



**SCIENTIFIC COMMITTEE
NINETEENTH REGULAR SESSION**

Koror, Palau
16 - 24 August 2023

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

WCPFC-SC19-AR/CCM-25

TONGA



Ministry of Fisheries

GOVERNMENT OF THE KINGDOM OF TONGA

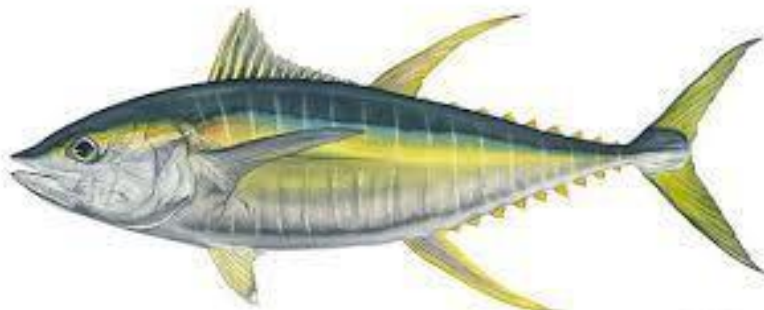
The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Scientific Committee

**Nineteenth Regular
Session**

16 – 24 August 2023

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 2023	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 in Tonga for 2022 was 2,012 metric tons (mt), which represents a 3.7% decrease from the 2021 catch of 2,087 mt.

The Tonga National fleet consists of 6 longline vessels that operate exclusively in Tongan waters. In 2022, the estimated catch by the National fleet for primary species was 368 mt, showing an increase of 21.2% compared to the 2021 catch of 290 mt. The total estimated catch of all species by the National fleet in 2022 was 481 mt, representing a 32% increase from the 2021 catch of 327.3 mt. The Foreign fleet in Tonga is composed of 9 longline vessels. In 2022, the estimated catch by the foreign fleet was 1,531 mt, showing a 15% decrease compared to the 2021 catch of 1,760 mt.

The overall catch in Tonga's tuna fishery decreased slightly in 2022 compared to the previous year. However, there was a notable change within the fishery. The catch by the National fleets increased while the catch by the foreign fleet decreased. This decrease in the foreign fleet's catch can be attributed to a reduction in the number of days fished and lower catch rates. The increase in the catch by the National fleets was due to an increase in the number of vessels, the number of trips so and the number of days fished.

Yellowfin tuna species dominate the overall catch by the national fleets with 213 mt. On the other hand, Mahimahi dominates the catches for non-target species with 91.3 mt. These results indicate that the National fleets targeted Yellowfin and Bigeye tuna for the fresh fish market.

The foreign fleets catch is dominated by Albacore tuna with 845 mt. According to the Term and Conditions for tuna fishing licenses, targeting any shark species is prohibited in Tonga. The observer data reported no interactions with Species of Special Interest (e.g. turtles, marine mammals and seabirds) in Tonga's longline fishery.

Despite the challenges posed by the COVID-19 pandemic, the Ministry of Fisheries made every effort to sustain this fishery, resulting in positive outcomes, as evidenced by the increase in total catch harvested and exported by the National fleet in 2022. The impact of global disruptions affected the operations of foreign fishing fleets resulting in a decrease in catch harvested and exported.

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 days² and no days recorded for any Purse Seine fishing activity within Tonga's EEZ in 2022.

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, 2018 – 2022.

WCPFC Key Species	2018		2019		2020		2021		2022	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	23	7%	30	9%	13	6%	10	4%	51	14%
BIGEYE TUNA	34	10%	16	5%	10	4%	14	5%	24	7%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0	0%	0.2	0%
SKIPJACK TUNA	4	1%	2	1%	3	1%	1	0%	2	1%
YELLOWFIN TUNA	201	61%	187	56%	155	67%	203	70%	213	58%
BLACK MARLIN	5	2%	4	1%	2	1%	0	0%	0.1	0%
BLUE MARLIN	17	5%	47	14%	21	9%	41	14%	45	12%
STRIPED MARLIN	11	3%	14	4%	4	2%	10	3%	19	5%
SWORDFISH	44	13%	35	10%	16	7%	9	3%	11	3%
BLUE SHARK	1	0%	2	1%	0	0%	0	0%	0	0%
SILKY SHARK	0	0%	10	3%	0	0%	0	0%	0	0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
MAKO SHARKS	35	11%	12	4%	6	3%	2	1%	3	1%
OCEANIC WHITETIP SHARK	3	1%	6	2%	0	0%	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	332		336		230		290		368	
Total effort (hhks)	12253		12008		7774		6645		8646	

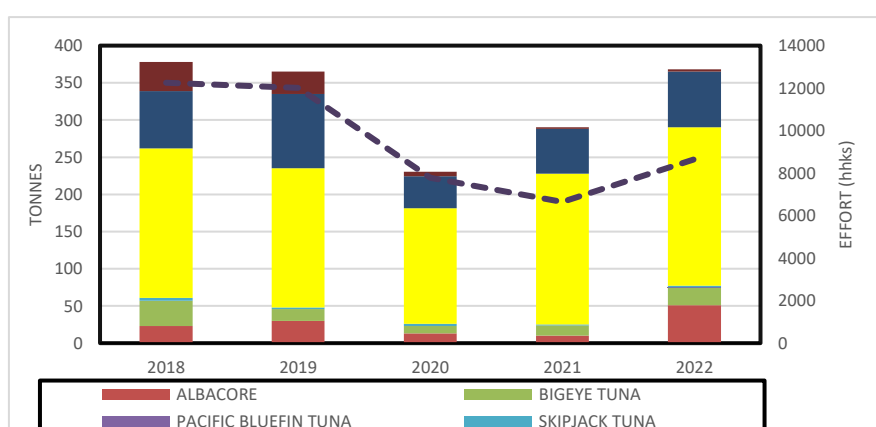


Figure 1: Historical annual Catch (mt) and Effort (no. of hooks), by primary species, for the Tongan longliners (National Fleets) were active in the WCPFC Convention Area for the years 2018 to 2022

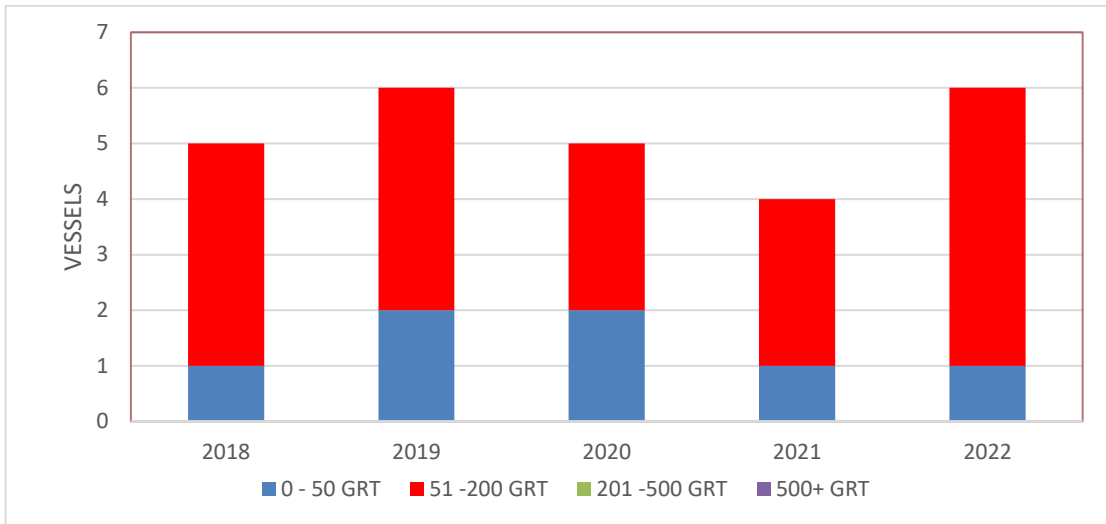


Figure 2: Historical annual longline vessels number for Tonga for the WCPFC Convention Area, 2018– 2022.

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

Gear	LONGLINE
Fleet	National Fleets

Vessel category	2018		2019		2020		2021		2022	
	No.	%	No.	%	No.	%	No.	%	No.	%
0 - 50 GRT	1	20%	2	33%	2	40%	1	25%	1	17%
51 -200 GRT	4	80%	4	67%	3	60%	3	75%	5	83%
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	5	100%	6	100%	5	100%	4	100%	6	100%

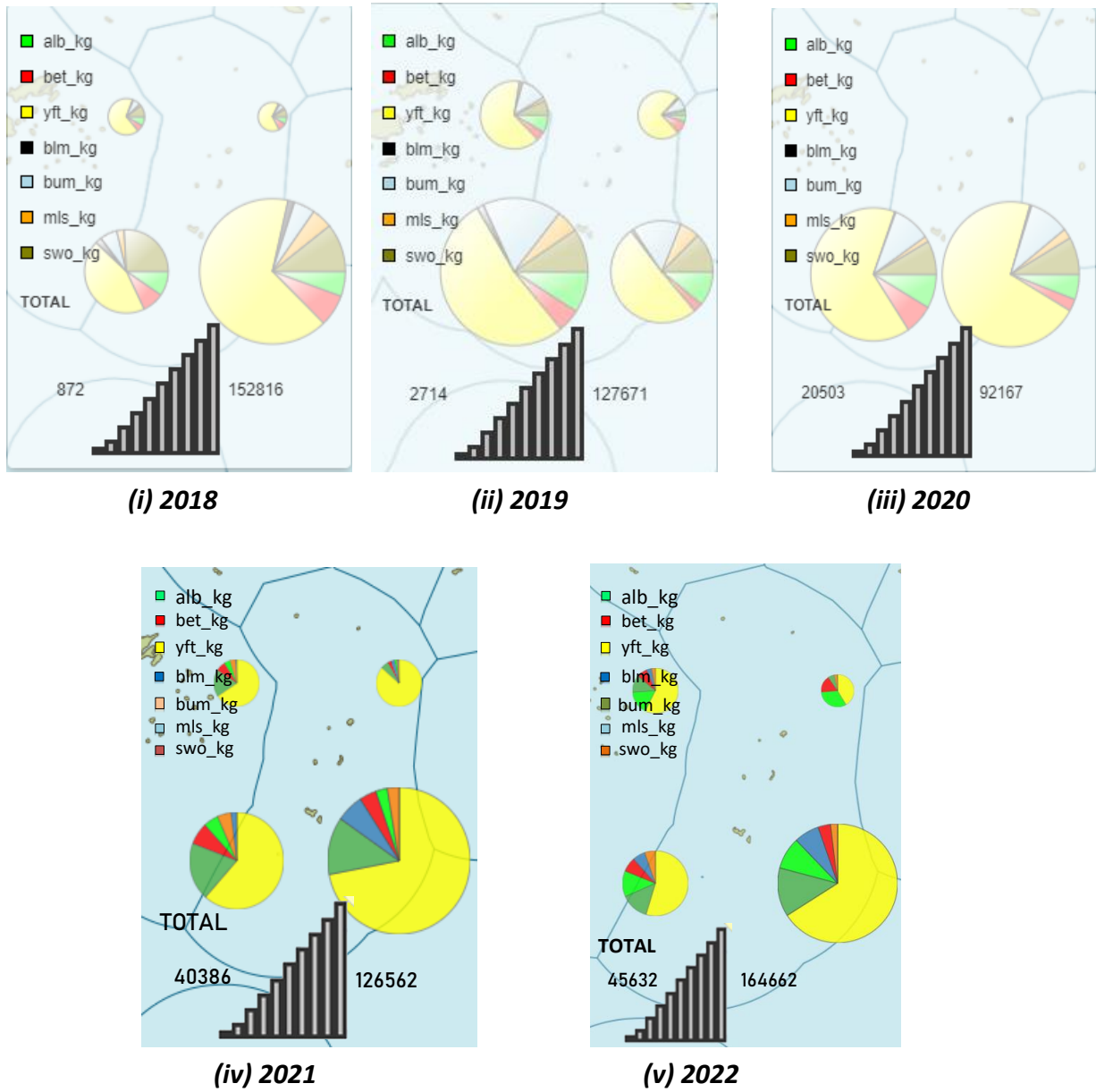


Figure 3a (i-v). Annual distribution of Longline National Fleet catches by target tuna species (in kilograms) in the WCPF Convention Area from 2018 to 2022.

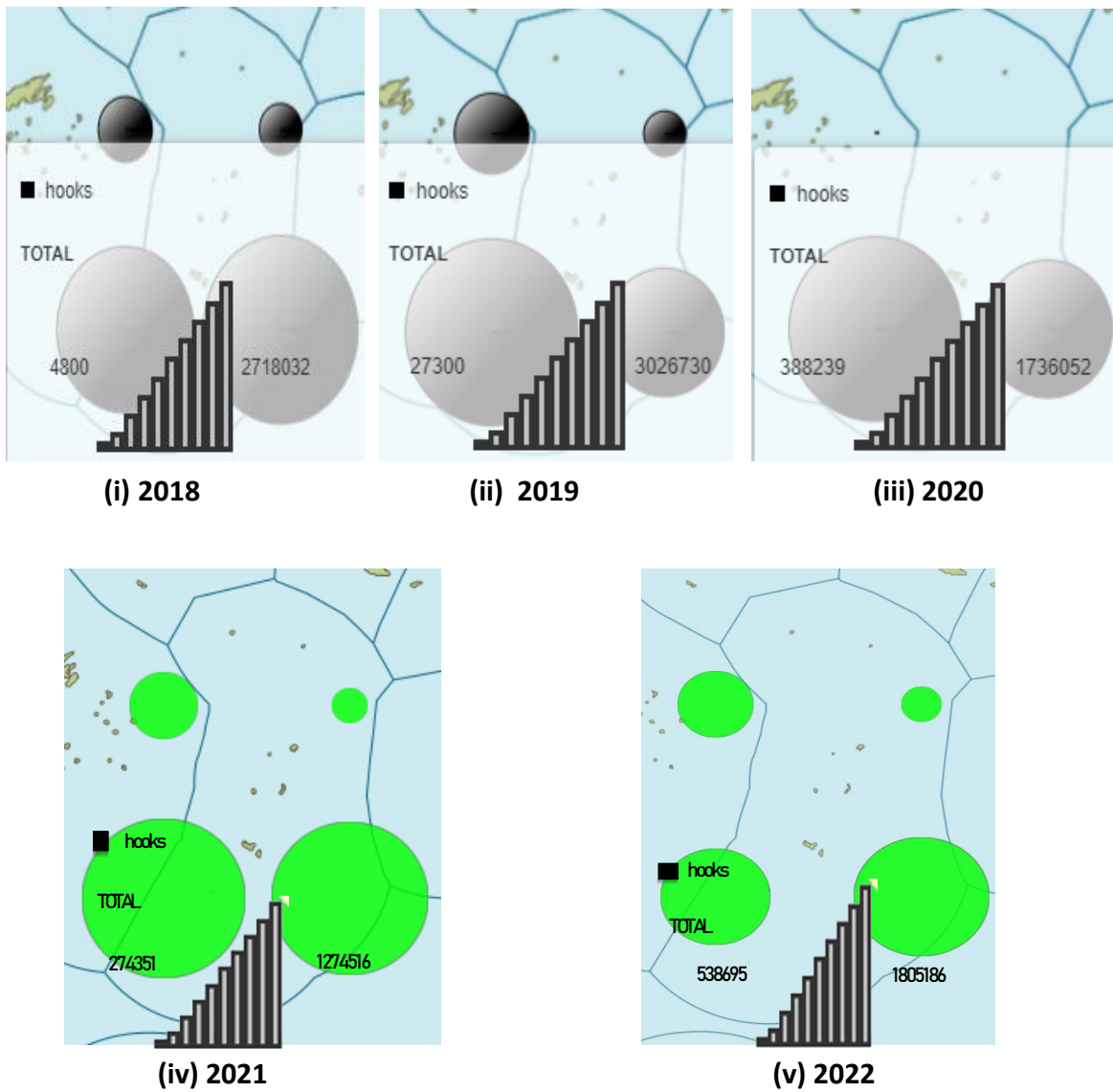


Figure 3b (i-v): Annual distribution of Longline National Fleet effort (in hooks) in the WCPF Convention Area from 2018 to 2022.

Table 3: Annual RETAINED catch by key species in the WCPFC Convention Area for 2018 – 2022.

WCPFC Key Species	2018		2019		2020		2021		2022	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	23	7%	30	9%	13	6%	10	4%	51	14%
BIGEYE TUNA	34	10%	16	5%	10	4%	14	5%	24	7%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0	0%	0.2	0%
SKIPJACK TUNA	4	1%	2	1%	3	1%	1	0%	2	1%
YELLOWFIN TUNA	201	61%	187	56%	155	67%	203	70%	213	58%
BLACK MARLIN	5	2%	4	1%	2	1%	0	0%	0.1	0%
BLUE MARLIN	17	5%	47	14%	21	9%	41	14%	45	12%
STRIPED MARLIN	11	3%	14	4%	4	2%	10	3%	19	5%
SWORDFISH	44	13%	35	10%	16	7%	9	3%	11	3%
BLUE SHARK	1	0%	2	1%	0	0%	0	0%	0	0%
SILKY SHARK	0	0%	10	3%	0	0%	0	0%	0	0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0	0%
MAKO SHARKS	35	11%	12	4%	6	3%	2	1%	3	1%
OCEANIC WHITETIP SHARK	3	1%	6	2%	0	0%	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	332		336		230		290		368	
Total effort (hhks)	12253		12008		7774		6645		8646	

Table 4: Annual DISCARDED catch by key species in the WCPFC Convention Area for 2018 – 2022.

WCPFC Key Species	2018		2019		2020		2021		2022	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	0	0	2.9	0	0	0%	0	0%	0	0%
BIGEYE TUNA	0	0.4	0	0	0	0%	0	0%	0	0%
PACIFIC BLUEFIN TUNA	0	0	0.1	0	0	0%	0	0%	0	0%
SKIPJACK TUNA	0	0	0	0	0	0%	0	0%	0	0%
YELLOWFIN TUNA	0	0.5	0	0.1	0.2	64%	0	0%	0	0%
BLACK MARLIN	0	0	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	0	0	0.2	0.1	36%	0	0%	0	0%
BLUE SHARK	0	0	0.1	0.1	0	0%	0.284	69%	0	0%
SILKY SHARK	0	0	0	0.3	0	0%	0.056	14%	0	0%
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	0.1	0	0.2	0	0%	0.07	17%	0	0%
PORBEABLE / SALMON SHARK	0	0	0.1	0	0	0%	0	0%	0	0%
WHALE SHARK	0	0	0	0	0	0%	0	0%	0	0%
THRESHER SHARKS	0	0	1.3	0	0	0%	0	0%	0	0%
Total	0		4.5		0.3		0.41		0	

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 2018 to 2022.

Non-Target Species	2018	2019	2020	2021	2022
Wahoo	8	9	5	5	5
Sailfish (Indo-Pacific)	6	20	6	7	7
Dolphin fish	107	141	38	19	91
Opah/Moonfish	0	0	0	0	0.2
Others	4	15	5	3	8
Total	125	185	54	34	112

2.0 BACKGROUND

Tongan commercial fisheries for high migratory species, specifically tuna, began in the early 1970s with the acquisition of a second-hand longliner and a skipjack vessel from Japan. These vessels were used to target tuna species in the waters surrounding Tonga.

In the early 1980s, the Tongan government investigated the commercial viability of tuna longlining. As part of this study, a new longliner called F.V. Lofa was donated by the Government of Japan. The purpose of this donation was to assess the potential of longlining as a fishing method in Tonga.

In 1991, the Tongan government established a semi-government company called Sea Star Fishing Co Ltd to operate the F.V. Lofa commercially. This marked a significant step in the development of Tonga's commercial fishing industry, as it allowed for more efficient and organized operations.

During the early 1990s, the US Aid/Tonga Fisheries project conducted tests to evaluate the viability of medium-sized vessels for longlining, with a focus on targeting fresh fish for the sashimi market. This initiative aimed to explore new opportunities and markets for Tonga's fishing industry.

Following these developments, domestic fleets in Tonga that targeted fresh tuna experienced a notable increase in the late 1990s. This growth trend continued, reaching its peak in the early 2000s. The expansion of the domestic fleet and the focus on capturing fresh tuna reflected the growing demand for high-quality seafood, particularly in markets that valued sashimi-grade fish.

Tonga, as a small island developing state, is an active member of the Western and Central Pacific Fisheries Commission (WCPFC) and has been working on enhancing its Tuna fishery capacities. The country has emphasized strengthening its capabilities in developing and domesticating its Tuna fishery.

Currently, the Tuna fishery in Tonga primarily involves longline fishing vessels that specifically target tuna and tuna-like species. Longline vessels in Tonga are equipped to operate within Tonga's Exclusive Economic Zone (EEZ), which is the area extending up to 200 nautical miles from the country's coastline.

Tonga also has a small artisanal fleet that includes small fishing vessels with outboard engines, as well as game fishing vessels that employ trolling fishing methods. These vessels are typically engaged in

recreational or small-scale commercial fishing activities. While most fishing activity occurs within Tonga's EEZ, foreign-flagged vessels can access the high seas adjacent to Tonga's waters, provided they obtain a permit from their respective flag states. It's important to note that for the year 2022, Tonga did not possess a flagged vessel license to fish on the high seas.

Tonga possesses an undeclared Exclusive Economic Zone (EEZ) of approximately 700,000 square kilometres, extending from Latitude 14 degrees south to 26 degrees south. This extensive area offers a moderate potential for the exploitation of fisheries resources. The total catches from Tonga's EEZ have shown a similar trend to fishing efforts. In 2021, the total catches by Tonga's national fleets from the EEZ amounted to 327 metric tons. However, in 2022, the catches increased significantly to 481 metric tons. This increase can be attributed to several factors, including the licensing of more fishing vessels in 2022, improved export opportunities following the relief from the COVID-19 pandemic, and an increase in the number of fishing trips.

It is important to note that Tonga also has a significant game-fishing sector, which operates separately from commercial longline fleets. The interactions between the game-fishing sector and the commercial longline fleets are minor.

Tonga continued to collect Tuna artisanal data using the TAILS application for online data entry. This data collection initiative focuses on the islands of 'Eua and Vava'u. While it is in its early stage, there were plans to expand to include the rest of the outer islands as well as the main island of Tongatapu. Fortunately, in 2022, with the assistance of the Japanese Trust Fund, we managed to successfully trial and implement the TAILS data collection at the rest of the island groups which are Ha'apai and the two Niuas.

As of 2022, Observer Programme in Tonga is still operating at the national level. There were only two active certified debriefers and eight active Observers involved in the program at this time. In terms of observer coverage, there was a high coverage rate of 89.2% onboard foreign vessels, indicating that the majority of these vessels had observers present. Also similar to the observer coverage onboard the domestic vessel, the year 2022 was considered the highest with a 20.2% coverage.

Furthermore, Tonga was actively fulfilling its obligations towards the Commission's Conservation and Management Measures (CMM) and the Resolutions. The country was monitoring and implementing these measures, and it was reporting back to the Commission on an annual basis, as outlined in Appendix 1 – CMM Reporting.

Tonga Ministry of Fisheries continues to work closely with the Oceanic Fisheries Program (OFP) of SPC in assessing the tuna stock status in the Tonga EEZ relative to the whole stock within the Western and Central Pacific Ocean (WCPO) and this is crucial for effective fisheries management.

The tuna fishery operations slowly recovered in 2022 after facing numerous challenges in 2021 due to the global disruptions caused by COVID-19. The addition of two more licensed vessels, bringing the total to six vessels in 2022, has contributed to the increase in the overall catch for 2022.

Despite these challenges, Tonga remains steadfast in its commitment to the development and promotion of sustainable fisheries. The country recognizes the importance of making informed management decisions and implementing effective measures, to ensure that its fisheries can continue to provide benefits to the people of Tonga both in the present 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 total effort in the WCPF convention Area for 2022 was approximately 8,646 hundred hooks. This represents a 23% increase from the previous year, which had 6,645 hundred hooks. It's worth noting that this increase in effort is solely attributed to the Tonga Exclusive Economic Zone (EEZ).

Annual catch estimates for primary species in 2022 were 368 metric tons (mt). This shows a 21 % increase compared to the previous year's catch.

Yellowfin tuna dominated the catches for main tuna species in 2022, accounting for 58% of the total catch, followed by albacore and bigeye with 14% and 7%, respectively. Blue marlin represented 12% of the total catch of primary species for billfish species. Striped marlin accounted for 5% of the catches and swordfish made up 3% of the catches for billfish species. For shark species, catch and retained were dominated by Mako sharks with 1%. Other shark species caught and recorded by observers were blue sharks, silky and oceanic whitetips, all of which were discarded.

The annual CPUE (kg/100hks) estimated for the main tuna species caught by the Tongan Longliners during the reporting period (2018 to 2022) shows in Figure 4 below. The CPUE for the albacore remained stable until 2022, where it experiences a slight increase. This suggests that the catch per unit effort for albacore remained relatively consistent over the years, with a slight improvement in 2022. The CPUE for bigeye tuna also showed a stable trend throughout the reporting period. This indicates that the catch per unit effort for bigeye tuna remained relatively constant without significant fluctuations. The CPUE for yellowfin tuna exhibited a declining trend. This decline in CPUE can be attributed to environmental factors such as El Nino and La Nina which likely impacted the abundance and accessibility of yellowfin tuna, resulting in a lower catch per unit effort during the reporting period.

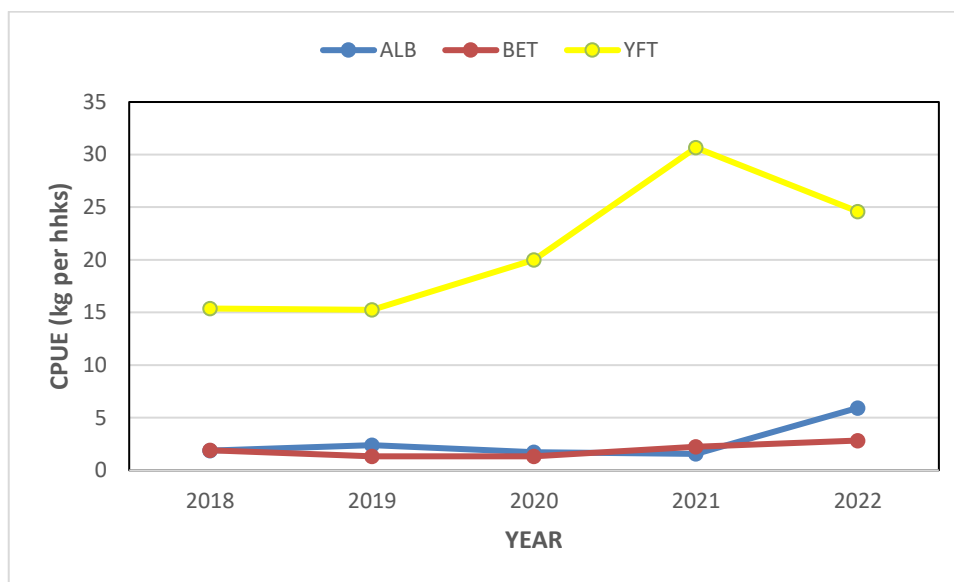


Figure 4. CPUE (kg per 100 hooks) of main tuna species for Tonga longliners were active in the WCPF Convention Area for the years 2018 to 2022

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 2022. Dolphin fish (*Mahimahi*) had the highest catch by weight, totalling 91 mt, Sailfish had a catch of 7 mt and Wahoo had a catch of 5 mt respectively. Mako sharks were the dominant shark species caught by the national fleets within WCPF-CA, with 3 mt retained (Table 3). The information in Table 4 indicates that there was no retention record for other key shark species.

By-catches were obtained from log sheets, observer records, and port sampling data. Observer records play a crucial role in estimating the yields of less valuable species that are less likely to be retained or recorded. These records provide valuable insights into the catch composition beyond what is reported or recorded. Observer reports have indicated high retention rates for target tunas, including those that are discarded due to various conditions. This suggests that the recorded catches for target tunas may not fully reflect the actual yields as some are discarded but still accounted for in the observer records.

Species such as Wahoo, Mahimahi, moonfish, and billfishes have high retention rates. This implies that these species have valuable components for the fishery, particularly for the local market. The high retention rates suggest that a significant portion of these species caught is retained and utilized rather than discarded.

Based on available data, no interaction of Tonga-flagged longliners with Species of Special Conservation Interest (e.g., Marine turtles, marine mammals 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 2022, 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.

3.3 Fleet Structure

In 2022, the Tonga National fleet consisted of six (6) 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 2022, nine (9) foreign-flagged longline vessels were licensed to fish in Tonga EEZ compared to eleven (11) vessels in 2021 (Tables 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)	2018	2019	2020	2021	2022
0 - 100MT	3	7	10	6	5
101 - 200MT	2	3	3	4	4
201+	0	0	0	0	0
Total	5	10	13	10	9

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	
2018	0	3	2	5
2019	0	7	3	10
2020	0	7	5	12
2021	0	5	5	10
2022	0	5	4	9

The annual catch for foreign-flagged vessels in 2022 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's jurisdiction waters. The total catch for 2022 was 1,531 mt, a decrease of 14.9 % compared to 1,759 mt in 2021.

Table 8. Annual foreign Longline catch and effort estimates by foreign-flagged vessels licensed to fish with Tonga EEZ (national waters) in 2022.

Flag	YEAR	GEAR	ALB	YFT	BET	SKJ	BUM	BLM	MLS	SWO	SFA	DOL	FAL	BSH	OCS	THR	MAK	HAM	POR	OTH	TOT
FJ	2022	LL	385	80	17	11	14	2	0	1	1	5	0	0	0	0	0	0	0	14	529
TW	2022	LL	460	330	44	15	33	4	15	6	4	8	0	26	0	0	4	0	0	53	1003
TOTAL			845	410	60	26	47	7	15	7	5	13	0	26	0	0	4	0	0	67	1531

4.0 SOCIO-ECONOMIC FACTOR

Tuna export from Tonga continued in 2022, although, yet still facing some challenges due to the restrictions of the COVID-19 crisis. The tuna fleets played a significant role in the country's fish exports compared to other fisheries such as the snapper fishery and aquarium trades. The tuna industry exported 1,060.91 mt in 2022. This marked a decrease of 28% compared to 1,473 mt exported in 2021. The decline in exports could be attributed to the challenges posed by the COVID-19 pandemic since 2020. The estimated FOB revenue collected from fish exported during 2022 amounted to TOP 5,951,893.00. this represents a decrease of 27% from the TOP 8,101,783.00 collected in 2021. The decrease in revenue is likely associated with the reduced volume of tuna exports. While the focus is on tuna exports, the local market continues to supply fish to local people for domestic consumption. This ensures that the local population has access to fish as a food source.

Licensing of fishing vessels both domestic and foreign and renting of resources from landing and export catches continues to add additional revenue for the domestic fisheries sector. This indicates that fisheries activities, including collaborations with foreign vessels, provide economic benefits beyond export revenue alone. Foreign vessels unload their catches at port Nuku'alofa in Tonga. The catches are then repacked into shipping containers for export to overseas markets. However, a portion of the catch is sold in the local market and retail stores, ensuring that the local population has access to fresh fish.

Despite the challenges posed by the COVID-19 crisis, the tuna industry in Tonga remained an important sector for fish exports, generating revenue and contributing to the domestic fisheries sector.

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 their respective market destination, whether overseas or domestic market. This facilitates proper monitoring and control of the fishery, as all catches are accounted for in a centralized location. After unloading, the exported fish is repacked into cargo containers and sent to overseas markets. On the other hand, the local fish is sold in Tonga to cater for domestic consumption. In 2017, the Ministry of Fisheries initiated a fish-selling scheme in collaboration with foreign vessel agencies. The objective of this scheme is to promote fish consumption and combat non-communicable diseases (NCDs) by making fish more affordable for local consumers. The fish-selling scheme has been successful in encouraging locals to consume more fish as part of a healthy diet. By reducing the price of fish through this program, the Ministry of Fisheries has made it more affordable for the local population, promoting the consumption of fish and its associated health benefits.

Tonga's main export markets for its fresh, chilled tuna (Yellowfin and Bigeye) were Japan, and the US (Los Angeles), with fewer New Zealand and Australia markets. The frozen tuna, tuna-like species with other bycatch, were exported to American Samoa, Taiwan, Vietnam and Fiji. There was no export of Bigeye and Yellowfin tuna by foreign fishing vessels to the Japanese market in 2022. In addition, fresh, chilled albacore and some bycatches (frozen and new) are sold locally.

Figure 5 describes the leading market destination of tuna longline catches exported from Tonga in 2022. 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 at 44%, Taiwan at 37%, and Vietnam and Fiji at 3% each. Fresh, chilled tuna exports contribute a smaller portion of the export with 4% exported to Hawaii and the US, Japan with 3%, NZ with 2% and then Australia with below 0%.

Albacore tuna dominated the exported individual species with 47% of the total volume, followed by yellowfin with 33%, Bigeye, dolphin fish and others with 5% each, marlin and shark with 3% each, and skipjack and Mahimahi with 0%. In addition, frozen by-catch species such as "Others" (OTH) are mainly exported to Fiji, Taiwan and Thailand, including escolar, oil fish, and wahoo.

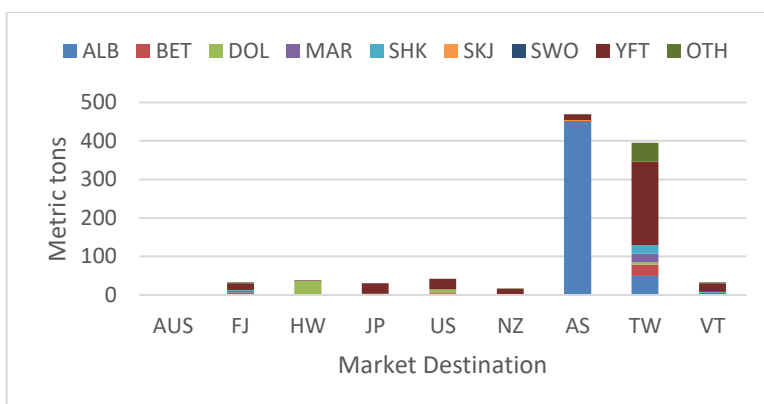


Figure 5. Longline catch (MT) export and Destinations for Tonga, 2022

6.0 ONSHORE DEVELOPMENT AND FUTURE PROSPECTS OF FISHERY

Tonga's commercial longline fishery is limited by a gap in 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 locally-based fleet development.

In 2022, there were two domestic tuna fishing companies operating in Tonga: The Pacific Sunrise Fishing Company and KasilitaTalakai Fishing Company. These companies were involved in the domestic tuna fishing industry within Tonga waters.

In 2022, the tuna fishery experiences a slow recovery after facing significant challenges due to the global disruptions caused by the COVID-19 pandemic. Despite these challenges, Tonga's domestic fleets were able to export fresh, chilled tuna to sashimi markets, particularly in Japan, the US, and New Zealand. This export market focus highlights the high-quality tuna from Tonga being targeted for premium sashimi consumption. Furthermore, the domestic fleets in Tonga played a crucial role in employing local people, both in renewing their vessels and in the processing and retailing of the tuna. This not only contributes to the local economy but also ensures that employment opportunities are available within the fisheries sector.

In terms of catches, the overall catch by the domestic fleets in 2022 amounted to 481 mt. This indicates a significant increase of 32% compared to the catches in 2021. The increase in the catch can be attributed to the expansion of the fleet, with more vessels operating in 2022.

The collaboration between the National Fisheries Council (NFC), the Ministry of Fisheries and other stakeholders plays a crucial role in the development of various fisheries in Tonga, including the Tuna fishery. Together, they work towards addressing different challenges and improving infrastructure and equipment within the fisheries sector. This includes the establishment of fisheries harvest and packing facilities that provide low fees for fishers. These infrastructure developments aim to enhance the efficiency and effectiveness of fish handling, processing and distribution. Through infrastructure development, equipment improvement and encouragement of domestic vessel operations, they aim to create a favourable environment for the future development of fisheries including the tuna fishery.

The Regional Tuna Data and Stock Assessment workshops are workshops annually conducted by SPC for its member countries. Both workshops play a crucial role in strengthening the scientific capabilities of member countries in monitoring and managing their tuna fisheries. 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). Through the introduction of stock assessment models, TUMAS, and the Seapodym model, participants gain valuable tools and knowledge to support evidence-based decision-making for sustainable tuna fisheries management. Both workshops were conducted virtually in 2022.

TUFMAN-2 and its recent developments have revolutionized data collection and reporting processes in Tonga's fisheries sector. The e-Reporting tool, facilitated through applications such as ONBOARD, ONSHORE, OLLO and TAILS, enables the electronic submission of datasheets from sea captains, port samplers, and artisanal data collectors. Tonga has full implementation (100%) of Electronic Reporting in all its national fleets. This means that sea captains and port samplers can electronically submit data sheets through the designated applications. While ER has been fully implemented for national fleets, the coverage for foreign fishing Vessels currently stands at 50%. Tonga aims to achieve 100% ER coverage for foreign vessels by ensuring that every vessel licensed to fish in Tonga's waters must be required to use the ER application for its reporting activities. TAILS is an important component of data collection in Tonga's artisanal fisheries. In 2022, the trial and implementation of TAILS were extended to Ha'apai and the two Niuas, showcasing the ongoing efforts to expand data collection to remote islands. Tonga expresses gratitude to the Oceanic Fisheries Programme of the Pacific Community (SPC) for developing excellent ER applications, including ONBOARD, ONSHORE, TAILS and OLLO. These applications have played a crucial role in streamlining data collection processes and enabling timely submissions, even during the COVID-19 restrictions. The use of these ER applications has been instrumental in ensuring the timely and efficient collection of data.

Overall, the implementation of TUFMAN-2 and its associated ER applications has significantly enhanced data collection and reporting capabilities in Tonga's fisheries sector. The use of these tools has improved the efficiency, accuracy, and accessibility of data, supporting evidence-based decision-making and contributing to the sustainable management of fisheries resources.

7.0 RESEARCH ACTIVITIES AND STATUS OF TUNA FISHERY DATA COLLECTION

7.1 Logsheets and Unloading data collection

In 2022, Tonga continued to utilize the expanded SPC/FFA Regional Longline Logsheets (2016) format for data collection in its fisheries sector. This standardized format ensures consistency in data collection practices. Tonga remains committed to achieving 100% coverage of logsheets, unloading, and port sampling data from both national and foreign vessel licenses to fish in our EEZ. This comprehensive coverage enables better monitoring and assessment of fishing activities.

The implementation of electronic reporting (ER) applications developed by SPC OFP has significantly improved the efficiency of Tonga's offshore data collection. Future more, ER applications have also contributed to capacity-building efforts among sea captains and observers. Through the use of these tools, sea captains and observers have been able to enhance their understanding of data collection protocols and improve their ability to submit accurate and timely data.

7.2 Observer Programme

The Tonga National Observer Programme (TOOB) continues to deploy observers onboard domestic and foreign longline vessels operating within Tonga's EEZ. These observers serve as independent observers to collect valuable information about fishing operations and activities on board these vessels. Currently, there are two certified debriefers and eight active Observers within the program. These individuals are responsible for conducting debriefing sessions with observers and ensuring the accurate collection and reporting of data. In 2022, observer coverage onboard Foreign fishing vessels 2022 was 89.2% and 20.9% onboard domestic vessels. Observers aim to collect information on various aspects of fishing operations, including fish caught, fish handling techniques, fishing technology, by-catch and discards, and other vessel activities. This comprehensive data collection provides valuable insights for stock assessment and management purposes. Observers ensuring fishing vessels' compliance with fisheries legislation is an integral part of the program. They monitor and report any potential violations or non-compliance with fisheries regulations, contributing to the effective enforcement and management of fisheries resources.

7.3 Port Sampling Programme

The Ministry of Fisheries, and the assistance of the Japanese funds projects in both 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 2022. ONSHORE applications developed by SPC OFP greatly assisted our port samplers with the 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 donors (JTF, SRF) and regional organization (FFA, SPC) for their excellent financial and technical support in developing our tuna data collection and analysis as well as providing training to our fisheries staff, observers and data monitors. Your 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

23 March 2023¹

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

CMM 2009-03 [Swordfish], Para 8	CCM-flagged* vessels south of the 20S		chartered vessels*		Other vessels fishing within the CCM's waters south of the 20S										
	Year	Catch (tonnes)	Vessel numbers	Catch (tonnes)	Vessel numbers	Flag	Catch (tonnes)	Vessel numbers							
	2021**	7.253	4	-	-	FJ	0.494	5							
						TW	5.021	4							
	2022	7.879	6	-	-	FJ	0.607	4							
TW						1.098	5								
<ul style="list-style-type: none"> All swordfish were caught as bycatch There are no Tonga-flagged vessels targeting swordfish so the Foreign Fishing Vessels SP_SWO catch. **2021 catch record was provided in 2021 Annual Report Part 1 but is reproduced here to be in the required template 															
Observer coverage (WCPFC 11 decision – para 484(b))	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	864600	153138	17.7	520	107	20.6	775	160	20.6	109	22	20.18	All vessels observer trips are non ROP trips
CMM 2009-06 [Transshipment], Para 11(ANNEX II)	<p align="center">NOT APPLICABLE</p> <p>NO transshipment activities were undertaken by TO flag or any of its licensed Foreign Fishing Vessel flag occurring in Tonga ports or EEZ</p>														
CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5	<p align="center">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 WCPFC19 (Dec 2022). First issued on 23 March 2023. Changes made from Addendum for 2021, include including the new CMM 2022-02 for North Pacific Swordfish and **WCPFC19 Agreed Audit Points**.

Table x: Effort, observed and estimated seabird captures by fishing year for [CCM] [South of 30°S; 25°S-30°S; North of 23°N; or 23°N – 25°S¹]. For each year, the table gives the total number of hooks; the number of observed hooks; observer coverage (the percentage of hooks that were observed); the number of observed captures (both dead and alive); and the capture rate (captures per thousand hooks).

Year	Fishing effort				Observed seabird captures	
	Number of vessels	Number of hooks	Observed hooks	% hooks observed	Number	Rate ²
2018	5	1225300	29320	2.4	0	0
2019	6	1200800	47286	3.9	0	0
2020	5	777400	87639	11.3	0	0
2021	4	664503	122068	18.4	0	0
2022	6	864600	153138	17.7	0	0

¹ Insert 'North of 23°N', 'South of 30°S', '25°S-30°S' or '23°N – 25°S'. For CCMs fishing in all areas, provide separate tables for each area.

² Provide data as captures per one thousand hooks.

Table y: Proportion of mitigation types¹ used by the fleet in [year].

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	1	0	
Options required south of 25°S	TL + NS	0	0	0	0
	TL + WB	0	0	0	0
	NS + WB	0	0	0	0
	TL + WB + NS	0	0	0	0
Other options 25°S-30°S	HS	0	0	0	0
	WB	0	0	0	0
Other options north of 23°N	TL	0	0	0	0
	SS/BC/WB/DLS	0	0	0	0
Provide any other combination of mitigation measures here	SS/BC/WB/(MOD or BDB)	0	0	0	0
	MOD	0	0	47	0
	NS MOD	0	0	59	0
Totals (must equal 100%)	0	0	100	0	

¹ TL = tori line, NS = night setting, WB = weighted branch lines, SS = side setting, BC = bird curtain, BDB = blue dyed bait, DLS = deep setting line shooter, MOD = management of offal discharge, HS = hook-shielding device.

Table z: Tonga LL Vessels observed no records of seabird captures.

Table z: Number of observed seabird captures in [CCM] longline fisheries, 2012, by species and area.

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>2022 – 6 LL vessels caught a total of 19.273mt of SW_MLS as bycatch south of 15°S of the Convention area. No flagged vessel target MLS south of 15°S</p>
<p>CMM 2015-02 [South Pacific Albacore] Para 4</p>	<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 authorization.</p>
<p>CMM 2019-03 [North Pacific Albacore], Para 3</p>	<p>Not Applicable</p> <ul style="list-style-type: none"> • Tonga’s domestic LL vessel does not fish above the equator. <p>* Note: WCPFC10 clarified that this reporting responsibility lies with the flag State</p>
<p>CMM 2022-02 [North Pacific Swordfish], para 4</p>	<p>Not Applicable</p> <ul style="list-style-type: none"> • Tonga’s domestic LL vessel does not fish above the equator. <p>* Note: WCPFC10 clarified that this reporting responsibility lies with the flag State</p>