) 2012 (ii) 2013 (iii) 2014

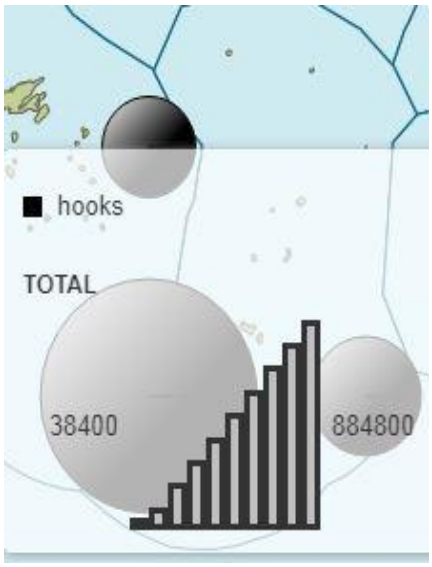


(iv) 2015 (v) 2016

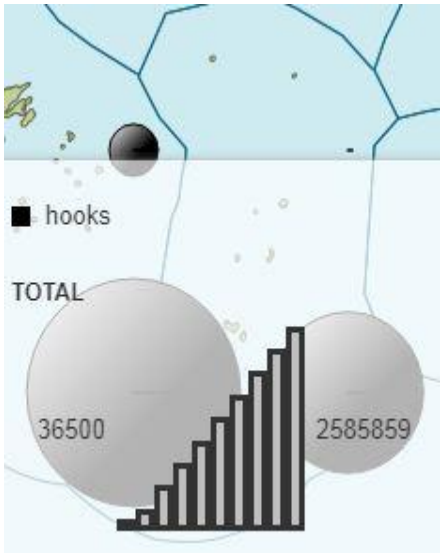
Figure 2a (i-v). Map of Longline National Fleet catch by species (in kilograms) in the WCPF Convention Area for the year 2012 to 2016.



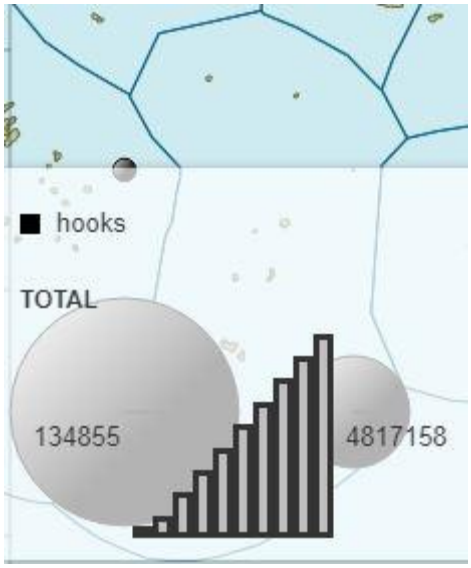
(i) 2012



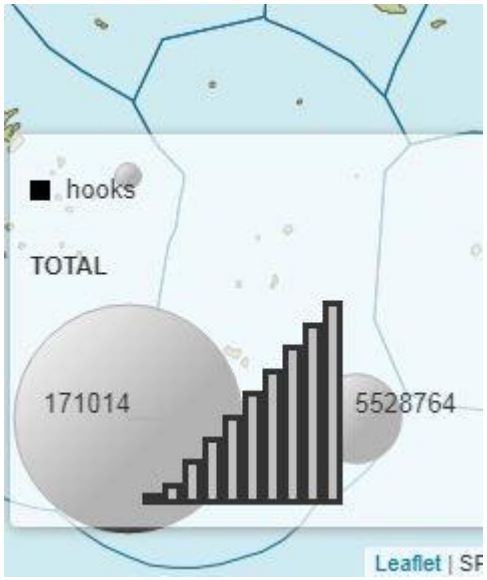
(ii) 2013



(iii) 2014



(iv) 2015



(v) 2016

Figure 2b (i-v): Map of Longline national Fleet effort (in hooks) in the WCPF Convention Area, for the year 2012 to 2016.

The reporting requirements stipulated under the conservation and management measures adopted by the Commission are demonstrated in appendix 1. In accordance to CMM 2006-04, no vessels specifically targeted striped marlin and all catch was taken as by-catch. A total of 14mt of stripe marlin was caught as bycatch and 12mt of the total catches were caught in south of 15^0S of the Convention area. CMM 2009-03, four vessels caught a total of 44mt of swordfish as bycatch, 37mt of the total catches were caught in the Convention Area South of 20^oS. There were no vessels operating under

charter, lease or other similar mechanism as part of domestic fishery. 8 FFV caught 7mt of swordfish as bycatch in south of 20^{o}S.

For Shark species (CMM2010-07), 305 individuals of about 19mt of Mako sharks were caught and retained with 4 individuals of about 0.2mt were caught and discarded. There were 44 individuals of Hammered Sharks caught and were all discarded so as 236 individuals of Blue Sharks, 83 individuals of Oceanic Sharks, 6 individuals of Thresher sharks and 39 individuals of Silky sharks caught and discarded respectively. There was no interactions reported on whale shark. More of the CMM reports is attached to this report as Appendix 1.

3.3 Fleet Structure

In 2016, the Tonga National fleets consist of four (4) domestically-based longline vessels that operate within the WCPF-CA. All these vessels are Tonga flagged vessels and authorized to fish within the national jurisdiction only. Among these, only one active vessel listed on the WCPFC Record of Fishing vessels (RFV) but no high seas permit has been issued during 2016.

Table 3. The number of National Fleets vessels, by size category, active in the WCPF Convention Area, 2012 - 2016.

Gear	Longline				
Fleets	National Fleets				
Source	Number of Licenses Vessels (TufMan)				
Size Category (GRT)	2012	2013	2014	2015	2016
0 - 100MT	4	3	2	2	2
100 - 200MT	0	0	2	2	2
200+	0	0	0	0	0

4.0 COASTAL STATE REPORTING

In 2016, there were eight(8) foreign flagged longline vessels licensed to fish in Tonga EEZ compared to nineteen (19) in 2012 (Table 4 and 5). The decrease in number of foreign vessels licensed to fish in Tonga was mainly due to the revised Tuna Development and Management Plan 2015 – 2017.

Table 4. Number of foreign longline vessels with valid licenses to fish in the Tonga EEZ by year and size category (GRT).

Gear	Longline				
Fleets	FFV				
Source	Number of Licenses vessel (TufMan)				
Size Category (GRT)	2012	2013	2014	2015	2016
0 - 100MT	19	19	13	5	8
100 - 200MT	0	0	0	0	0
200+	0	0	0	0	0

Table 5. Number of foreign longline vessels with valid licensed to fish in the Tonga EEZ by flag and year.

	Flag			
Year	CHINA	CH-TAIPEI	FIJI	Total
2012	1	20	1	22
2013	3	20	3	26
2014	3	14	2	19
2015	1	5	0	6
2016	0	8	0	8

Annual catch for foreign flagged vessels in 2016 are given in Table 6 and are similar in species composition of the catches to that of Tonga National fleets. Those catches by foreign vessels contributed to Tonga National Catch of tuna and tuna-like species within Tonga jurisdiction waters. Albacore tuna was the highest caught species in zone with 1216mt (54% of total catch) followed by yellowfin with 574mt (25%) with lesser percentage of 6% of bigeye tuna. There was a considerable increase by 55% of the total catch of foreign flagged vessel in 2016 (2268mt) compared to 2015 which totaling 1465mt.

Table 6. **Annual foreign Longline catch and effort estimates by foreign flagged vessels licensed to fish with Tonga EEZ (national waters) in 2016.** ***Operational logsheet data raised using VMS eRecap Application Tools. (Dorado report 12)***

Flag	YEAR	GEAR	ALB	YFT	BET	SKJ	BUM	BLM	MLS	SWO	SFA	FAL	BSH	OCS	THR	MAK	HAM	POR	OTH	Total
CHINESE TAIPEI	2016	LL	1215.6	573.6	131.6	25.1	60.6	4.0	15.2	19.9	14.1	0.0	50.2	0.0	0.0	22.9	0.0	0.0	135.5	2268.4
TOTAL			1215.6	573.6	131.6	25.1	60.6	4.0	15.2	19.9	14.1	0.0	50.2	0.0	0.0	22.9	0.0	0.0	135.5	2268.4

4.0 SOCIO-ECONOMIC FACTOR

Export of Tuna catches in 2016 from Tonga still continued. The national fleets contributes in large portion into total fish has been exported from Tonga in 2016. This is due to the increase in effort which drives into 10% increased in catch compared to 2015. Foreign vessels continue to provide additional revenue stream to the domestic fisheries sector in Tonga from their license fees and also the resources rent from all catches that landed in Tonga. All catches by foreign vessels were unloaded in port Nuku'alofa then repacked into shipping container and exported to overseas market with a portion of their catch were sold at local market and retail store. The new FOB values were charged by species to the total catch species in spite of export or sold locally were TOP$6 for Bigeye and Yellowfin tuna; then TOP$5 for the rest of the catch. The FOB value calculated according to the average prices of fish being sold out at the local markets, which is well-known to be lower than the true value of export prices in overseas market. The total estimated FOB revenue collected from fish exported during 2016 was increased by 41% from TOP$7,813,716.00 in 2015 into TOP$11,036,651.00 during 2016.

5.0 DISPOSAL OF CATCH

5.1 Marketing

Tonga's main markets for its fresh chilled tuna exports were Japan, US (Los Angeles, Hawaii), New Zealand and Australia. Taiwan, Pago, Thailand and Fiji used to be a target market for frozen albacore. In 2016, foreign vessels continues exporting of frozen tuna (Bigeye and Yellowfin) to Japan market. Frozen bycatch also send to Taiwan and Hawaii. At present, fresh chilled albacore and some of the bycatch (frozen and fresh) are sold locally.

Figure 5 describes the main markets destination with respect to weight of longline catch export for Tonga in 2016. The biggest portion; 30% of the total export volume was exported to Japan followed by 25% to Fiji; 23% to Pago; 12% to Taiwan; 7% to US(Honolulu and LA) and 1% to Thailand. Other important markets are New Zealand and Australia (for fresh chilled tuna) but in a low portion of both 1% respectively. A significant increase in export volume to Japan's sashimi market was due to the increase in catch and effort by domestic fleets with 4 vessels operated in 2016 and the domestic fleets' targeted fresh tuna for sashimi market. The foreign vessels exports performances in 2016 were somewhat difference compared to 2015. Fiji dominated the export of frozen fish with 450mt, followed by Japan with 476mt, Pago with 448mt, Taiwan with 177mt and Thailand with 25mt.

Albacore tuna dominated the exported of individual species with 49% of the total volume, followed by yellowfin with 30% and lesser percent of bigeye, mahimahi, marlin, shark, skipjack and swordfish with 6%, 4%, 2%, 3%, 1%, and 0.2% respectively. Export of bycatch species described as "Others" (OTH)

were mainly frozen fish exported (frozen) mainly to Taiwanese and US markets and they consisted of baracuda, escolar, oil fish, sailfish, spearfish and wahoo; and it's only 5% of the total volume of export fish. Foreign vessels also provide more fish to be sold locally and it continues to contribute to a drop in fish price compared to previous years.

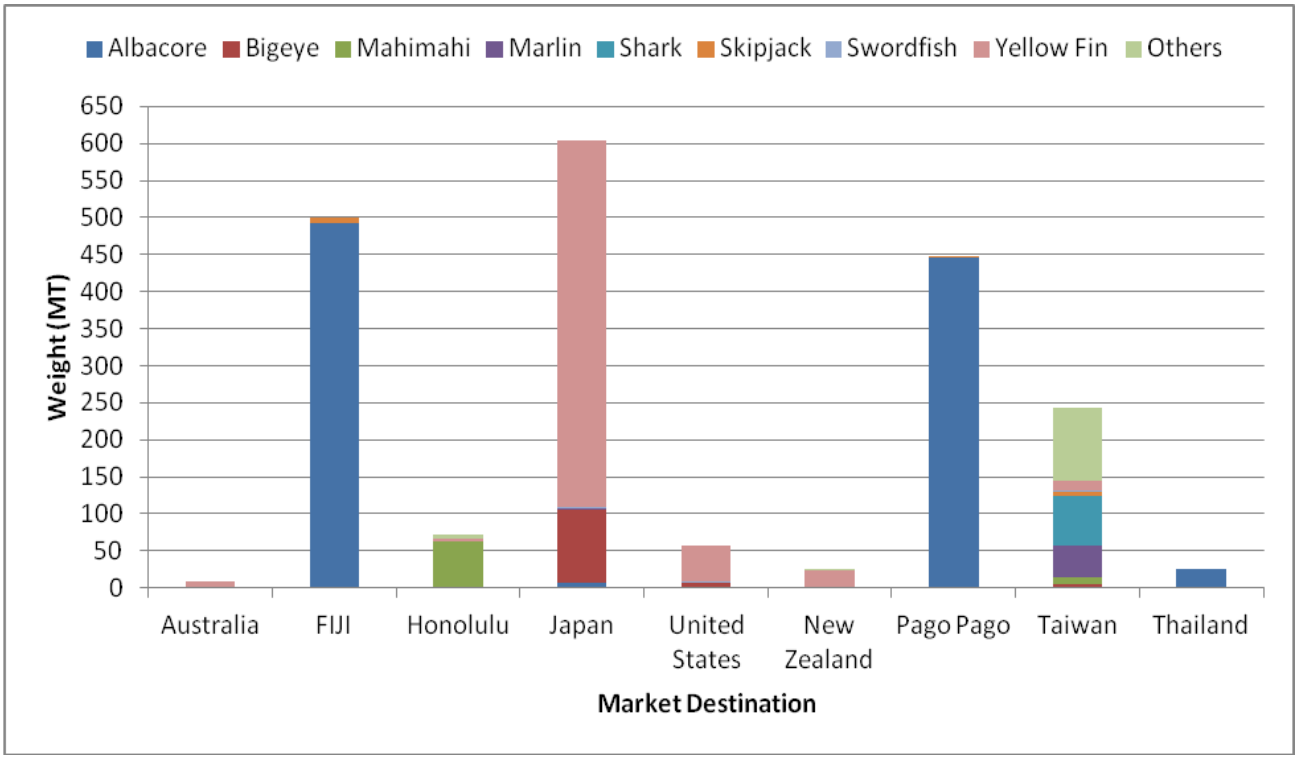


***Figure 5*. Longline catch (MT) export and Destinations for Tonga, 2016**

6.0 ONSHORE DEVELOPMENT AND FUTURE PROSPECTS OF FISHERY

The Tonga commercial longline fishery is currently limited by a cap on the number of longline vessels authorized to fish within the EEZ to only 15 licenses (*Revised Tonga Tuna Management & Development Plan*). Unfortunately, high operating costs and a lack of adequate infrastructure has restricted the development of a locally based fleet.

Atlantis Fisheries the only domestic tuna fishing company's operated with viable production outputs in exporting of fresh chilled tuna to sashimi markets especially to Japan, Australia, Honolulu and New Zealand. Also entailing in provides employment for local people in crewing their vessels, and also its processing and retailing plant. The company is also planning to extend its services to operate more longline vessels and a better processing unit.

The National Fisheries Council (NFC) continues on partnership with the Ministry of Fisheries and respective stakeholders in developing fisheries sector including Tuna fishery. Within this partnership, the NFC planned to deal with many challenges especially the infrastructure such as the development of fisheries wharf, packing facilities that provide low fees for fishermen and equipment such as vessels, fishing gears etc. For future development, it is expected that more domestic vessels to be operated and lessen the foreign fishing vessels.

In 2016, Tonga continued to participate in the regional Tuna Data and Stock Assessment Workshop which are conducted on an annual basis for SPC member countries. Data Workshop was aimed to improve member countries' scientific tuna monitoring and data management capacity, and satisfy their data reporting obligations to the Western and Central Pacific Fisheries Commission (WCPFC). The cloud migration of TUFMAN2 allows data entry and data extraction more easily and speedy especially analyzing of data for the scientific report. Small vessels registration of artisanal boats prior to catch and effort data collections still continues data collection still continues with TUFART system.

The Stock Assessment Workshop was recognized as an important program in capacity building for fisheries officers and managers in the region. In this workshop, participants were introduced to various stock assessment models that assist officers in providing scientific advice to managers and policy makers base on the best models used. Not only that but participants were also introduced to the Tuna Management Simulator (TUMAS) a new software tool developed by the OFP that allows fishery managers and advisors to evaluate the performance of different management options. Seapodym model were also introduced and it is very supportive especially the status of the stock in related to fishing activities and climate change.

7.0 RESEARCH ACTIVITIES AND STATUS OF TUNA FISHERY DATA COLLECTION

7.1 Logsheets and Unloading data collection

Expanded format of SPC/FFA Regional Longline Logsheets (2014) has been used by longline vessels in 2016. One of the main improvements in data collection was the revised of Tonga National Tuna Management and Development Plan 2015 – 2017 and all foreign vessel shall offload all of their catches in authorize ports in Tonga which is Nuku'alofa ports. In this case, 100% coverage of logsheets, unloading and port sampling data were achieved from both National and foreign vessels licenses to fish in Tonga. Unloading forms were submitted together with logsheets in timely manner.

7.2 Observer Programme

The Tonga National Observer Programme (TOB) has attempted to deploy observers' onboard domestic and foreign longline vessels operated with in Tonga EEZ, and also place observers on US purse seiner vessels under Multilateral Treaty arrangement. The observer coverage for TOB was 82% onboard foreign fishing vessels license to fish in Tonga EEZ and 13.5% onboard Tonga flagged vessels. All those observer trips are non-ROP trips.

TOB is aimed to collect information on fish catch, fish handling techniques, fishing technology, by-catch and discards and all other activities that the vessel conducted for the duration of the trip. All these data will analyze and it will be very useful for stock assessment and management purposes. Fishing vessels' compliance with fisheries legislation is also an integral part of this program.

7.3 Port sampling Programme

The Ministry of Fisheries continues to employ dedicated port samplers which covering 100% of the longline unloading in Nuku'alofa port. The Ministry is also obliged to maintain this high percentage coverage of port sampling to ensure the fulfillment of its obligation to the Commission. Data types collected are logsheets, unloading and port sampling forms. The logsheets and the unloading forms are collected and entered into TUFMAN2. The port sampling forms together with the losgheets and unloadings are then scanned and sent to SPC/OFP on a regular basis for further analysis.

The eTUNALOG application developed by SPC was on trial in three (3) domestic longline vessels in 2016. Through SPC/OFP these vessels were provided with 3 new laptops with eTUNALOG application already installed. This application replace the need for skippers to manually complete hard-copy vessel trip logsheets for submission to national authorities.

The National Observer Programme and Port sampling programme warmly extend our sincere gratitude and appreciation to the overseas donor (JTF fund) and regional organization (FFA & SPC) for their great financial and technical support in developing our tuna data collection and analysis. Implementation of both programmes and the completion of this scientific report would not have been possible if we did not have your support in all approach.!!! ***Malo 'aupito***

Appendix 1 – CMM Reporting

Summary for each CMM

CMM Reference	Response
CMM 2005-03 [North Pacific Albacore], Para 4	**NOT APPLICABLE** **No flagged vessel active in North of the equator**
CMM 2006-04 [South West striped Marlin], Para 4	***Sources: Dorado Reporting tools (report 21 n catch estimate template)*** **2016 – 4 LL vessels caught a total of 14mt of SW_MLS as bycatch, 12mt of the total catches were caught in south of 15°S of the Convention area. No TO flag vessel target striped marlin S 15 S**
CMM 2009-03 [Swordfish], Para 8	***Sources: Dorado Reporting Tools*** • **a) 2016 – 4 flagged LL vessels caught a total of 44mt of SP_SWO as *bycatch,* 37mt of the total catches were caught in the Convention Area South of 20°S** • **b) there were NO vessels operating under charter, lease or other similar mechanism as part of domestic fishery** • **c) 2016 – 8 foreign LL vessels caught 7mt of SP_SWO as a *bycatch* in south of 20°S** **No TO flag vessel target SWO S 20 S**
CMM 2009-06 [Transshipment], Para 11 (ANNEX II)	**There were NO TO flag vessels transshipment activities occurred in Tonga ports or Tonga EEZ.** **Not an Issue as Transshipments is prohibited in Tonga Fisheries Waters.** **However Regulation 19 of the Fisheries (Fishing Vessels Licensing) Regulations 2016 provides that transshipment is only allowed pursuant to written Authorization from the Minister.**
CMM 2010-07 [Sharks], Para 4	***Source: Dorado Reporting Tools (Regional 26) Dorado*** • **2016 - 4 LL vessels caught;** ▪ ***Mako sharks*, 305 individuals of about 19 mt were caught and retained, 4 individuals of about 0.2mt were caught and discarded** ▪ **Hammered Sharks; 44 individuals caught and were all discarded** ▪ **Blue Sharks; 236 individuals were caught and all discarded** ▪ **Oceanic Whitetip Sharks; 83 individuals were caught and discarded alive** ▪ ***Silky sharks*; 39 individuals caught, 23 individuals were discarded alive and 16 individuals were discarded dead** ▪ ***Thresher Sharks*; 6 individuals were caught and all discarded** ▪ **There were NO Whale Shark reported**

CMM 2011-03 [Impact of PS fishing on cetaceans], Para 4	**Not Applicable** **Tonga does not have a purse seine fleet**
CMM 2011-04 [Oceanic whitetip sharks], Para 3	***Sources: Dorado reporting Tools (ACE calculations for discards)*** • **83 individuals caught and all discarded alive.** • **Logsheet data were 100% coverage**
CMM 2012-04 [Whale sharks], Para 06	**Not applicable as Tonga does not have purse seine fleet**
CMM 2012-07 [Seabirds], Para 9 ***Applies until 1 Jan 2017 (see CMM 2015-03 below)***	***Source: Dorado reporting Tools*** **There is no interaction with seabirds by longline fisheries.**
CMM 2013-08 [Silky sharks], Para 3	***Sources: Dorado Reporting Tools (report 2.2.3, excel template)*** • **39 individual of Silky Sharks caught, 23 individuals were discarded alive and 16 individuals were discarded dead** • **Logsheet data were 100% coverage**
Observer coverage (WCPFC 11 decision – para 484(b)	**Observer Coverage:** **Not Applicable as Tonga does not have any vessels issues with high seas permit** • **82% onboard Foreign Fishing vessels license to fished in Tonga EEZ** • **13.5% onboard National Fleets (domestic longliner)** **all Tonga-flag longline vessel trips are all Non-ROP trips**
CMM 2015-02 [South Pacific Albacore] Para 4	**Data has been submitted to SPC** **Addressed through the regular provision of operational catch/effort logsheet data to SPC, who automatically include these data in the WCPFC databases, as per our authorisation.**
Commencing in reports that cover activities post-1 January 2017	

Appendix 2 – The provision of shark species catch estimates

Flag	Year	Observer Data		Target tuna catch estimate	Shark species catch estimate (t.)							See Note
		Available ?	Coverage		BSH	FAL	MAK	OCS	POR	SPN	THR	
TO	1982	N	0.00000%	205.0	35.2	5.5	18.8	18.1	0.0	0.4	0.5	2
TO	1983	N	0.00000%	208.0	35.7	5.6	19.0	18.4	0.0	0.4	0.6	2
TO	1984	N	0.00000%	218.0	37.5	5.9	20.0	19.3	0.0	0.5	0.6	2
TO	1985	N	0.00000%	233.0	40.0	6.3	21.3	20.6	0.0	0.5	0.6	2
TO	1986	N	0.00000%	251.0	43.1	6.8	23.0	22.2	0.0	0.5	0.7	2
TO	1987	N	0.00000%	298.0	51.2	8.0	27.3	26.3	0.0	0.6	0.8	2
TO	1988	N	0.00000%	274.0	47.1	7.4	25.1	24.2	0.0	0.6	0.7	2
TO	1989	N	0.00000%	234.0	40.2	6.3	21.4	20.7	0.0	0.5	0.6	2
TO	1990	N	0.00000%	190.0	32.6	5.1	17.4	16.8	0.0	0.4	0.5	2
TO	1991	N	0.00000%	195.0	33.5	5.3	17.8	17.2	0.0	0.4	0.5	2
TO	1992	N	0.00000%	223.0	38.3	6.0	20.4	19.7	0.0	0.5	0.6	2
TO	1993	N	0.00000%	329.0	56.5	8.9	30.1	29.1	0.0	0.7	0.9	2
TO	1994	N	0.00000%	408.0	70.1	11.0	37.3	36.1	0.0	0.9	1.1	2
TO	1995	N	0.00000%	461.0	79.2	12.4	42.2	40.7	0.0	1.0	1.2	2
TO	1996	Y	10.22434%	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1
TO	1997	N	0.00000%	662.0	113.8	17.9	60.6	58.5	0.0	1.4	1.8	2
TO	1998	Y	5.69883%	825.7	277.2	0.9	127.0	115.6	0.0	1.0	2.5	1
TO	1999	Y	1.21928%	1,080.8	74.5	12.9	72.2	51.7	0.0	0.0	1.0	1
TO	2000	Y	1.05440%	1,158.4	253.8	24.8	55.6	76.1	0.0	0.0	5.6	1
TO	2001	N	0.00000%	1,718.0	295.2	46.3	157.2	151.8	0.0	3.7	4.6	2
TO	2002	N	0.00000%	1,667.0	286.4	45.0	152.6	147.3	0.0	3.6	4.5	2
TO	2003	N	0.00000%	968.0	166.3	26.1	88.6	85.5	0.0	2.1	2.6	2
TO	2004	Y	8.18220%	472.5	74.1	26.8	83.7	116.9	0.0	4.1	0.7	1
TO	2005	Y	1.28110%	628.1	114.3	8.2	91.6	44.7	0.0	0.0	0.0	1
TO	2006	Y	9.98872%	757.7	94.5	37.2	44.1	72.2	0.0	0.6	1.7	1
TO	2007	Y	4.21774%	859.4	118.5	42.1	81.1	59.8	0.0	6.7	4.8	1
TO	2008	Y	9.17434%	591.8	88.0	6.3	40.5	40.0	0.0	1.9	0.0	1
TO	2009	Y	4.79004%	271.3	50.6	20.7	14.3	12.0	0.0	0.0	1.5	1
TO	2010	Y	0.14406%	127.7	21.9	3.4	11.7	11.3	0.0	0.3	0.3	3
TO	2011	N	0.00000%	223.0	38.3	6.0	20.4	19.7	0.0	0.5	0.6	2
TO	2012	N	0.00000%	170.0	29.2	4.6	15.6	15.0	0.0	0.4	0.5	2
TO	2013	N	0.00000%	146.0	25.1	3.9	13.4	12.9	0.0	0.3	0.4	2

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.

3. The observer data coverage rate is considered too low (< 0.8%) to produce estimates of shark species catches for this year. 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.