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ELEVENTH REGULAR SESSION**

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

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**WCPFC-SC11-AR/CCM-25**

**TONGA**



**Fisheries Department**  
**GOVERNMENT OF THE KINGDOM OF TONGA**

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WESTERN AND CENTRAL PACIFIC COMMISSION  
Eleventh Regular Session of the Scientific Committee  
5<sup>th</sup> – 13<sup>th</sup> August, 2015

TONGA

**Annual Fisheries Report Part 1**

**Information on Fisheries, Research and Statistics**



<p>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 2015</p>	<p><b>YES</b></p>
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## **1.0 ABSTRACT**

In 2014, the Tonga National Fleets consisted of long-line vessels operated entirely within Tonga EEZ. A total of four fishing vessels (Table 3) had valid license in 2014 compared to three vessels in 2013. The total estimated catch for the Tonga National long-line fleets was 320mt which is a considerable increase by 43% in comparison to 2013. Apart from National fleets, Tonga continues on licensing foreign fishing vessels to fish in its fisheries water under agreed conditions, since 2011. A total of 19 foreign fishing vessels had valid licenses during the year 2014. However majority of the foreign vessels were not active throughout the year (in Tonga EEZ) due to the expiration of their fishing licenses without renewal and also due to shift to other fishing zone. These foreign fishing vessels unloaded either 100% or 50% of their catches overseas before fish were eventually shipped to respective destinations. The total estimated catch for tuna and tuna-like species for both the Tonga National longline vessels and the foreign fishing vessels for 2014 were estimated to 1,305mt.

For the National fleets, it is evident that the trend for the total CPUE was attributed to the increase in the CPUEs of the main tuna species; albacore, yellowfin and bigeye for the last 5 years. In 2014, yellowfin tuna dominated the catch composition with 61% followed by albacore with 8%. Catch composition indicated that the domestic longline vessel targeted bigeye and yellowfin tuna for fresh fish market. Mahimahi is the most dominated catch of non-target species totaling 190mt. Targeting of any sharks species is prohibited in Tonga according to the Term and Conditions for fishing licenses. As a result, a big reduction in catching of sharks by both National and foreign fleets as compared to previous years. According to the observer reports, Tonga's long-line fishery has no impacts on species of special interest (eg. turtle, marine mammals and seabirds).

Tonga Fisheries Division 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 2014 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 its National Observer Program and active domestic port sampling program for highly migratory species. Tonga's National Observer Programme was audited by WCPFC Secretariat in March 2011 and is authorized it to provide ROP observers. One of the issues identified in this audit was the lack of debriefing of observer data due to lack of certified debriefer. Tonga is now including some of its observers on debriefer's training courses and it's close to the completion of its prerequisites to become a certified debriefer.

Tonga uses the latest version (2009) of SPC/FFA regional forms for logsheets, port sampling, unloading and observer data. 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, seven key sharks species are now required to

identified and reported by 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 observer coverage on foreign vessels for 2014 was 50%. The port sampling coverage was close to 100% as compared to 98% in 2013. At the same time, measures and resolutions of the Commission are being implemented and monitored by Tonga Fisheries.

## **2.0 BACKGROUND**

Tongan commercial fisheries for high migratory species started in early 1970's with second hand longliner and skipjack vessels from Japan. In early 1980's the Government put into investigation the commercial viability of tuna longline using a new long-liner, F.V.Lofa, donated by the Government of Japan. In 1991, the Government established a semi-Government company, namely the Sea Star Fishing, to operate F.V.Lofa commercially. The US Aid/Tonga Fisheries project in early 1990's tested the viability of medium size vessels for long lining targeting fresh fish for sashimi market. This was resulted with increase in number of domestic fleet targeting fresh tuna in the late 1990's and to peak in the early 2000's.

Currently, Tonga tuna fishery consists solely of longline fishing vessels targeting tuna and tuna-like species, with some artisanal and game fishing catches (from trolling) but still in its early stage of data collection by registration of small artisanal boats then continue on to recording of their catch. The majority of the activity is concentrated within Tonga EEZ except for foreign flagged vessels which can access high seas. Tonga has no purse seine fisheries; therefore, some of the WCPFC measures regarding purse seine fisheries are not applicable to Tonga.

Tonga has approximately 700,000km<sup>2</sup> of undeclared EEZ that extends from Latitude 14 degrees south to 26 degrees south, offers a moderate potential for exploitation. The total catches from the Tonga EEZ have displayed a similar trend to effort. The total tuna catches for Tonga's National fleets from the EEZ increased from 223 mt in 2013 to 320mt in 2014. This could be due to the increase in the effort in term of the number of vessels and hooks. A significant game-fishing sector exists in Tonga. However, interactions with the commercial long-line fleets are likely to be relatively minor as the long-line fleets have significantly declined since 2003.

Towards the end of 2014, Tonga fisheries commenced registering artisanal boats and data collection from these boats will start soon. TufArts database system provided by SPC has already been installed into the Tonga Fisheries database server to cater for these data. The main artisanal tuna fishing activities concentrate on trolling around FADs and free schools associated with birds using outboard motor boats. Vertical lines (for tuna) and mini long-lines were also introduced to fishing associations and communities to encourage them to shift fishing pressure from inshore area to deeper waters.

### 3.0 FLAG STATE REPORTING

#### 3.1 Status of the Fishery

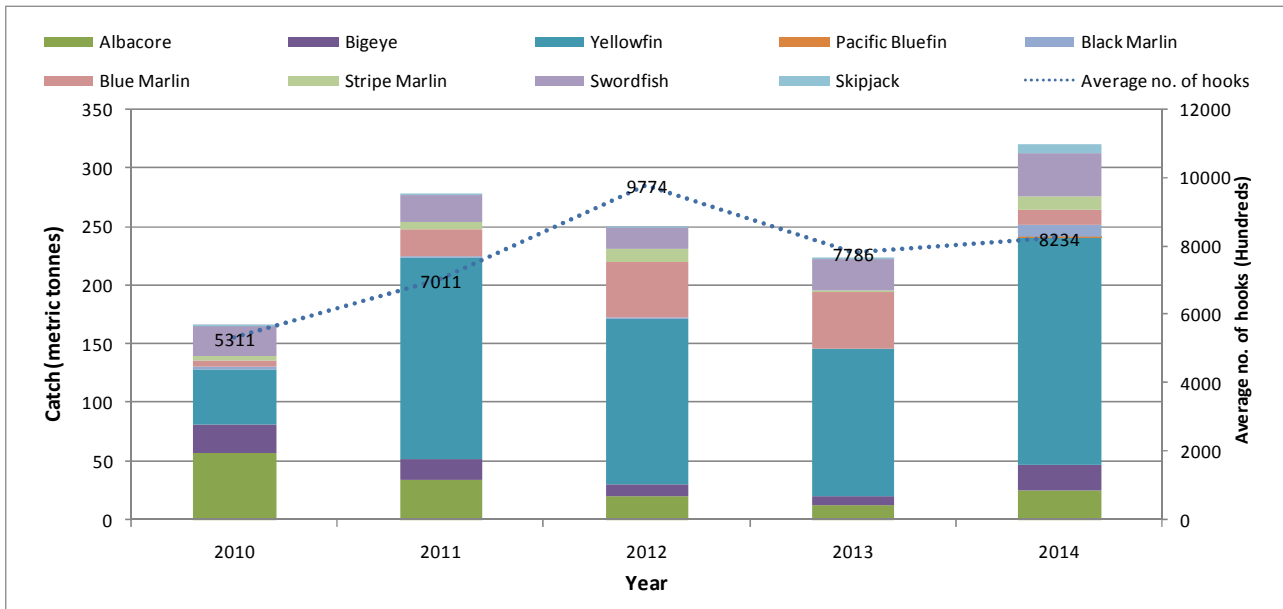
##### 3.1.1 Total annual catch, by primary species

The annual catch and effort estimated, by primary species for the national longline fleet fishing throughout the WCPF Convention Area for the years 2010 to 2014 are summarized in Table 1 with the historical estimates further provided in Figure 1. The total effort in the WCPFC-CA was approximately 8234 hundred hooks (Table 1) and it's all attributed to the Tonga EEZ. In further details, the annual catch estimates of primary species in 2014 were amounted to 320mt and it is about 43% increases from the previous year. The significant rise in catch could be due to the increase in the number of domestic vessels in 2014 (Table 4). In 2014, the catches for primary species were dominated by yellowfin (61 %) for main tuna species, followed by 8 % albacore and 7 % for bigeye tuna. Swordfish occupied 11 % of the total catch of primary species followed by 4% each of blue marlin and strip marlin.. 10mt of skipjack tuna was recorded in 2014 compared to 1mt in 2013. The big difference could be attributed to inaccurate recording of SKJ into logsheets in previous years.

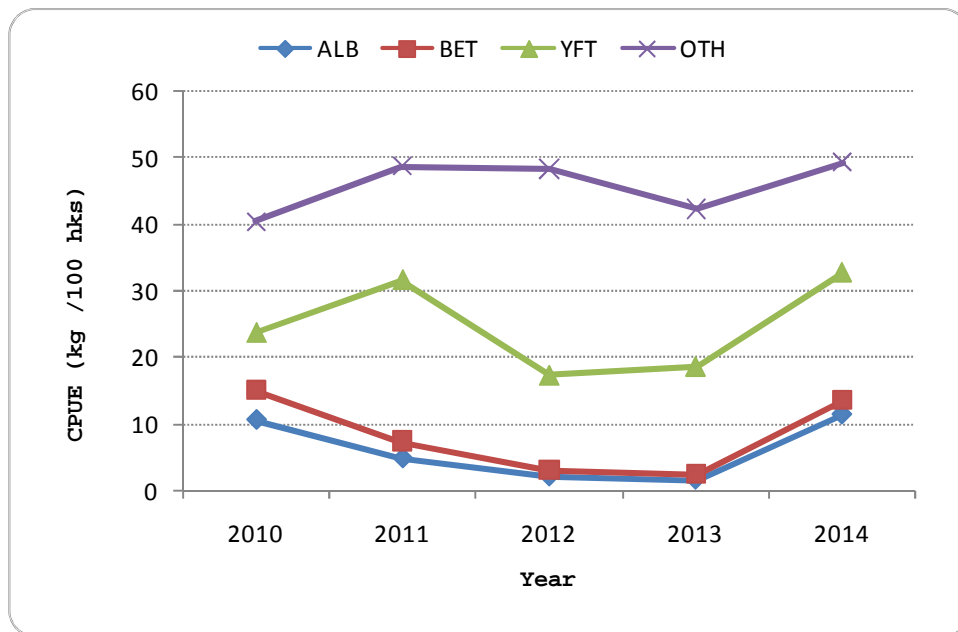
In reference to the history of this fishery in Tongan waters; longline effort in terms of number of hooks, rapidly increased from the mid 1990s and peak at more than 10 million hooks during 2002 before a rapid decline in both hooks and number vessels in recent years. The huge reduction in fishing effort is attributed to the decline in catch rates and other various factors including economic issues and the diversion of fishing efforts. The annual CPUE (kg/100hks) estimated for the primary species, for the Tongan Longliners for the year 2010 to 2014 (Figure 2), shows that CPUEs for the main species increased in 2014. Yellowfin tuna continues dominating annual catch by species with a total of 195mt in 2014.

**Table 1. Annual catch (mt) and effort (hooks) estimates for the Tonga longline vessels, by primary species, for the WCPFC Convention Area, 2010 – 2014 (Tufman reporting tools).**

YEAR	Effort	Catch (metric tonnes)									
	Total no. of hooks	Albacore	Bigeye	Yellowfin	Pacific Bluefin	Black Marlin	Blue Marlin	Stripe Marlin	Swordfish	Skipjack	Total
2010	531100	57	24	47	0	2	6	4	26	0	166
2011	701100	34	18	171	0	2	22	7	22	1	277
2012	977400	20	10	140	0	2	47	11	19	1	250
2013	778600	13	7	126	0	0	48	2	26	1	223
<b>2014</b>	<b>823400</b>	<b>25</b>	<b>22</b>	<b>195</b>	<b>0.13</b>	<b>10</b>	<b>13</b>	<b>12</b>	<b>37</b>	<b>8</b>	<b>320</b>



**Figure 1. Historical annual Catch (mt) and Effort (no. of hooks), by primary species, for the Tongan longliners were active in the WCPFC Convention Area for the years 2010 to 2014**



**Figure 1. CPUE (kg per 100 hooks) of main tuna species and others for Tonga longliners were active in the WCPFC Convention Area for the years 2010 to 2014**

### 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 2014 was dominated by Dolphin fish (*Mahimahi*) totaling 190mt followed by *Wahoo* (10mt). 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: logsheets only) within WCPFC-CA was 13mt 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.

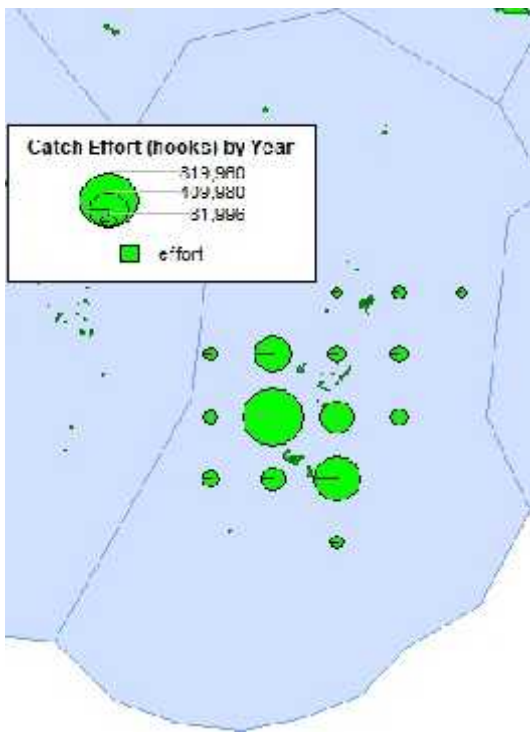
**Table 2. Annual estimated catches (mt) of non-target and by-catch species, including sharks, by the National longline Fleets, in the WCPFC Convention Area, for years 2010 to 2014. (Source: Tufman Reports – unraised longline logsheets)**

Non Target Species	2010	2011	2012	2013	2014
Wahoo	7.0	8.8	6.3	3.0	9.7
Short-Billed Spearfish	1.3	3.1	1.0	2.6	4.1
<b>Mako Sharks</b>				<b>1.0</b>	<b>8.4</b>
<b>Hammerhead Sharks</b>					<b>0.03</b>
<b>Oceanic Whitetip Sharks</b>					<b>0.0</b>
<b>Silky Sharks</b>					<b>0.0</b>
<b>Thresher Sharks</b>					<b>0.0</b>
<b>Blue Sharks</b>					<b>0.0</b>
<b>Sharks (Unidentified)</b>	<b>2.1</b>	<b>14.2</b>	<b>130.0</b>	<b>13.2</b>	<b>4.5</b>
Sailfish (Indo Pacific)	0.8	2.5	0.8	2.1	4.0
Dolphin fish	27.1	30.9	39.0	53.3	190.1
Opah/Moonfish	11.8	3.4	0.5	0.0	0.3
Others	0.0	4.3	8.5	32.2	6.5
<b>Total</b>	<b>50.1</b>	<b>67.2</b>	<b>186.0</b>	<b>107.4</b>	<b>227.5</b>

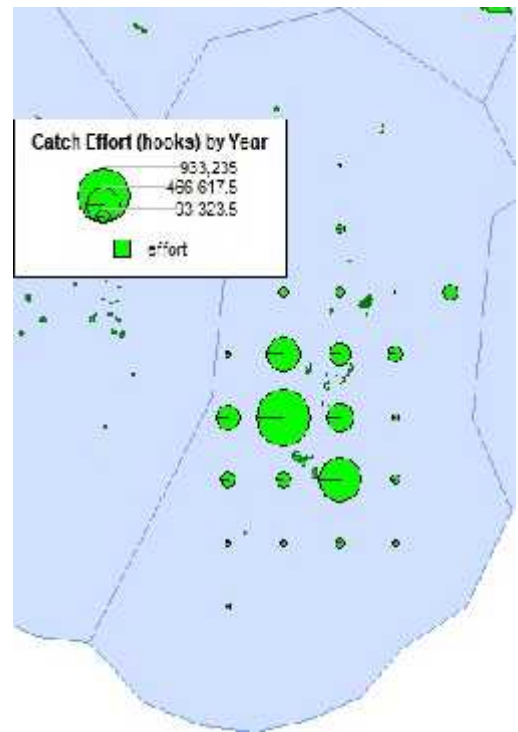
### 3.2 Fishing Patterns – National Fleets only

Figures 2a & 2b provide an illustration of the annual distribution of effort and catch for the national longline fleets over the past five years. All vessels (National fleets) were based in Tonga for boarding and unloading. In 2014, 100% of the fishing effort of the National longline fleet took place within Tonga EEZ and there was a hotspot of increased effort in the Central area of the EEZ.

The albacore catch rates from the Tonga EEZ are generally reported during the cool season of the year (April – August), with a smaller peak at the end of the year. Catch rates were relatively high in the central area of the EEZ during the second and the third quarter of the year (2014). Unfortunately, the national fleets were not targeting albacore as they concentrate targeting yellowfin and bigeye tuna for sashimi market. Yellowfin tuna dominated the annual catch distribution for the last four years, and both yellowfin and bigeye were highly reported from the central to the south of EEZ.

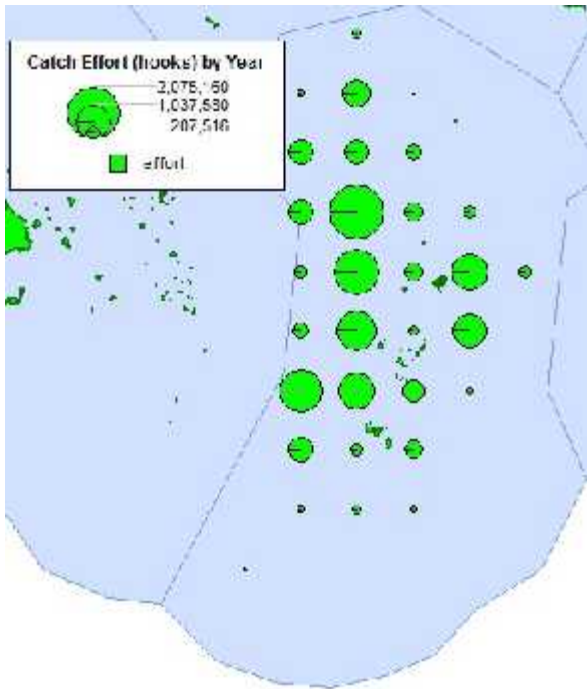


(i) 2010

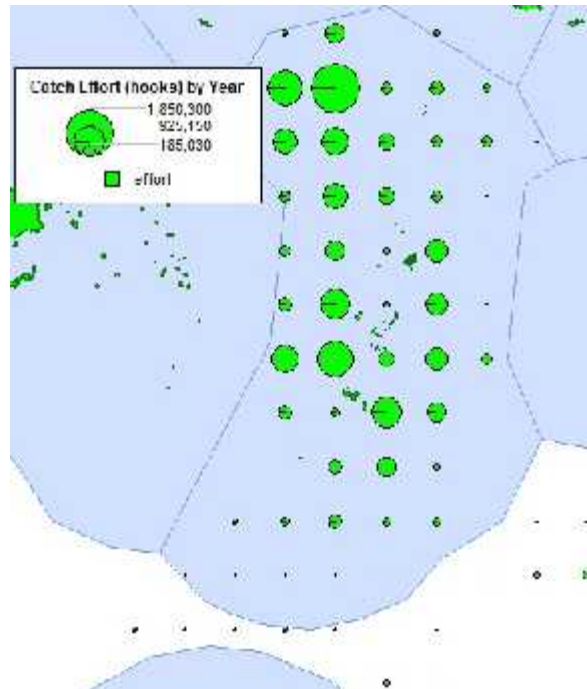


(ii) 2011

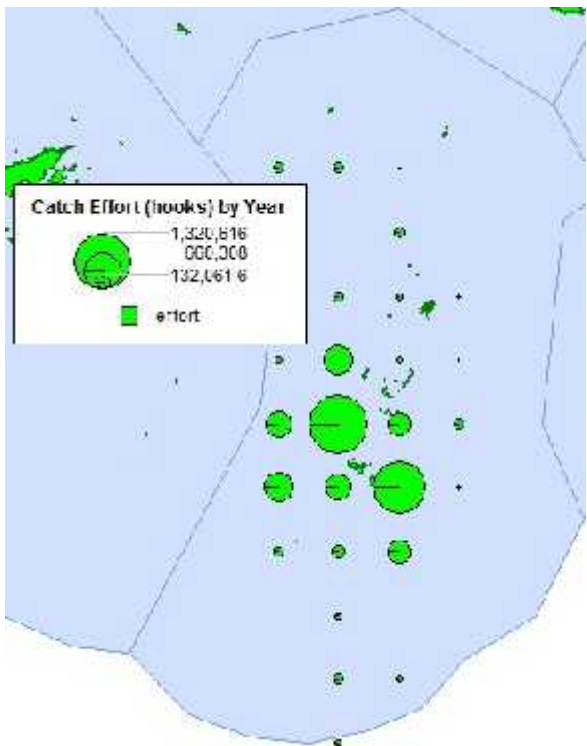




(iii) 2012

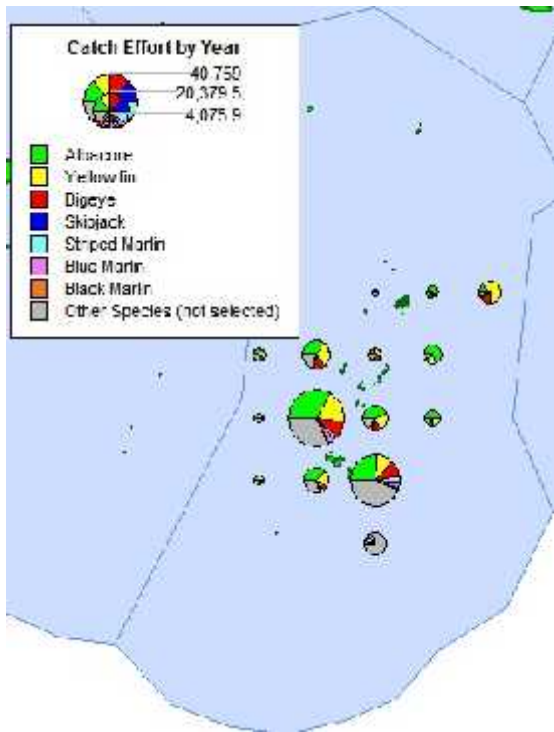


(iv) 2013

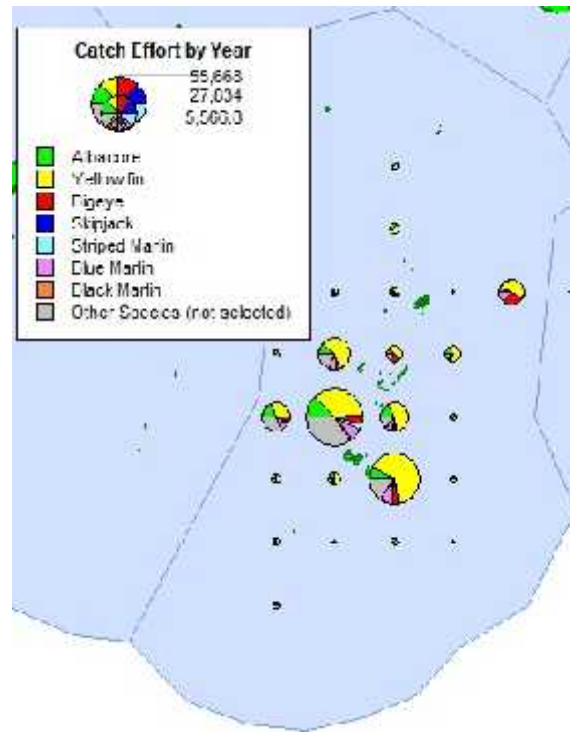


(v) 2014

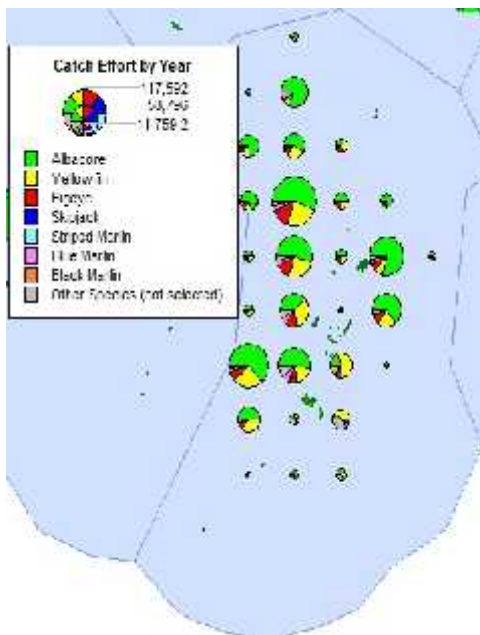
**Figure 2a (i-v).** Annual Distribution of effort (hooks) by the National Longline Fleets active in the WCPFC Convention Area, for the year 2010 to 2014.



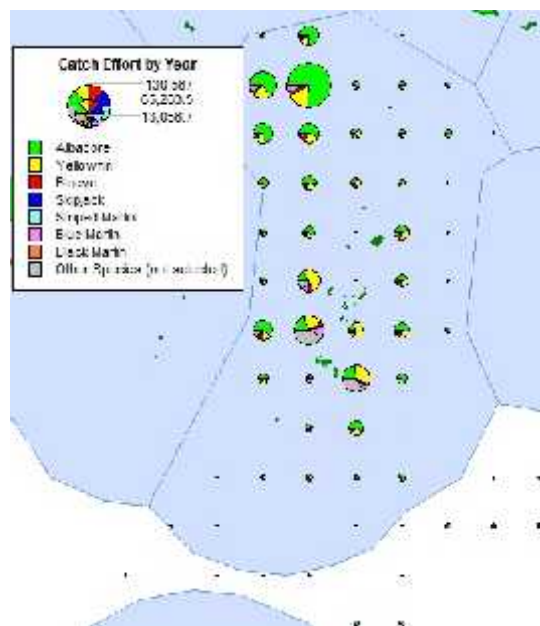
(i) 2010



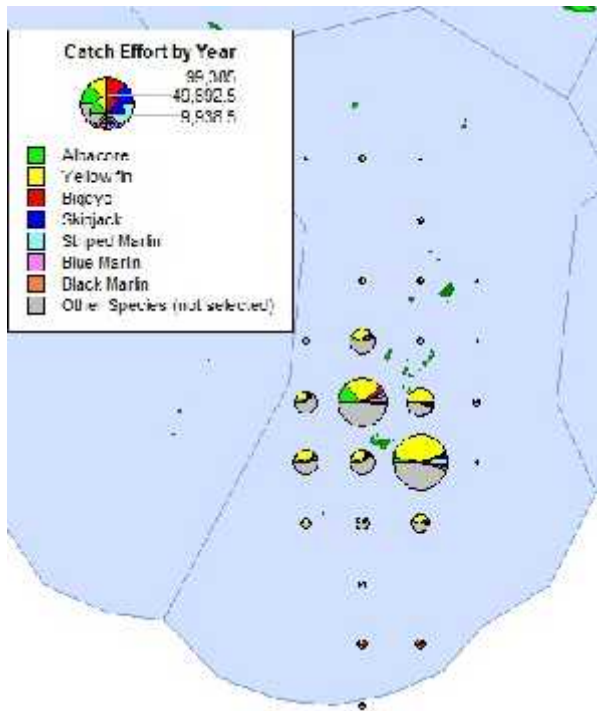
(ii) 2011



(iii) 2012



(iv) 2013



(v) 2014

**Figure 2b (i-v): Annual Distribution of target species catches (in kilogram) by the National Longline Fleets active in the WCPFC Convention Area, for the year 2010 to 2014.**

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 11.8mt of stripe marlin was caught as bycatch in the Convention Area below 15°S in 2014. CMM 2010-05, four vessels fished for albacore as bycatch in 2014 with a total of 15.1mt within the Convention Area around the south of 20°S. CMM 2009-03, a total of 33.6mt of Swordfish caught by four vessels within the Convention area of the south of 20° S. For Shark species (CMM2010-07), Mako, Hammerhead and sharks (unidentified) was recorded 8.4mt, 0.03mt and 2mt respectively. Sharks (unidentified) were all identified during port sampling to be *Mako* sharks but it was record using old version of logsheets form. More of the CMM report is attached to this report as Appendix 1 which includes summary and data reporting.

### 3.3 Fleet Structure

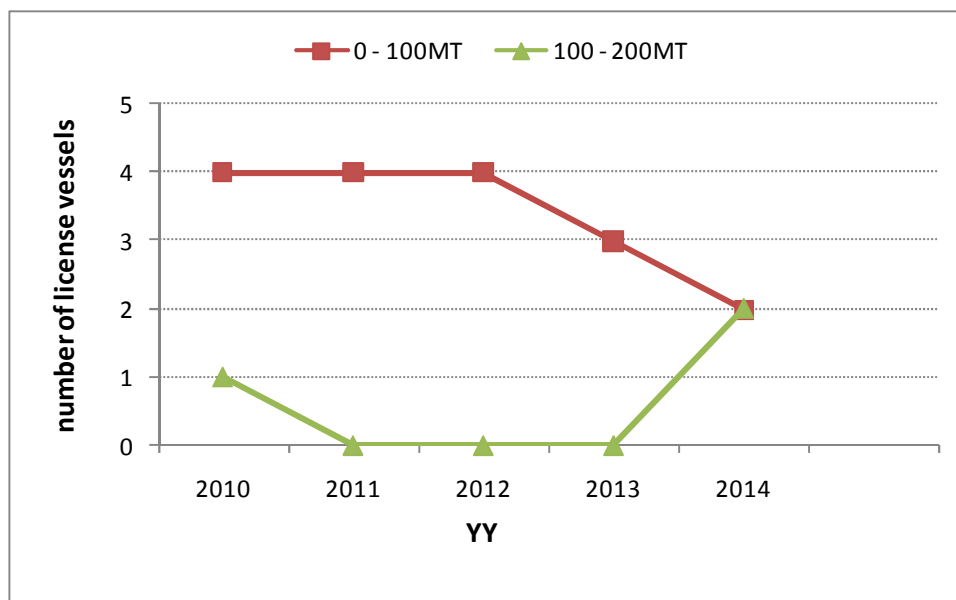
Following the development of the domestic longline fishery and the opening of the fishery for the chartering vessels, locally-based Foreign Fishing Vessel (LBFFV) in the late 1990s the tuna fleet increased to peak in 2002 and 2003 but has subsequently declined due to poor catch rate and high operational costs. In 2004, a moratorium was placed on licensing Locally Based Foreign Fishing Vessels (LBFFV) causative to their relocation to other countries. However, in 2011, Tonga lifted the

moratorium allowing again foreign fishing vessels as part of its programme to develop tuna fishing production. This program started in October 2011 with one locally based vessel which includes in the national fleet.

In 2014, the Tonga National fleets consist of four (4) domestically-based longline vessels that operate within the WCPFC-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 (RFV) vessel but no high seas permit has been issued during 2014. .

**Table 3. The number of National Fleets vessels, by size category, active in the WCPFC Convention Area, 2010 - 2014.**

Gear	Longline				
Fleets	National Fleets				
Source	Number of Licenses Vessels (TufMan)				
Size Category (GRT)	2010	2011	2012	2013	2014
0 - 100MT	4	4	4	3	2
100 - 200MT	1	0	0	0	2
200+	0	0	0	0	0



**Figure 3: Historical annual longline vessels number for Tonga, for the WCPFC Convention Area, 2010 - 2014**

## 4.0 COASTAL STATE REPORTING

Tables 4 and 5 provide description of foreign-flagged vessels licensed to fish in Tongan water over the past four (4) years since the moratorium for locally-based and foreign fishing vessels lifted in 2011. Foreign fishing vessels have been re-allowed to fish in Tonga water as part of Tonga's programme to increase tuna fisheries production. In 2014, a total of 19 foreign flagged longline vessels had valid license to fish in Tonga EEZ. The licenses for the majority of these vessels were expired during the early months of the year without renewal. Among these, only 5 vessels (4 Taiwanese & 1 Chinese flagged) were active and operated throughout the year within Tonga EEZ and High Seas.

**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)	2011	2012	2013	2014
0 - 100MT	1	19	19	13
100 - 200MT	0	2	6	5
200+	0	1	1	1

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

Year	Flag			Total
	CHINA	CH-TAIPEI	FIJI	
2011		1		1
2012	1	20	1	22
2013	3	20	3	26
2014	3	14	2	19

Annual catch for foreign flagged vessels in 2014 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 contribute to Tonga National Catch of tuna and tuna-like species within Tonga jurisdiction waters. 60% of the catches for foreign flagged vessels were caught by Taiwanese vessels and 40% by Chinese vessels. Again, yellowfin tuna was the highest caught species in zone with 344mt (45% of total catch) followed by albacore with 319mt (41%) with lesser percentage of 5% of bigeye tuna. There was a considerable decrease by 67% of the total catch of foreign flagged vessel in 2014 (765mt) compared

to 2013 which totaling 2,304mt. This decline was due to the decrease in the number of vessel license and active during 2014.

All foreign vessels were managed and operated through a locally-based agent, *The Ngatai Marine Enterprise*. Some foreign fishing vessels offloaded their catch in ports at Suva and Levuka in Fiji and Pagopago in American Samoa according to the condition of their fishing licenses. This is due to the well developed infrastructure in these locations, such as the availability of -50°C cargo containers and good access to cannery factories. The fishing effort was widely distributed throughout the zone and also occurs more to the northern sides. Albacore has been the dominated species.

**Table 6. Annual Longline catch and effort estimates by foreign flagged vessels licensed to fish with Tonga Home EEZ (national waters) in 2014. Operational logsheet data raised using VMS eRecap Application Tools.**

FLAG	YEAR	GEAR	ALB	YFT	BET	SKJ	BUM	BLM	MLS	SWO	SFA	FAL	BSH	OCS	THR	MAK	HAM	POR	Total
CHINA	2014	LL	160.59	112.5	16.06	1.91	8.76	0	2.36	3.53	0	0	0	0	0	0	0	0	305.71
CHINESE TAIPEI	2014	LL	158.82	230.95	23.9	0	10.26	0.36	8.17	7.52	0.75	0.46	12.76	0	0	5.28	0	0	459.23
<b>TOTAL</b>																			<b>764.94</b>

#### 4.0 SOCIO-ECONOMIC FACTOR

Exportation of catches from Tonga continued in 2014. The national fleets contributes in large portion into total fish has been exported from Tonga in 2014. This is due to the increase in effort which drives into 43% increased in catch compared to 2013. There are a few numbers of foreign vessels continue to provide additional revenue stream to the domestic fisheries sector in Tonga. Most of the catches by foreign vessels that were unloaded in port Nuku’alofa were repacked into shipping container and exported. This contributed to the collected revenue from the charging of resource rent for the exportation of marine products.

The FOB values charged by species with TOP\$12 for Swordfish; TOP\$9 for Sharks and TOP\$7.00 for the rest of the species. 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 2014 was increased by 46% from TOP\$2,152,739.00 in 2013 into TOP\$3,137,045.00 during 2014.

## 5.0 DISPOSAL OF CATCH

### 5.1 Marketing

Tonga's main markets for its fresh chilled tuna exports are Japan, US (Los Angeles, Hawaii), New Zealand and Australia. Taiwan and PagoPago used to be a target market for frozen albacore. At present, fresh chilled albacore and some of the bycatch are sold locally. Some of the licensed foreign vessels fishing in Tonga EEZ unloaded their catches mostly in Suva, Levuka and Pago Pago.

Figure 5 describes the main markets destination with respect to weight of longline catch export for Tonga in 2014. The biggest portion; 33.9 % of the total export volume was exported to Japan followed by 23.6 % to Taiwan; 11.9 % to Thailand; 11.5% to Honolulu and 8.8% to Australia. Other important markets are New Zealand and Pagopago but in a low portion of 3.8% and 3.0% respectively. A significant increase in export volume to Japan's sashimi market, Honolulu and also to Australia was due to the increase in catch and effort by domestic fleets with 4 vessels operated in 2014 and the domestic fleets' targeted fresh tuna for sashimi market. The foreign vessels dominated the export of frozen fish to cannery in Pagopago and Taiwan with small portion to Japanese market.

Yellowfin tuna dominated the exported of individual species with 38.2%% of the total volume, followed by albacore and sharks with 20.5% and 11.7% respectively. Export of bycatch species described as "other species" (OTH) were also exported (frozen) mainly to Taiwanese and Thailand markets and they consisted of marlins species, sailfish, oilfish, shortbill spearfish, wahoo, mahimahi and escolar; and it signified 24.5% of the total volume of export fish. Foreign vessels also provide more fish to be sold locally and it continues contribute to a drop in fish price compared to the past three years.

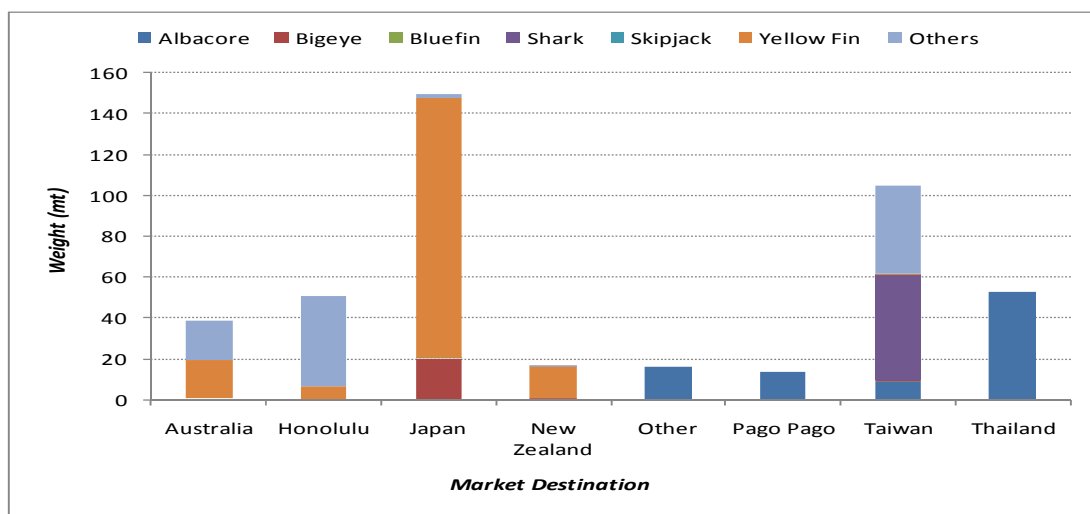


Figure 5. Longline catch (MT) export and Destinations for Tonga, 2014

## 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.

The domestic tuna fishing companies, *Atlantis Fisheries* and *Fuko Fishing* continue to operate 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 their processing and retailing plant. They also plan to extend their services to operate more longline vessels and a better processing unit.

The National Fisheries Council (NFC) continues on partnership with Fisheries department 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 2014, 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 improvement of database system especially TUFMAN and TUBs allows speedy in extracting and analyzing of data for the scientific report. TufArts database has been installing into Tonga Fisheries database system and start registration of artisanal boats prior to catch and effort data collections.

The Stock Assessment Workshop was recognized as an important program in capacity building for fisheries officers and managers in the region. In this workshop, for the first time, participants were 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 (2009) has been used by longline vessels in 2014. Unfortunately, a very small portion of the trips was filled in 2007 version which shows sharks unidentified on reporting applications tool. 100% logsheets coverage was achieved from both National fleets and Taiwanese flagged vessel licenses to fish in Tonga, with 78% logsheets coverage collected from Chinese flagged vessels. Missing logsheets experience with those foreign vessels unloaded 100% of their catch overseas. Unloading forms were submitted together with logsheets in timely manner.

### **7.2 Observer Programme**

The Tonga National Observer Programme (TNOP) has attempted to deploy observers' onboard domestic and foreign longline vessels operated within Tonga EEZ, and also place observers on US purse seiner vessels under Multilateral Treaty arrangement. The observer coverage for TNOP was 50% onboard foreign fishing vessels license to fish in Tonga EEZ and 2% onboard Tonga flagged vessels. All those observer trips are non-ROP trips.

TNOP 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**

Tonga fisheries continues to employ a dedicated port samplers which covering almost 100% of the longline unloading in port Nuku'alofa. The Tonga Fisheries Division is obliged to maintain this high percentage coverage of port sampling to ensure the fulfillment of its obligation to the Commission. Collated data are also being sent to SPC/OFP on a regular basis for further analysis and also store second copy of the data through TUFMAN database system. SPC/OFP has been involved such activities as successful integration and regular updates of the TUFMAN database and the installation of TufArts database in Tonga.

The National Observer and port sampling program warmly extend 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. This scientific report completed with all your great effort in different approach!!! ***Malo 'aupito***

## Appendix 1 – CMM Reporting

### Summary for each CMM

CMM Reference	Response
CMM 2005-03 [North Pacific Albacore], Para 4	<b>NOT APPLICABLE</b>
CMM 2006-04 [South West striped Marlin], Para 4	Four vessels catch a total of 11.8mt of SW_MLS as a <i>bycatch</i> and it all caught in the Convention area of south of 15°S.
CMM 2007-04 [Seabirds], Para 9	Based on available data, there was no interaction with sea birds by tuna longline fisheries.
CMM 2009-03 [Swordfish], Para 8	Total of four (4) vessels takes SWO as bycatch with a total catch level of 37mt; and 33.6mt of the total catch level of SWO were caught in the Convention Area south of 20°S.
CMM 2009-06 [Transshipment], Para 11(ANNEX II)	<b>NOT APPLICABLE</b>
CMM 2010-05 [South Pacific albacore], Para 4	All vessels (4) were actively fishing and taken ALB as bycatch with a total catch level of 25mt; and 15.1mt of the total catch level was caught in the Convention area of South of 20°S.
CMM 2010-07 [Sharks], Para 4	<p>Four (4) vessels fished and catch sharks species: MAKO sharks; 8.4mt; Hammerhead sharks; 0.03mt and Sharks Unidentified; 2mt. All sharks were trunk and fins retained</p> <p>Note that: sharks unidentified were recorded on old version (2007) of longline logsheets. Based on unloading and port sampling data these sharks' species were all identified as Mako sharks.</p>
CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5	Not applicable as Tonga does not have a purse seine fleet
CMM 2011-04 [Oceanic white-tip sharks], Para 3	Based on available data no catches of Oceanic White tip has been reported in Logsheets data and; One (1) Oceanic white shark has been reported on observer data and it was <b>released alive</b> .

CMM Reference	Response
CMM 2012-04 [Whale sharks], Para 06	Not applicable as Tonga does not have purse seine fleet
CMM 2012-07 [Seabirds], Para 9	Based on available data, there was no interaction with sea birds within tuna longline fisheries.
CMM 2013-08 [Silky sharks], Para 3	Based on available data no catches of Silky sharks has been reported in Logsheet data; and One (1) Silky shark has been reported on observer data and it was <b>released alive</b> .
Observer coverage(WCPFC 11 decision – para 484(b))	Observer Coverage: National Observer Program <ul style="list-style-type: none"> <li>• 50% onboard Foreign Fishing vessels license to fished in Tonga EEZ</li> <li>• 2% onboard National Fleets (domestic longliners)</li> <li>• all observer trips are <b>Non-ROP</b> trips</li> </ul>

## Data provided for each CMM

### *CMM 05-03 –North Pacific Albacore*

NOT APPLICABLE - No Tongan flagged vessel fished north of the equator

### *CMM 06-04 –SW Striped Marlin*

Four (4) vessels fished and catch a total of 11.8mt of SW\_MLS as a bycatch and it all caught in the Convention area of south of 15°S (Source: Tufman reporting tools)

Gear	Longline			
Fleets	National Fleets			
Source	TufMan Reporting Tools - SW MLS catches by National Fleets			
Flag	Year	Vessels	Catch (Numbers)	Catch (MT)
TO	2014	4	284	11.8
TO	2013	1	35	1.7
TO	2012	3	63	3.0

### *CMM 07-04 – Seabirds*

Based on available data, there was no interaction with sea birds by tuna longline fisheries.

*CMM 09-03 –SW Swordfish*

Total of four (4) vessels takes SWO as bycatch with a total catch level of 37mt; and 33.6mt of the total catch level of SWO were caught in the Convention Area south of 20°S

Gear	Longline			
Fleets	National Fleets			
Source	TufMan Reporting Tools - <i>South Pacific Swordfish catch by National Fleets</i>			
Flag	year	Vessels	Catch (Number)	Catch (MT)
<b>TO</b>	<b>2014</b>	<b>4</b>	<b>698</b>	<b>33.6</b>
TO	2013	1	297	13.1
TO	2012	3	183	8.2

*CMM 09-06 – Transhipments*

NOT APPLICABLE

Transshipments are not applicable to Tonga longline fisheries. All vessels within Tonga National fleets will be offloaded in port facility. It's also prohibited in Tonga Fisheries Waters.

*CMM 10-05 –South Pacific Albacore*

All vessels (4) were actively fishing and taken ALB as bycatch with a total catch level of 25mt; and 15.1mt of the total catch level was caught in the Convention area of South of 20°S.

Gear	Longline			
Fleets	National Fleets			
Source	Tufman Reporting Tools - <i>SP ALB catches by National Fleets</i>			
Flag	Year	Vessels	Catch (Number)	Catch (MT)
<b>TO</b>	<b>2014</b>	<b>4</b>	<b>821</b>	<b>15.1</b>
TO	2013	1	339	6.0
TO	2012	3	398	6.6

### *CMM 10-07 – Sharks*

Four (4) vessels fished and catch sharks species: MAKO sharks; 8.4mt; Hammerhead sharks; 0.03mt and Sharks Unidentified; 2mt and all sharks were trunk and fins retained

Note that sharks unidentified were recorded on old version (2007) of longline logsheets. Based on unloading and port sampling data these sharks' species were all identified as Mako sharks.

Gear		Longline				
Fleets		National Fleets				
Source		CMM 10-07 - Shark catches by National Fleets (Tufman Reporting)_Raised from unloading data				
Gear	Flag	Species	Estimated number	Estimated Weight(Kg)	EEZ	Fate
LL	TO	MAKO SHARKS	207	8390	TO	Retained
LL	TO	SHARKS (UNIDENTIFIED)	67	1970	TO	Retained
LL	TO	HAMMERHEAD	3	30	TO	Retained

### *CMM 11-03 – Cetaceans*

Not applicable as Tonga does not have a purse seine fleet

### *CMM 11-04 –Oceanic White-Tip Shark*

Based on available data no catches of Oceanic White tip has been reported in Logsheet data and; One (1) Oceanic white shark has been reported on observer data and it was **released alive**.

<i>CMM 11-04 OCEANIC WHITE-TIP Sharks interaction in Purse seine and longline fisheries</i>									
Gear	Flag	Species	Date	lat	lon	EEZ	Fate	Life Status	Individuals
OCEANIC WHITE-TIP									
L	TO	SHARK	20-06-14	2003.453S	17521.608W	TO	DUS	A1	1

### *CMM 12-04 –Whale Sharks*

Not Applicable. Tonga does not have a purse seine fleet

## *CMM 13-08 –Silky Sharks*

Based on available data no catches of Silky sharks has been reported in Logsheet data; and one (1) Silky shark has been reported on observer data and it was **released alive**.

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*CMM 13-08 – Silky shark species catches by National Fleet*

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<b>Gear</b>	<b>Flag</b>	<b>Species</b>	<b>Date</b>	<b>lat</b>	<b>lon</b>	<b>EEZ</b>	<b>Fate</b>	<b>Life Status</b>	<b>Individuals</b>
L	TO	SILKY SHARK	28-06-14	1913.118S	17338.197W	TO	DUS	A1	1

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### *Observer coverage (WCPFC 11 decision – para 484(b))*

Tonga National Observer Program has covered 50% onboard Foreign Fishing vessels license to fished in Tonga EEZ and 2% onboard National Fleets. All are **Non-ROP** trips

**Note: Full detailed data available from the WCPFC ROP Database.**

## 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.