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

WCPFC-SC18-AR/CCM-25

TONGA



Ministry of Fisheries

GOVERNMENT OF THE KINGDOM OF TONGA

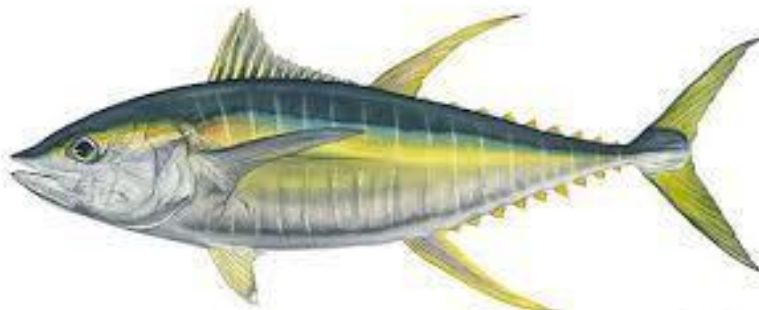
The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Scientific Committee

**Eighteenth Regular
Session**

Online 10 – 19 August 2022

TONGA ANNUAL REPORT TO THE COMMISSION 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 2022	YES
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1.0 ABSTRACT

The tuna fishery in Tonga is composed of a National (Flag State) and Foreign longline fleet (Coastal state). The total estimated catch for tuna and tuna-like species for national and foreign fishing fleets for 2021 was 2,087.2 mt, a drop of 7.5% from 2,243.1 mt in 2020. The Tonga National fleet consists of 4 National longline vessels fished entirely in Tongan waters with an estimated 290 mt for primary species, an increase of 21% compared to 230 mt in 2020. The total estimated catch of all species for National fleets was 327.3 mt, a 13% increase compared to 284.4 mt in 2020. The Foreign fleets consist of 10 longline vessels with a total estimated yield of 1,760 mt, an 11.3% decrease compared to 1,959 mt in 2020.

Yellowfin tuna species dominate the overall catch by the national fleets with 203 mt. On the other hand, Mahimahi dominates the catches for non-target species with 19 mt. These results indicate that the National fleets targeted Yellowfin and Bigeye tuna for the fresh fish market.

The foreign fleets catch dominated by Albacore tuna with 809 mt. According to the Term and Conditions for tuna fishing licenses, targeting any shark species is prohibited in Tonga. And the observer data reported no interactions with Species of Special Interest (e.g. turtles, marine mammals and seabirds) in Tonga's longline fishery.

With the ongoing disruption of COVID-19 restrictions and border closures, the Ministry of Fisheries made every effort to keep this fishery going. As a result, the National fleet unexpectedly shows an increase in its total catch harvested and exported in 2021, despite the decrease in the number of active fleets and number of trips. Yet, the insignificant results do not indicate any impact on the whole stock in the region and the WCPO.

Tonga has no purse seine fisheries; therefore, some WCPFC measures regarding purse seine fisheries do not apply to Tonga. But at the same time, Tonga has set an effort limit for Purse Seine fishing with its EEZ per calendar year not to exceed 150-200 days and no days recorded for any Purse seine fishing activity within Tonga EEZ in 2021.

Tonga has its National Observer Program and an active domestic port sampling program for highly migratory species. These programs continue to work closely with the Offshore Fisheries Program (OFP) of the Secretariat of the Pacific Communities (SPC) on data collection regarding the status of tuna resources in the Tonga EEZ.

Table 1. Annual catch and effort (hooks) estimate for the Tonga longline vessels, by primary species, for the WCPFC Convention Area, 2017 – 2021.

WCPFC Key Species	2017		2018		2019		2020		2021	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	27	5%	23	7%	30	9%	13	6%	10	4%
BIGEYE TUNA	24	4%	34	10%	16	5%	10	4%	14	5%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0	0%	0	0%
SKIPJACK TUNA	12	2%	4	1%	2	1%	3	1%	1	0%
YELLOWFIN TUNA	374	69%	201	61%	187	56%	155	67%	203	70%
BLACK MARLIN	13	2%	5	2%	4	1%	2	1%	0	0%
BLUE MARLIN	40	7%	17	5%	47	14%	21	9%	41	14%
STRIPED MARLIN	2	0%	11	3%	14	4%	4	2%	10	3%
SWORDFISH	32	6%	44	13%	35	10%	16	7%	9	3%
BLUE SHARK	0	0%	1	0%	2	1%	0	0%	0	0%
SILKY SHARK	0	0%	0	0%	10	3%	0	0%	0	0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
MAKO SHARKS	15	3%	35	11%	12	4%	6	3%	2	1%
OCEANIC WHITETIP SHARK	0	0%	3	1%	6	2%	0	0%	0	0%
PORBEABLE / SALMON SHARK	0	0%	0	0%	0	0%	0	0%	0	0%
WHALE SHARK	0	0%	0	0%	0	0%	0	0%	0	0%
THRESHER SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
Total catch	539		332		336		230		290	
Total effort (hhks)	15596		12253		12008		7774		6645	

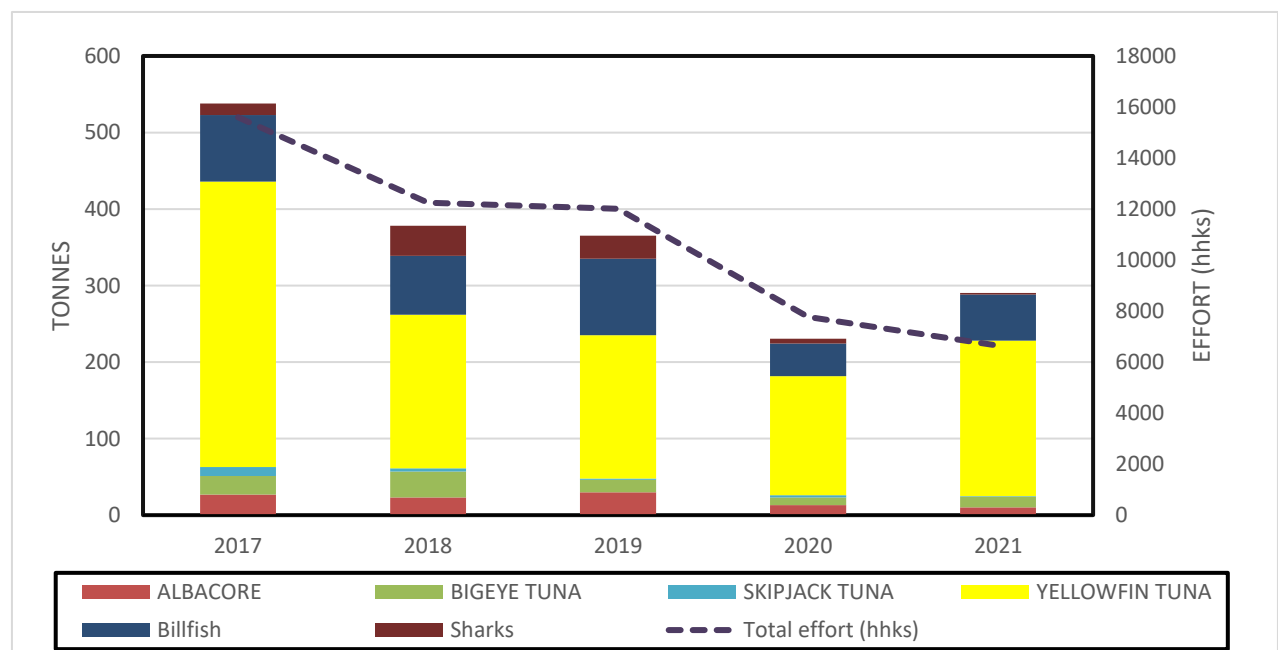


Figure 1: Historical annual Catch (mt) and Effort (no. of hooks), by primary species, for the Tongan longliners (National Fleets) were active in the WCPFC Convention Area for the years 2017 to 2021

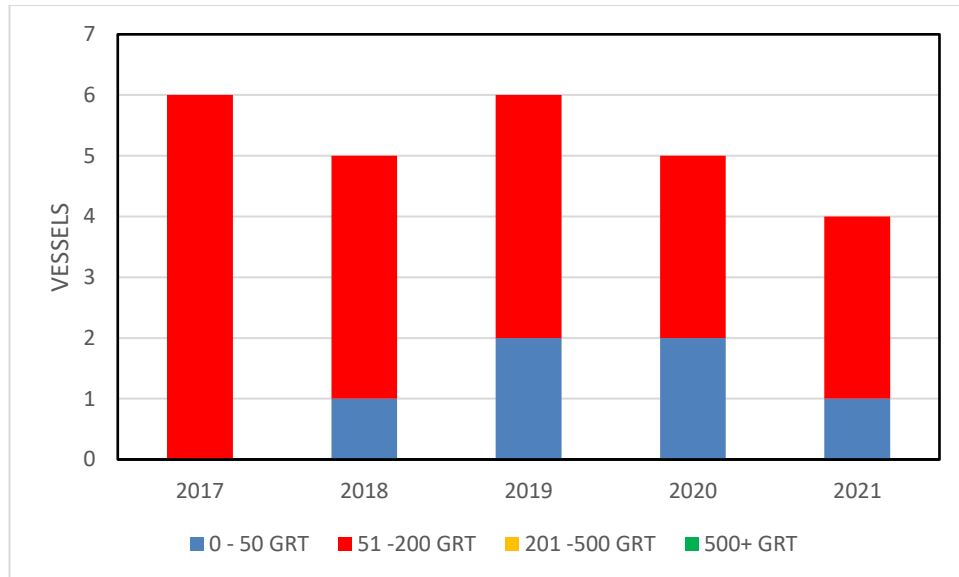


Figure 2: Historical annual longline vessels number for Tonga for the WCPFC Convention Area, 2017– 2021.

Table 2. Number of active fishing vessels in tuna fisheries in WCPFC Convention Area by gear and size class.

Gear	LONGLINE
Fleet	National Fleets

Vessel category	2017		2018		2019		2020		2021	
	No.	%	No.	%	No.	%	No.	%	No.	%
0 - 50 GRT	0	0%	1	20%	2	33%	2	40%	1	25%
51 -200 GRT	6	100%	4	80%	4	67%	3	60%	3	75%
201 -500 GRT	0	0%	0	0%	0	0%	0	0%	0	0%
500+ GRT	0	0%	0	0%	0	0%	0	0%	0	0%
Total	6	100%	5	100%	6	100%	5	100%	4	100%

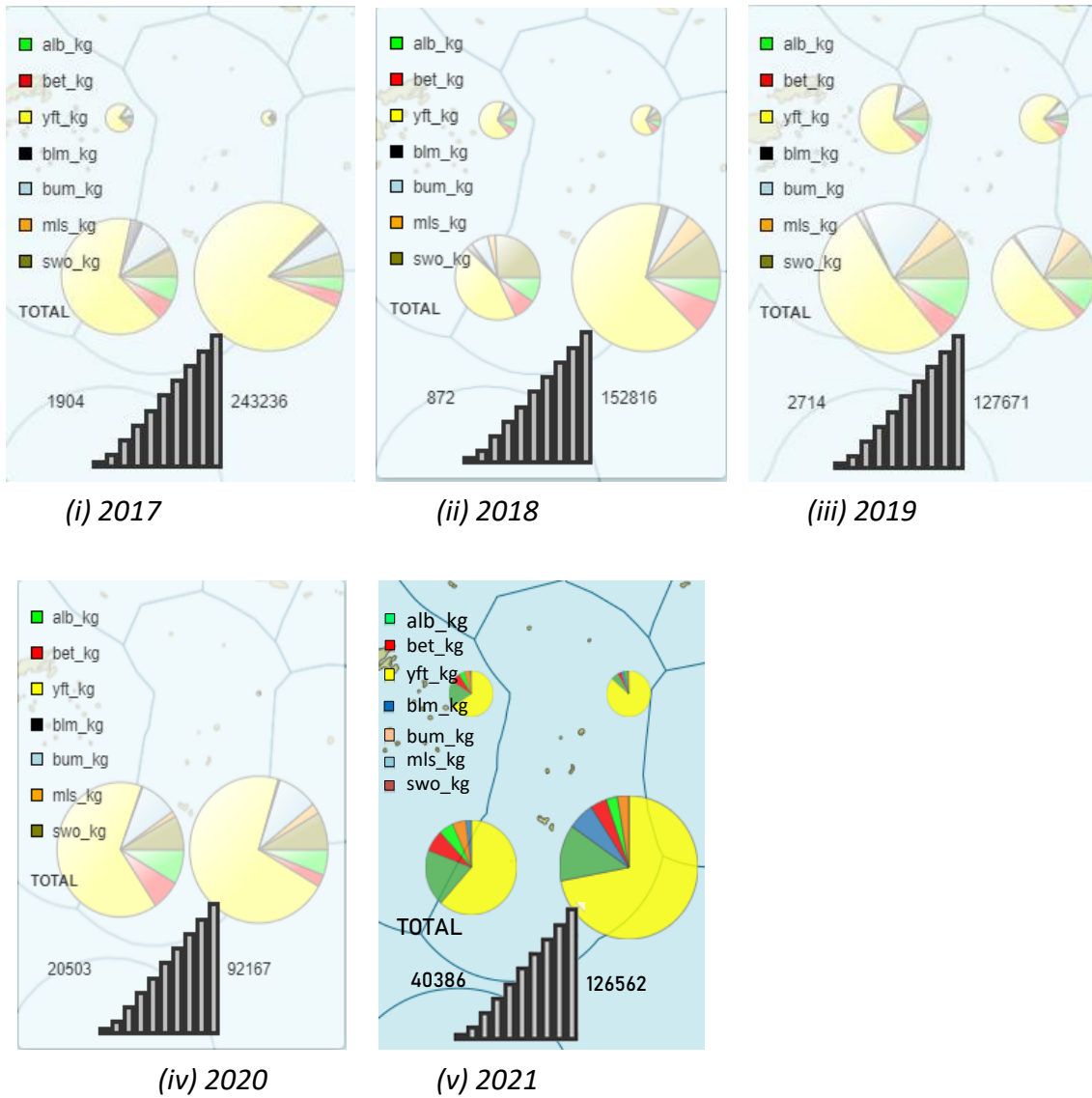


Figure 3a (i-v). Annual distribution of Longline National Fleet catches by target tuna species (in kilograms) in the WCPF Convention Area from 2017 to 2021.

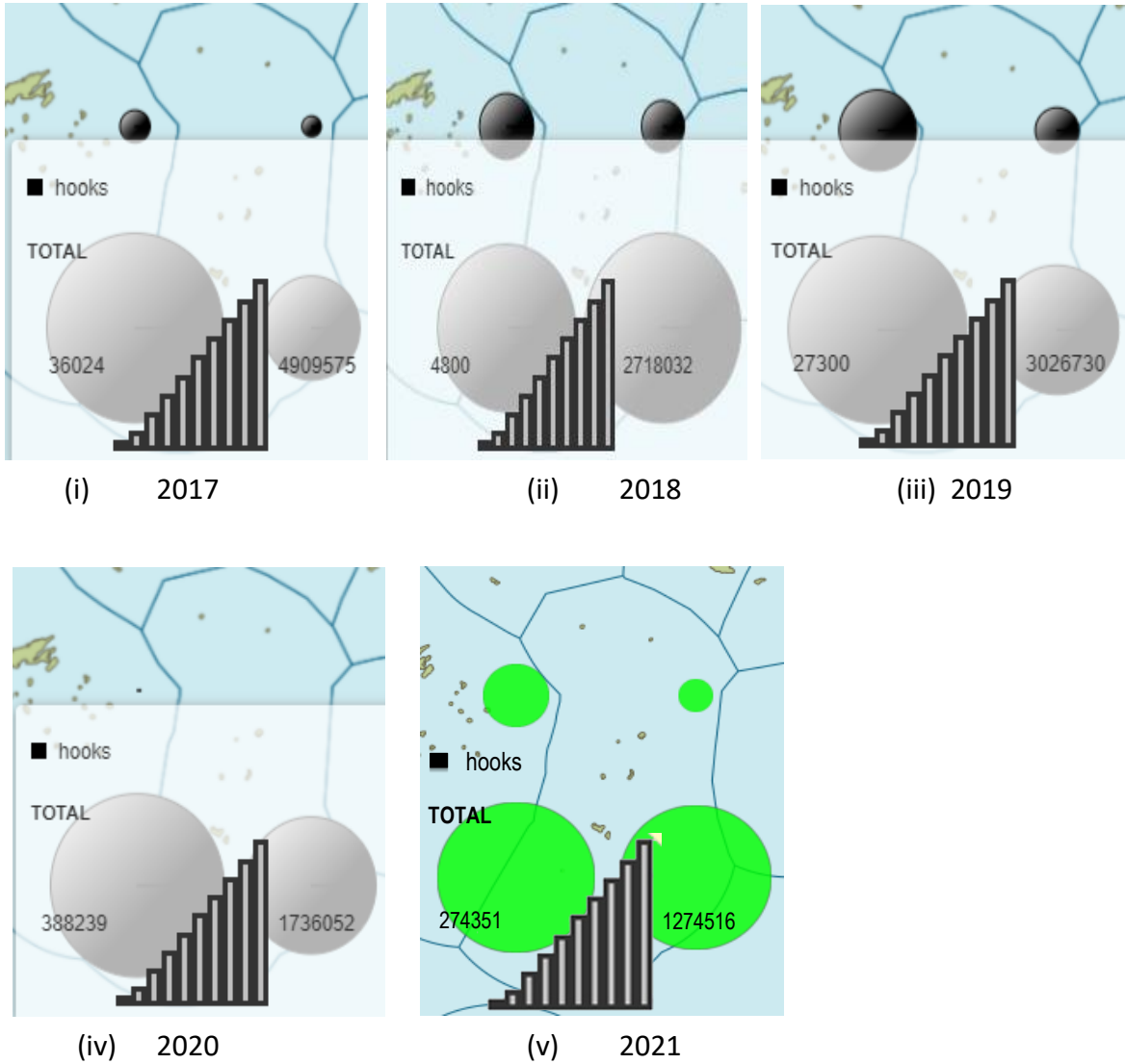


Figure 3b (i-v): Annual distribution of Longline National Fleet effort (in hooks) in the WCPF Convention Area from 2017 to 2021.

Table 3: Annual RETAINED catch by key species in the WCPFC Convention Area for 2017 – 2021.

WCPFC Key Species	2017		2018		2019		2020		2021	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	27	5%	23	7%	30	9%	13	6%	10	4%
BIGEYE TUNA	24	4%	34	10%	16	5%	10	4%	14	5%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0	0%	0	0%
SKIPJACK TUNA	12	2%	4	1%	2	1%	3	1%	1	0%
YELLOWFIN TUNA	374	69%	201	61%	187	56%	155	67%	203	70%
BLACK MARLIN	13	2%	5	2%	4	1%	2	1%	0	0%
BLUE MARLIN	40	7%	17	5%	47	14%	21	9%	41	14%
STRIPED MARLIN	2	0%	11	3%	14	4%	4	2%	10	3%
SWORDFISH	32	6%	44	13%	35	10%	16	7%	9	3%
BLUE SHARK	0	0%	1	0%	2	1%	0	0%	0	0%
SILKY SHARK	0	0%	0	0%	10	3%	0	0%	0	0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
MAKO SHARKS	15	3%	35	11%	12	4%	6	3%	2	1%
OCEANIC WHITETIP SHARK	0	0%	3	1%	6	2%	0	0%	0	0%
PORBEABLE / SALMON SHARK	0	0%	0	0%	0	0%	0	0%	0	0%
WHALE SHARK	0	0%	0	0%	0	0%	0	0%	0	0%
THRESHER SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
Total catch	539		332		336		230		290	
Total effort (hhks)	15596		12253		12008		7774		6645	

Table 4: Annual DISCARDED catch by key species in the WCPFC Convention Area for 2017 – 2021.

WCPFC Key Species	2017		2018		2019		2020		2021	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	0.1	5%	0	0	2.9	0	0	0%	0	0%
BIGEYE TUNA	0.2	10%	0	0.4	0	0	0	0%	0	0%
PACIFIC BLUEFIN TUNA	0	0%	0	0	0.1	0	0	0%	0	0%
SKIPJACK TUNA	0	0%	0	0	0	0	0	0%	0	0%
YELLOWFIN TUNA	0.2	11%	0	0.5	0	0.1	0.2	64%	0	0%
BLACK MARLIN	0.2	11%	0	0	0	0	0	0%	0	0%
BLUE MARLIN	0	0%	0	0	0	0	0	0%	0	0%
STRIPED MARLIN	0	0%	0	0	0	0	0	0%	0	0%
SWORDFISH	0.7	38%	0	0	0	0.2	0.1	36%	0	0%
BLUE SHARK	0.5	26%	0	0	0.1	0.1	0	0%	0.284	69%
SILKY SHARK	0	0%	0	0	0	0.3	0	0%	0.056	14%
HAMMERHEAD SHARKS	0	0%	0	0	0	0	0	0%	0	0%
MAKO SHARKS	0	0%	0	0	0	0	0	0%	0	0%
OCEANIC WHITETIP SHARK	0	0%	0	0.1	0	0.2	0	0%	0.07	17%
PORBEABLE / SALMON SHARK	0	0%	0	0	0.1	0	0	0%	0	0%
WHALE SHARK	0	0%	0	0	0	0	0	0%	0	0%
THRESHER SHARKS	0	0%	0	0	1.3	0	0	0%	0	0%
Total	1.8		0		4.5		0.3		0.41	

Table 5. Annual estimated catches (mt) of non-target, associated and dependent species by the Tongan Longliners (National Fleets) in the WCPFC Convention Area for 2017 to 2021.

Non-Target Species	2017	2018	2019	2020	2021
Wahoo	13	8	9	5	5
Sailfish (Indo Pacific)	6	6	20	6	7
Dolphin fish	121	107	141	38	19
Opah/Moonfish	0	0	0	0	0
Others	9	4	15	5	3
Total	149	125	185	54	34

2.0 BACKGROUND

Tongan commercial fisheries for high migratory species started in the early 1970's with a second-hand longliner and a skipjack vessel from Japan. In early 1980 the Government investigated the commercial viability of tuna longlines 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 Co Ltd, to operate *F.V. Lofa* commercially. The US Aid/Tonga Fisheries project in the early 1990's tested the viability of medium-sized vessels for long lining targeting fresh fish for the sashimi market. Domestic fleets targeting fresh tuna increased in the late 1990's and peaked in the early 2000's.

Tonga is a small island developing state in the WCPFC and has continued to build its Tuna Fishery capacities. The current focus for Tonga is to strengthen its capabilities for developing and domesticating its Tuna fishery. The Tonga tuna fishery consists solely of longline fishing vessels targeting tuna and tuna-like species. In addition, a small artisanal fleet includes small fishing vessels with outboard engines and game fishing vessels that use trolling fishing method. Most activity is concerted within Tonga EEZ except for foreign-flagged vessels, which can access high seas with a permit from flag states. Tonga has no flagged vessel license to fish on high seas for 2021.

Tonga has approximately 700,000km² of undeclared EEZ that extends from Latitude 14 degrees south to 26 degrees south, offering a moderate potential for exploitation. The total catches from

the Tonga EEZ have displayed a similar trend to effort. The total catches for Tonga's National fleets from the EEZ have increased from 284 mt in 2020 to 327 mt in 2021. The increase was mainly due to more catches during 2021, and the prompt response by the Government for export opportunities despite the ongoing COVID-19 pandemic crisis experienced that affected the number of trips. There is also a significant game-fishing sector in Tonga with minor interactions with the commercial longline fleets.

An artisanal data collection continued using the TAIL application for online data entry. This fishery only operates in the island group of 'Eua and Vava'u. Although it is still in its early stage, we will continue to extend artisanal tuna data collection to include the rest of the outer islands and the main island Tongatapu.

The Tonga National Programme (TOOB) was audited in March 2011, reviewed in 2015 and accredited as a WCPFC Secretariat ROP. There are four certified debriefers and 14 active Observers. In 2021, there was 76% observer coverage on board foreign vessels and 19.61% observer coverage onboard domestic vessels. The port sampling and logsheets coverage were 100%. At the same time, Tonga continues to implement and monitor its obligation toward the Commission's Conservation and Management Measures and the Resolutions and reports back to the Commission annually (**Appendix 1 – CMM Reporting**).

Tonga Ministry of Fisheries continues to work closely with the Oceanic Fisheries Program (OFF) of SPC on tuna stock status in the Tonga EEZ relative to the whole stock within the Western and Central Pacific Ocean (WCPO).

The tuna fishery operations in 2021 were undoubtedly affected by the ongoing COVID-19 pandemic crisis. In addition, the continued restrictions and border closures hindered the fishing efforts in terms of the vessel number and number of trips made by the active vessels, resulting in a decline in the overall total catches for 2021.

Even though the many challenges faced, Tonga continues to develop and build sustainable fisheries through better management decisions that will allow the people of Tonga to continue benefiting 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 2017 to 2021 are summarized in Table 1, with the historical estimates provided in Figure 1. The total effort in the WCPF-CA was approximately 6645 hundred hooks (Table 1), a drop of 17 % decrease from 7774 hundred hooks in 2020, and it's all attributed to the Tonga EEZ. The annual catch estimates of primary species (Table 1) in 2021 were 290 mt, showing an increase of 21% from the previous year.

The increase in catch estimates shows an immense change in YFT CPUE compared to previous years.

In 2021, the catches for primary species were dominated by yellowfin (70%) for main tuna species, followed by bigeye and albacore with 5% and 4%, respectively. Blue marlin occupied 14 % of the total catch of primary species for billfish species, followed by swordfish and striped marlin with 3% each of the history of this fishery in Tongan waters. For shark species, catch and retained was dominated by Mako sharks with 1%. Other shark species caught and recorded by observers were blue sharks, silky and oceanic whitetip with all 0%, respectively, and were all discarded.

The annual CPUE (kg/100hks) estimated for the main tuna species caught by the Tongan Longliners during the reporting period (2017 to 2021) shows in Figure 4 below. The trends are stable for bigeye and albacore, with a slight decline in the CPUE of yellowfin from 2017 to 2019. The fall was due to environmental factors such as El-Nino and La Nina during the reporting period, impacting catch rate and decreasing fishing efforts regarding the number of hooks in the water. However, in 2021 a massive increase in the CPUE of Yellowfin was observed.

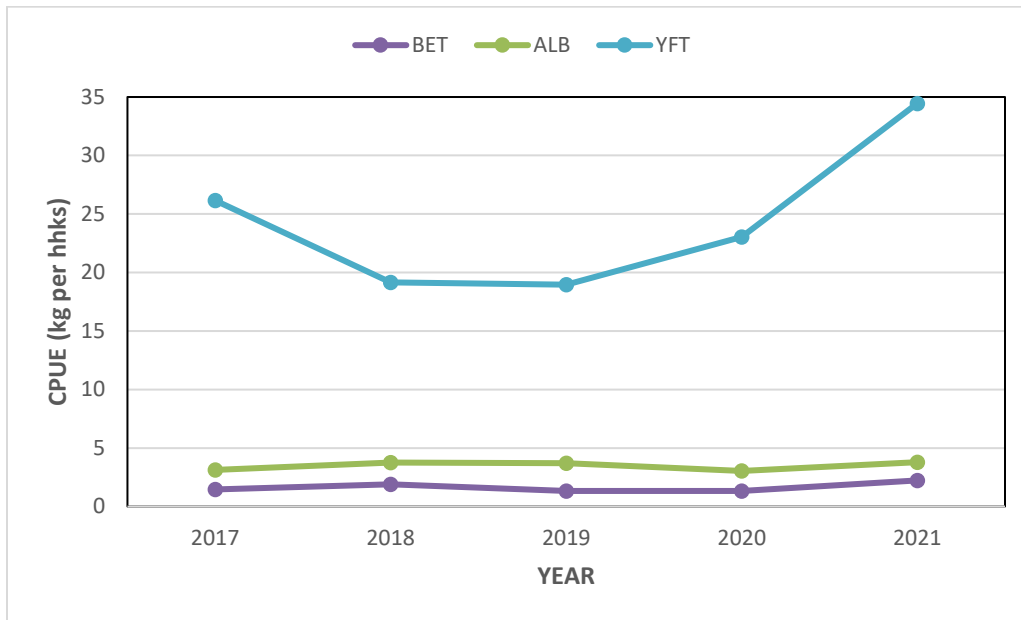


Figure 4. CPUE (kg per 100 hooks) of main tuna species for Tonga longliners were active in the WCPF Convention Area for the years 2017 to 2021

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

The estimated total catch of non-target associated and dependent species for the national longline fleets provided in Table 5 shows the species composition of the catch by weight in 2021, dominated by Dolphin fish (*Mahimahi*), totalling 19 mt, followed by *Sailfish* and *Wahoo* with 7mt and 5mt, respectively. The total shark catches for the National fleets within WCPF-CA were dominated by *Mako* sharks with 2mt retained (Table 3). There was **no retention** record for other key shark species, but 69% of the blue shark, 14% of Silky shark and 17% of Oceanic Whitetip shark were all discarded (Table 4).

By-catches were obtained from log sheets, observer records, and port sampling data. Observer records are essential for estimating yields of the less valuable species that are less likely to be retained or recorded. For example, observers have reported high retention rates of target tunas, including those discarded due to different conditions (Table 1). In addition, *Wahoo*, *Mahimahi*, moonfish, and billfishes also had high retention rates as they also have valuable components for the fishery, especially the local market.

Based on available data, no interaction of Tonga flagged longliners with Species of Special Conservation Interest (e.g., Marine turtle, marine mammal and sea birds) was recorded by observers (Appendix 1). Tonga National longline fleets used circle hooks and fish baits with less squid bait in longline fishing operations to reduce sea turtle mortality.

3.2 Fishing Patterns – National Fleets in the WCPF Convention Area

Figures 3a & 3b illustrate the annual catch and effort distribution pattern for the national longline fleets over the past five years in the WCPF Convention Area. In 2021, more than 70% of the catch and effort of the National longline fleet were widely distributed in the central and southern parts of the Tonga EEZ.

The Commission's reporting requirements stipulated under the conservation and management measures are provided in appendix 1. According to **CMM 2006-04**, none of the four flagged vessels targeted striped marlin, and all caught were by-catch. A total of 10.653 mt of stripe marlin was caught as bycatch in the south of 15°S of the Convention area. For the **CMM 2009-03**, four vessels caught 7.253 mt of swordfish as bycatch in the Convention Area South of 20°S. No vessels are operated under a charter, lease, or other similar mechanisms as a domestic fishery. Nine foreign-flagged vessels caught 5.515mt mt of swordfish as bycatch in the area south of 20°S. More of the CMM reports and details are attached to this report as **Appendix 1**.

3.3 Fleet Structure

In 2021, the Tonga National fleets consisted of four (4) domestically based longline vessels that operate within the WCPF-CA. These are Tonga flagged vessels authorized to fish within the Tonga EEZ only.

4.0 COASTAL STATE REPORTING

In 2021, ten (10) foreign-flagged longline vessels were licensed to fish in Tonga EEZ compared to eleven (11) vessels in 2021 (Table 6 and 7). According to our Tuna Development and Management Plan 2018 – 2022, the number of foreign longline fishing vessels licensed to fish at any given time does not exceed ten(10).

Table 6. A 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 (RIMF2 License)				
Size Category (GRT)	2017	2018	2019	2020	2021
0 - 100MT	8	3	7	7	6
101 - 200MT	0	2	3	4	4
201+	0	0	0	0	0
Total	8	5	10	11	10

Table 7. Number of foreign longline vessels with valid licenses to fish in the Tonga EEZ by flag and year.

Year	Flag			Total
	CHINA	CH-TAIPEI	FIJI	
2016	0	8	0	8
2017	0	7	0	7
2018	0	3	2	5
2019	0	7	3	10
2020	0	7	5	12
2021	0	5	5	10

The annual catch for foreign-flagged vessels in 2021 is given in Table 8 and is similar in species composition of the catches to Tonga National fleets. Therefore, those catches by foreign vessels contributed to the Tonga National Catch of tuna and tuna-like species within Tonga jurisdiction waters. The total catch for 2021 was 1,759 mt, a decrease of 11 % compared to 1,958 mt in 2020.

Table 8. Annual foreign Longline catch and effort estimates by foreign-flagged vessels licensed to fish with Tonga EEZ (national waters) in 2021.

Flag	YEAR	GEAR	SPECIES_WT (mt)																		
			ALB	YFT	BET	SKJ	BUM	BLM	MLS	SWO	SFA	DOL	FAL	BSH	OCS	THR	MAK	HAM	POR	OTH	TOT
FJ	2021	LL	548	283	59	24	14	9	4	3	3	2	0	0	0	0	0	0	0	24.2	973.2
TW	2021	LL	261	281	49	14	39	3	18	8	4	5	0	29	0	0	5.2	0.2	0.0	69.4	785.7
TOTAL			809	564	108	38	53	12	22	11	7	7	0	29	0	0	5.2	0.2	0.0	93.6	1758.9

4.0 SOCIO-ECONOMIC FACTOR

Tuna export from tonga continued in 2021, although it faced some challenges due to the restrictions of the COVID-19 crisis. The tuna fleets contribute a large portion of fish exported from Tonga compared to other fisheries such as snapper fishery and aquarium trades. Despite the continuous worldwide pandemic of COVID-19, the tuna industry export indicates a very encouraging result as 2021 tuna export increases compared to 2020. The total yield exported was 1,473 mt, a 6 % increase compared to 1,391 mt exported in 2020. The total estimated FOB revenue collected from fish exported during 2020 was TOP 8,101,783.00. A 8% increase from TOP 7,436,910.00 collected in 2020. On the other hand, the local market continues the supply of fish to local people for domestic consumption. Licensing of fishing vessels (domestic & foreign) and resources rented from landing and export catches continue to provide an additional revenue stream to the domestic fisheries sector. All the catches unloaded by foreign vessels were unloaded in port Nuku'alofa, then repacked into a shipping container and exported to overseas markets with a portion of their catch sold in the local market and retail store.

5.0 DISPOSAL OF CATCH

5.1 Marketing

Tonga regulates that all longline vessels licensed to fish in Tonga water shall be 100% discharged in a designated port before being disposed to respective market destination, whether overseas or domestic market. As a result, the foreign fishing vessels unloaded all catch in Nuku'alofa, repacked the export fish into a cargo container, and sent it to overseas markets, whereas the local fish was sold locally. In 2017, the Ministry of Fisheries started a new fish selling scheme agreeing with the foreign vessel's agency as part of fish consumption promotion to fight against NCDs. This unique fish selling scheme lowers the fish price, encouraging the locals to buy and eat healthy. So, they will provide at least 2 mt of fish on every foreign vessel trip to the Ministry to sell it at a lower price. This program is successful and allows local people to consume more fish.

Tonga's main export markets for its fresh, chilled tuna (Yellowfin and Bigeye) were Japan, and the US (Los Angeles), with fewer New Zealand markets. The frozen tuna, tuna-like species with other bycatch, were exported to American Samoa, Thailand, Taiwan, Vietnam and Fiji. There were no export of Bigeye and Yellowfin tuna by the foreign fishing vessels to the Japanese market in 2021. In addition, fresh, chilled albacore and some bycatch (frozen and new) are sold locally.

Figure 5 describes the leading market destination of tuna longline catches exported from Tonga in 2021. Frozen fish dominates the total export volume of the longline vessel catches landed. The most significant portion of the total export volume was American Samoa (Pagopago) with 38%, Taiwan and Vietnam with 23% each, Fiji with 8%, and Thailand with 3%. Fresh, chilled tuna exports contribute a smaller portion of the export with 2% exported to Japan and then the U.S and NZ with 1% each.

Albacore tuna dominated the exported individual species with 47% of the total volume, followed by yellowfin with 38%, marlin and shark with 2% each, skipjack with 1%, Mahimahi with 0%, and Others with 3%, respectively. In addition, frozen by-catch species as "Others" (OTH) are mainly exported to Fiji, Taiwan and Thailand, including bluefin, escolar, oilfish, and wahoo.

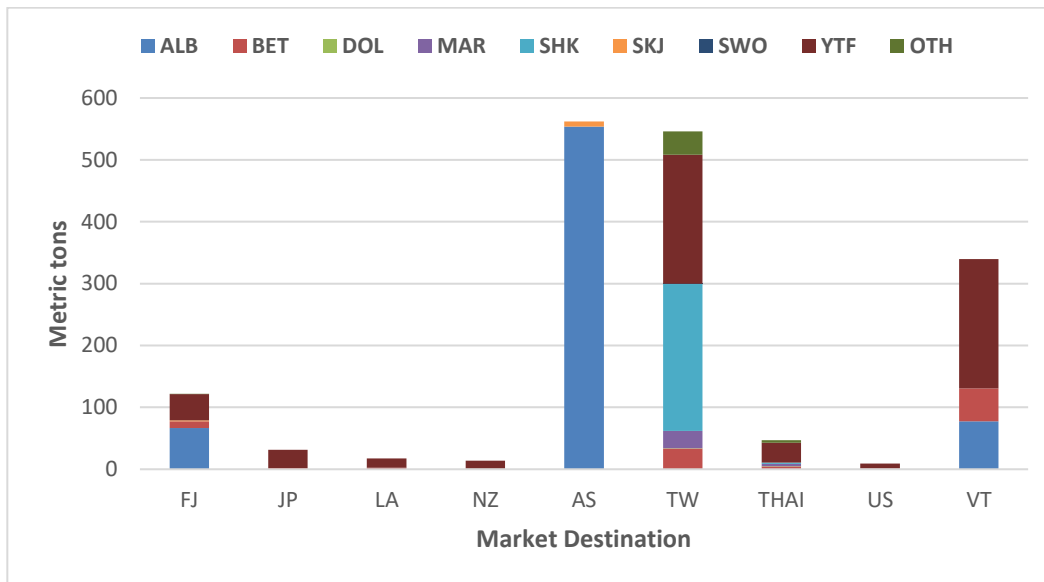


Figure 5. Longline catch (MT) export and Destinations for Tonga, 2021

6.0 ONSHORE DEVELOPMENT AND FUTURE PROSPECTS OF FISHERY

Tonga's commercial longline fishery is limited by a cap on the number of longline vessels authorized to fish within the EEZ to only 20 licenses (*Revised Tonga Tuna Management & Development Plan 2018 - 2022*). Unfortunately, high operating costs and inadequate infrastructure have restricted a locally-based fleet development.

Pacific Sunrise Fishing Company, the only domestic tuna fishing company, operated in 2021.

The ongoing COVID-19 pandemic, without a doubt, affected the fishing operation in 2021. Even though the hardship faced, Tonga's domestic fleets still concentrated on exporting fresh, chilled tuna to sashimi markets, especially to Japan, the US, and New Zealand. Also, entailing employs local people in crewing their vessels and its processing and retailing plant. As a result, the overall catches of the domestic fleets, despite the pandemic impacts, increased by 13% compared to 2020 and noted a decrease in domestic vessels operated from 5 fleets in 2020 to only 4 in 2021.

The National Fisheries Council (NFC) collaborates with the Ministry of Fisheries and respective stakeholders in developing different fisheries, including Tuna fisheries. Within this partnership, the NFC planned to deal with many challenges, especially the infrastructure such as setting fisheries wharf, packing facilities that provide low fees for fishers, and equipment such as vessels, fishing gears, etc. As a result, more domestic vessels to operate in the future are expected and lessen foreign fishing vessels for future development.

The Regional Tuna Data and Stock Assessment workshop are a data workshop annually conducted by SPC for its member countries. The workshops 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 Stock Assessment Workshop is an essential program in capacity

building for fisheries officers and managers in the region. In this workshop, the course instructors introduced participants to various stock assessment models that assist officers in providing scientific advice to managers and policy-makers based on the best models. Not only that, but participants are 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. The Seapodym model was also introduced, and it is very supportive, especially regarding the stock status regarding fishing activities and climate change. Due to the ongoing COVID-19 crisis, both workshops were conducted virtually.

TUFMAN 2 and its recent developments, such as the e-Reporting tool through ONBOARD, ONSHORE, and TAILS applications, allow online submission of datasheets electronically from sea captains, port samplers, and artisanal data collectors. Electronic Reporting (ER) is 100% implemented in all national fleets, whereas only 50% is implemented with our Foreign Fishing Vessels. We are targeting 100% ER coverage for our Foreign fishing vessels in the coming years. Artisanal data collection through TAILS is still ongoing. Tonga wishes to acknowledge the SPC's Oceanic Fisheries Programme for developing such excellent ER applications ONBOARD, ONSHORE, TAILS and OLLO to assist us with our data collection. We have witnessed the use of these applications in the timely data submissions of TAILS data from remote islands and ONBOARD data submissions from Vessel masters during COVID-19 restrictions.

7.0 RESEARCH ACTIVITIES AND STATUS OF TUNA FISHERY DATA COLLECTION

7.1 Logsheets and Unloading data collection

Tonga continued to use the expanded SPC/FFA Regional Longline Logsheets (2016) format for data collection in 2021. Tonga still maintains achieving the 100% coverage of logsheets, unloading, and port sampling data collected from national and foreign vessel licenses to fish in our EEZ. In addition, the ER applications developed by SPC OFP have improved the efficiency of Tonga's offshore data collection in time, data quality and sea captains' capacity building.

7.2 Observer Programme

The Tonga National Observer Programme (TOOP) continues to deploy observers onboard domestic and foreign longline vessels operated within Tonga EEZ and place observers onboard US purse seiner vessels under the Multilateral Treaty arrangement. There are currently four certified debriefers and 14 active Observers. The coverage onboard Foreign fishing vessels for 2021 was 76% and 19.61% onboard domestic vessels. TOOB is still aimed at collecting information on fish catch, fish handling techniques, fishing technology, by-catch and discards, and all other activities that the vessel conducted during a fishing trip, also targeting a 100% coverage on board foreign fishing vessels. All these data will be analysed and beneficial 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, in its capacities, continued employing dedicated port samplers to conduct port sampling activities at every licensed Tuna vessel that comes into Nuku'alofa port for unloading. As a result, port sampling coverage was 100% coverage for 2021. ONSHORE applications developed by SPC OFP greatly assisted our port samplers with timely submission of the port sampling data from both National and Foreign fishing vessels. The Ministry must maintain this high percentage coverage of port sampling to meet its obligation to the Commission.

The National Observer and Port sampling program warmly extend our sincere gratitude and appreciation to the overseas donor (JTF fund) and regional organization (FFA & SPC) for their excellent financial and technical support in developing our tuna data collection and analysis as well as training of new observers for the Observer program. Their kind assistance in financial and technical support for almost a decade is greatly appreciated. Furthermore, the implementation of both program and the completion of this scientific report would not have been possible if we did not have your support in all approaches.

Malo' aupito



ADDENDUM TO ANNUAL REPORT PART 1

15 February 2022¹

SECTION A: SPECIFIC INFORMATION TO BE PROVIDED IN ANNUAL REPORT PART 1 AS REQUIRED BY CMMS AND OTHER DECISIONS OF THE COMMISSION.

<p>CMM 2009-03 [Swordfish], Para 8</p>	<p>a) 2021 – 4 domestic flagged LL vessels fished and caught a total of 7.253mt of swordfish within South of 20°S of the Convention Area; All swordfish were caught as bycatch, there are no Tonga flagged vessels targeting swordfish.</p> <p>b) NO vessels were operating under a charter, lease, or other similar mechanisms as part of the domestic fishery</p> <p>c) 2021– 9 foreign-flagged LL vessels fished and caught 5.515 mt of SP_SWO as bycatch within South of 20°S of the Convention Area, inside the Tonga EEZ.</p> <p><i>*Note: WCPFC11 confirmed a common understanding that “total catch” in this reporting requirement refers to both targeted and bycatch catches of swordfish.</i></p>																																										
<p>Observer coverage (WCPFC 11 decision – para 484(b))</p>	<p>Observer Coverage:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">CCM Fleet</th> <th rowspan="2">Fishery</th> <th colspan="3">No. of Hooks</th> <th colspan="3">Days Fished</th> <th colspan="3">Days at Sea</th> <th colspan="3">No of Trips</th> <th rowspan="2">See NOTES</th> </tr> <tr> <th>Total estimated</th> <th>Observer</th> <th>%</th> <th>Total estimated</th> <th>Observer</th> <th>%</th> <th>Total estimated</th> <th>Observer</th> <th>%</th> <th>Total estimated</th> <th>Observer</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Tonga</td> <td>Local Tuna Fishery</td> <td>664503</td> <td>113836</td> <td>17%</td> <td>459</td> <td>85</td> <td>19%</td> <td>480</td> <td>129</td> <td>27%</td> <td>102</td> <td>20</td> <td>20%</td> <td>All flagged vessels’ observer trips are Non-ROP trips</td> </tr> </tbody> </table>	CCM Fleet	Fishery	No. of Hooks			Days Fished			Days at Sea			No of Trips			See NOTES	Total estimated	Observer	%	Total estimated	Observer	%	Total estimated	Observer	%	Total estimated	Observer	%	Tonga	Local Tuna Fishery	664503	113836	17%	459	85	19%	480	129	27%	102	20	20%	All flagged vessels’ observer trips are Non-ROP trips
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<p>CMM 2009-06 [Transshipment], Para 11 (ANNEX II)</p>	<p>NOT APPLICABLE</p> <p>There were NO transshipment activities undertaken by TO flag vessel or occurring in Tonga ports or Tonga EEZ.</p>																																										
<p>CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5</p>	<p>NOT APPLICABLE</p> <ul style="list-style-type: none"> • Tonga does not have purse seine fleets 																																										

¹ Reporting requirements requested by CMMS and decisions of the Commission, as of WCPFC17 (Dec 2020). First issued on 15 February 2021. Changes made from Addendum for 2020, include separating the annual reporting requirements that specify needing to be included in Annual Report Part 1 (Section A) from those that may be included in Annual Report Part 1 if they are not otherwise provided to WCPFC (Section B). The entry into force of CMM 2019-04 *Conservation and Management Measure for Sharks* for most CCMs in late 2020 and the specified reporting in Section VII, has removed a few annual reporting requirements from this Addendum.

Source: Dorado – TUBs Reports – Regional Reporting – Report # 12 – “CMM 12-07 Seabird interactions by NATIONAL FLEETS”

- There is NO interaction with seabirds by Tonga longline vessels

Year	Fishing Effort				Observed seabird capture	
	No. of vessels	No. of Hooks	Observed Hooks	% hooks observed	Number	Rate
2016	4	1234800	37452	3%	0	0
2017	6	1559600	53282	3%	0	0
2018	5	1225300	29320	2%	0	0
2019	6	1200800	47286	4%	0	0
2020	5	777400	87639	11%	0	0
2021	4	664503	113836	17%	0	0

**CMM 2018-03
[Seabirds] Para
13**

Combination of Mitigation Measures	Proportion of observed effort using mitigation measures			
	South of 30°S	25°S-30°S	25°S to 23°N	North of 23°N
No mitigation measures	0	0	2	0
BC DSLS MOD	0	0	1	0
BDB MOD	0	0	2	0
MOD	0	0	24	0
NS	0	0	4	0
NS BC	0	0	1	0
NS MOD	0	0	45	0
NS WB MOD	0	0	4	0
WB	0	0	1	0
WB MOD	0	0	1	0

SECTION B: ADDITIONAL ANNUAL REPORTING REQUIREMENTS THAT COULD BE INCLUDED IN ANNUAL REPORT PART 1, IF NOT OTHERWISE REPORTED ANNUALLY TO WCPFC

<p>CMM 2006-04 [South West striped Marlin], Para 4</p>	<p>2021 – 4 LL vessels caught a total of 10.653mt of SW_MLS as bycatch south of 15°S of the Convention area. No flagged vessel target MLS south of 15°S</p>
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CMM 2015-02 [South Pacific Albacore] Para 4	<p>Data has been submitted to SPC</p> <p>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.</p>
CMM 2019-03 [North Pacific Albacore], Para 3	<p>Not Applicable</p> <ul style="list-style-type: none"> • Tonga's domestic LL vessel does not fish above the equator. <p><i>* Note: WCPFC10 clarified that this reporting responsibility lies with the flag State</i></p>
