Western and Central Pacific Fisheries Commission

SCIENTIFIC COMMITTEE
TWENTIETH REGULAR SESSION

Manila, Philippines
14 – 21 August 2024

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

WCPFC-SC20-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

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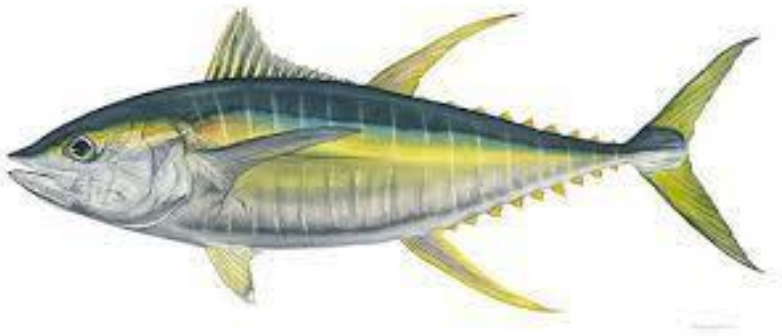
TONGA ANNUAL REPORT TO THE COMMISSION

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 2024**	**YES**

1.0 ABSTRACT

Tonga has a tuna fishery that consists of both a National (Flag State) and Foreign longline fleet (Coastal state). In 2023, the total catch for tuna and tuna-like species in Tonga amounted to 2,646 metric tons (mt), representing a significant 24% increase compared to the 2022 catch of 2,013 metric tons (mt).

The Tonga National fleet operates six longline vessels exclusively within Tongan waters. In 2023, the estimated catch by the National fleet for primary species was 290 metric tons, indicating a notable decline of 27% from the 2022 catch of 368 metric tons. The overall estimated catch of all species by the National fleet in 2023 was 360 metric tons, marking a decrease of 34% from the 2022 catch of 481 metric tons. On the other hand, the Foreign fleet in Tonga consists of nine longline vessels with an estimated catch of 2,286 metric tons, representing a substantial 33% increase from the 2022 catch of 1,532 metric tons.

In 2023, Tonga's tuna fishery saw a slight increase in the overall catch compared to the previous year. However, there was a significant shift in the fishery dynamics. The catch by the national fleets declined, while there was a concurrent rise in the catch by foreign fleets. The decline in the national fleet's catch can be attributed to lower catch rates and technical issues experienced by vessels. Conversely, the increase in catches by foreign fleets was driven by a surge in the number of trips and days of fishing.

The national fleets caught 162.3 metric tons of Yellowfin tuna, making it the dominant species in the overall catch. In contrast, Mahimahi dominated the catches of non-target species with 51 metric tons. These results suggest that the national fleets targeted Yellowfin and Bigeye tuna for the fresh fish market.

The foreign fleet catch is mainly Albacore tuna, totaling 1,486 metric tons. In accordance with the terms and conditions of the tuna fishing licenses, it is prohibited to target any shark species in Tonga. The observer data has 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 and the ongoing effects of climate change, the Ministry of Fisheries remains dedicated to sustaining the fishery. This dedication has resulted in positive outcomes, as evidenced by the increase in the overall total catch harvested for 2023. However, adverse effects of climate change have been observed in the decreased catch rate for National fleets.

Tonga does not have any purse seine fisheries, so certain WCPFC measures related to purse seine fisheries do not apply to Tonga. However, Tonga has established an effort limit for purse seine fishing within its EEZ, setting the limit at 150-200 days per calendar year. There were no days recorded for any purse seine fishing activity within Tonga's EEZ in 2023.

Tonga has established its National Observer Program and an active domestic port sampling program for highly migratory species. These programs maintain close collaboration with the Oceanic Fisheries Program (OFP) of the Secretariat of the Pacific Communities (SPC) to collect data on 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, 2019 – 2023.

WCPFC Key Species	2019		2020		2021		2022		2023	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	30	9%	13	6%	10	4%	51	14%	26.0	9.0%
BIGEYE TUNA	16	5%	10	4%	14	5%	24	7%	14.0	4.8%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0.2	0%	0.2	0.1%
SKIPJACK TUNA	2	1%	3	1%	1	0%	2	1%	0.7	0.2%
YELLOWFIN TUNA	187	56%	155	67%	203	70%	213	58%	162.3	56.0%
BLACK MARLIN	4	1%	2	1%	0	0%	0.1	0%	0.5	0.2%
BLUE MARLIN	47	14%	21	9%	41	14%	45	12%	50.7	17.5%
STRIPED MARLIN	14	4%	4	2%	10	3%	19	5%	25.6	8.8%
SWORDFISH	35	10%	16	7%	9	3%	11	3%	7.3	2.5%
BLUE SHARK	2	1%	0	0%	0	0%	0	0%	0.0	0.0%
SILKY SHARK	10	3%	0	0%	0	0%	0	0%	0.0	0.0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0.0	0.0%
MAKO SHARKS	12	4%	6	3%	2	1%	3	1%	2.6	0.9%
OCEANIC WHITETIP SHARK	6	2%	0	0%	0	0%	0	0%	0.0	0.0%
PORBEABLE / SALMON SHARK	0	0%	0	0%	0	0%	0	0%	0.0	0.0%
WHALE SHARK	0	0%	0	0%	0	0%	0	0%	0.0	0.0%

THRESHER SHARKS	0	0%	0	0%	0	0%	0	0%	0.0	0.0%
Total catch	336		230		290		368		290	
Total effort (hhks)	12008		7774		6645		8646		11714	

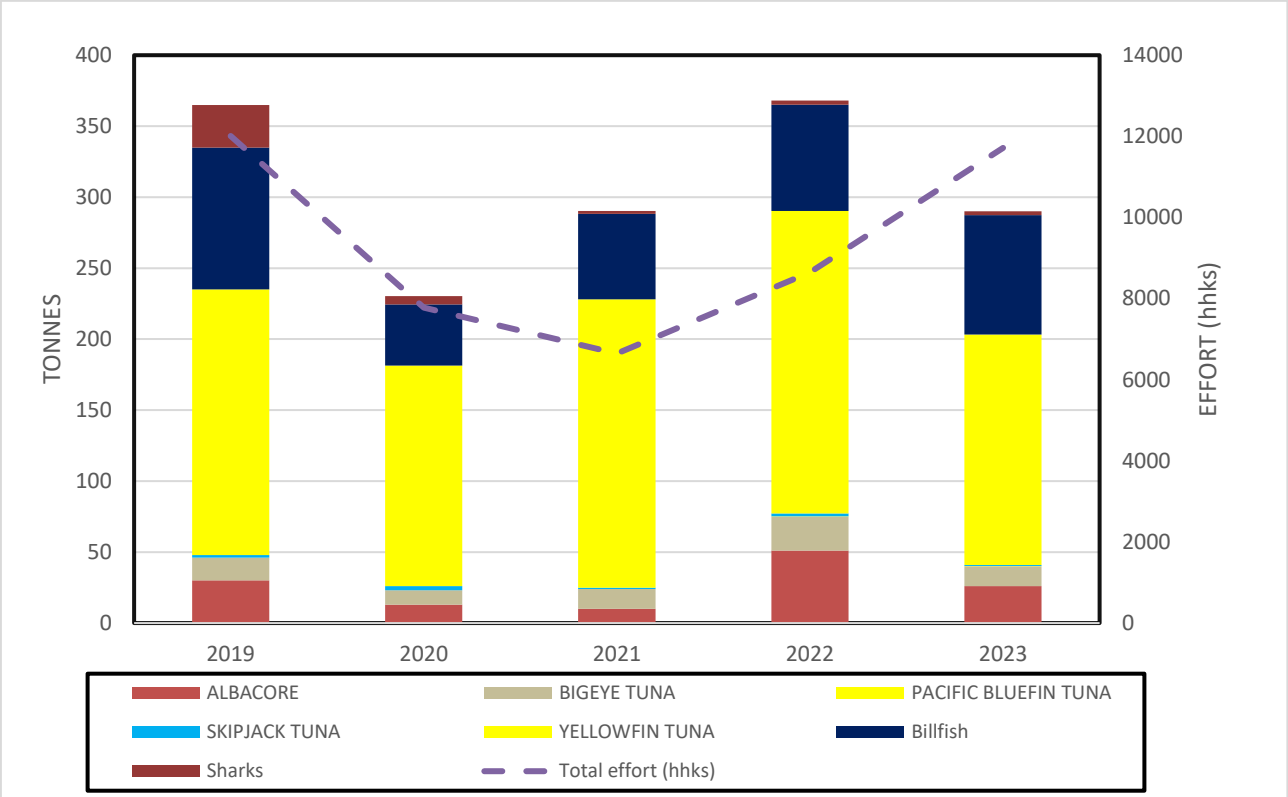


***Figure 1*: Historical annual Catch (mt) and Effort (no. of hooks), by primary species, for the Tongan longliners (National Fleets) were active in the WCPFC Convention Area for the years 2019 to 2023.**

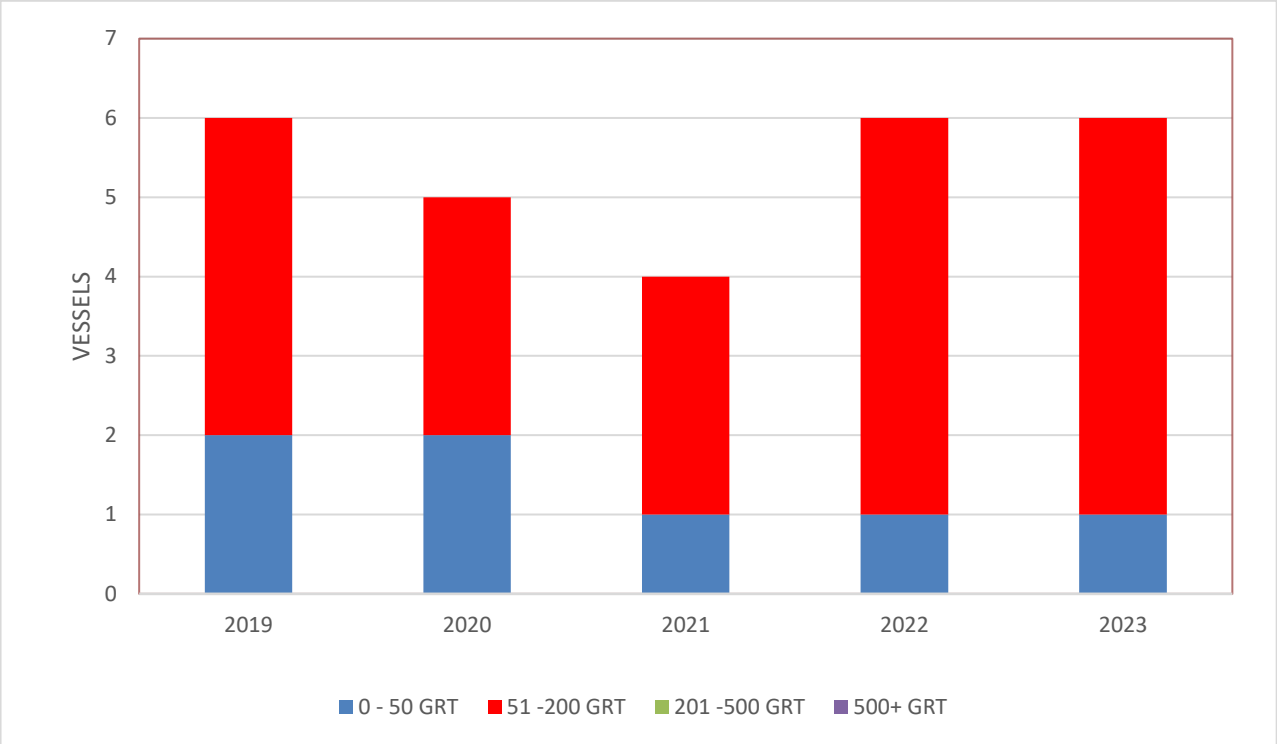
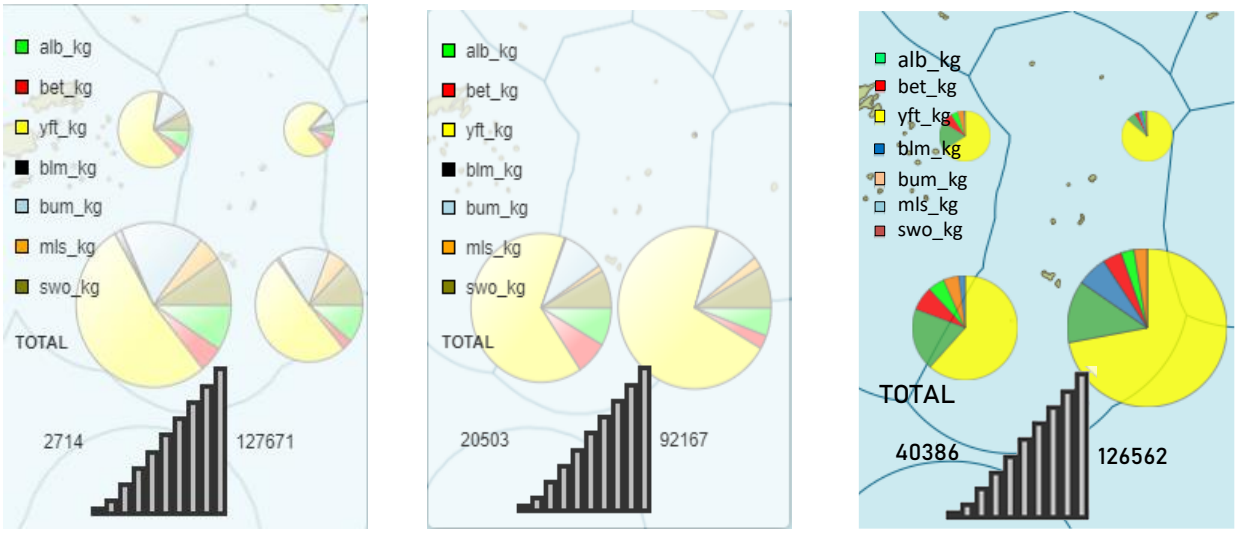


Figure 2: Historical annual longline vessels number for Tonga for the WCPFC Convention Area, 2019– 2023.

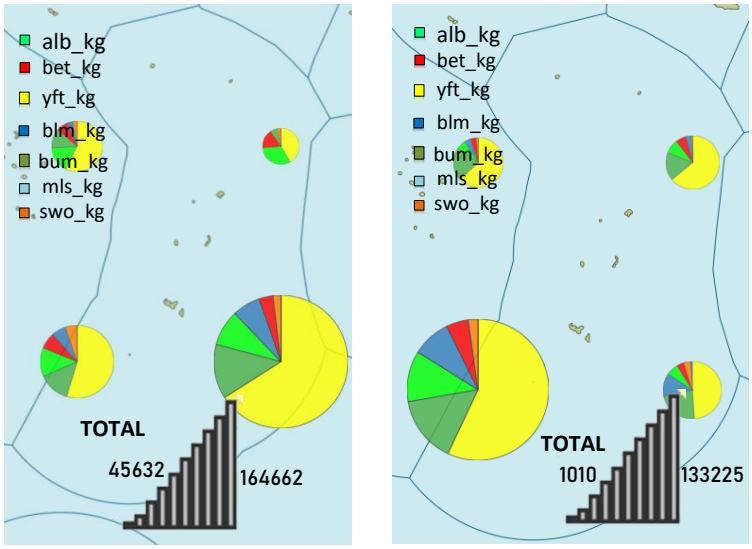
Table 2. Number of active fishing vessels in tuna fisheries in the WCPFC Convention Area by gear and size class.

Gear	**LONGLINE**
Fleet	National Fleets

Vessel category	2019		2020		2021		2022		2023	
	No.	%	No.	%	No.	%	No.	%	No.	%
0 - 50 GRT	2	33%	2	40%	1	25%	1	17%	1	17%
51 -200 GRT	4	67%	3	60%	3	75%	5	83%	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	6	100%	5	100%	4	100%	6	100%	6	100%

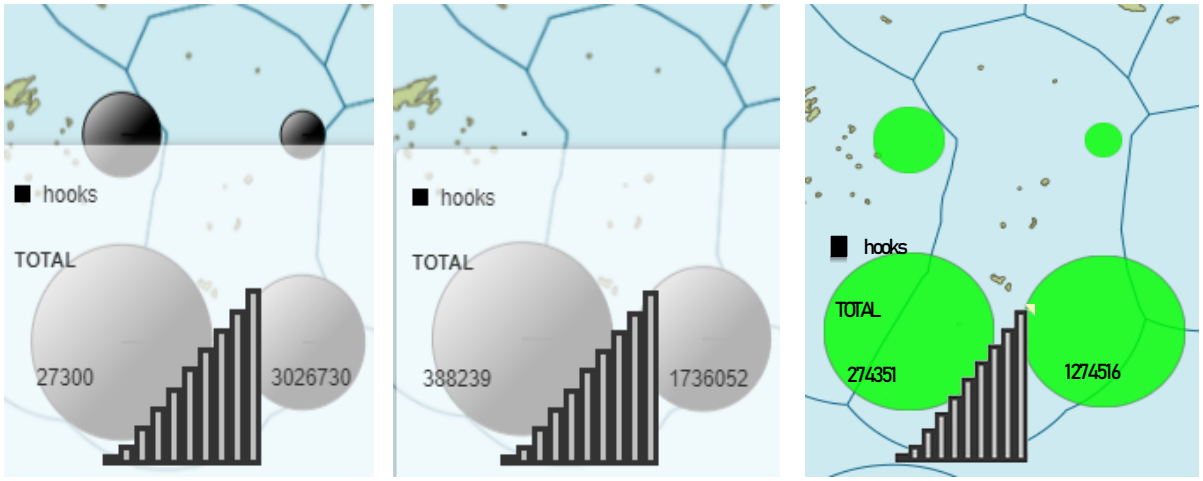


(i) 2019 *(ii) 2020* *(iii) 2021*

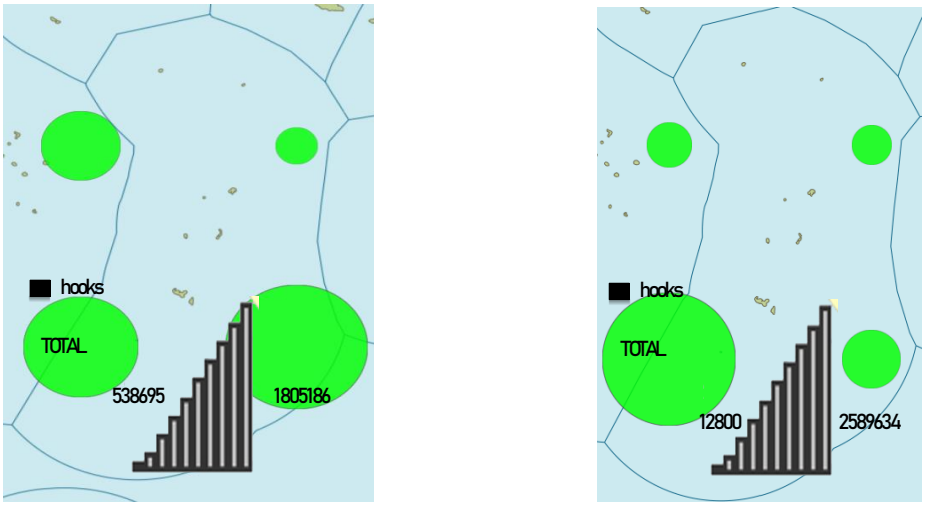


(iv) 2022 *(v) 2023*

Figure 3a (i-v). **Annual distribution of Longline National Fleet catches by target tuna species (in kilograms) in the WCPF Convention Area from 2019 to 2023.**



(i) 2019 **(ii) 2020** **(iii) 2021**



(iv) 2022 **(v) 2023**

Figure 3b (i-v): **Annual distribution of Longline National Fleet effort (in hooks) in the WCPF Convention Area from 2019 to 2023.**

Table 3: Annual RETAINED catch by key species in the WCPFC Convention Area for 2019 – 2023.

WCPFC Key Species	2019		2020		2021		2022		2023	
	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	30	9%	13	6%	10	4%	51	100%	26.0	9%
BIGEYE TUNA	16	5%	10	4%	14	5%	24	47%	14.0	5%
PACIFIC BLUEFIN TUNA	0	0%	0	0%	0	0%	0.2	0%	0.2	0%
SKIPJACK TUNA	2	1%	3	1%	1	0%	2	4%	0.7	0%
YELLOWFIN TUNA	187	56%	155	67%	203	70%	213	418%	162.3	56%
BLACK MARLIN	4	1%	2	1%	0	0%	0.1	0%	0.5	0%
BLUE MARLIN	47	14%	21	9%	41	14%	45	88%	50.7	17%
STRIPED MARLIN	14	4%	4	2%	10	3%	19	38%	25.6	9%
SWORDFISH	35	10%	16	7%	9	3%	11	21%	7.3	3%
BLUE SHARK	2	1%	0	0%	0	0%	0	0%	0.0	0%
SILKY SHARK	10	3%	0	0%	0	0%	0	0%	0.0	0%
HAMMERHEAD SHARKS	0	0%	0	0%	0	0%	0	0%	0.0	0%
MAKO SHARKS	12	4%	6	3%	2	1%	3	6%	2.6	1%
OCEANIC WHITETIP SHARK	6	2%	0	0%	0	0%	0	0%	0.0	0%
PORBEABLE / SALMON SHARK	0	0%	0	0%	0	0%	0	0%	0.0	0%
WHALE SHARK	0	0%	0	0%	0	0%	0	0%	0.0	0%
THRESHER SHARKS	0	0%	0	0%	0	0%	0	0%	0.0	0%
Total catch	336		230		290		368		290	
Total effort (hhks)	12008		7774		6645		8646		11714	

Table 4: Annual DISCARDED catch by key species in the WCPFC Convention Area for 2019 – 2023.

	2019		2020		2021		2022		2023	
WCPFC Key Species	MT	%	MT	%	MT	%	MT	%	MT	%
ALBACORE	3	0	0	0	0	0	0	0	1	4
BIGEYE TUNA	0	0	0	0	0	0	0	0	0	0
PACIFIC BLUEFIN TUNA	0	0	0	0	0	0	0	0	0	0
SKIPJACK TUNA	0	0	0	0	0	0	0	0	0	0
YELLOWFIN TUNA	0	0	0	1	0	0	0	0	2	19
BLACK MARLIN	0	0	0	0	0	0	0	0	0	0
BLUE MARLIN	0	0	0	0	0	0	0	0	5	40
STRIPED MARLIN	0	0	0	0	0	0	0	0	2	17
SWORDFISH	0	0	0	0	0	0	0	0	0	0
BLUE SHARK	0	0	0	0	0	1	0	0	2	18
SILKY SHARK	0	0	0	0	0	0	0	0	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	0	0	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	1	0	0	0	0	0	0	0	0.2	1
Total	5		0		0		0		13	

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 2019 to 2023.

Non-Target Species	2019	2020	2021	2022	2023
Wahoo	9	5	5	5	5
Sailfish (Indo-Pacific)	20	6	7	7	10
Dolphin fish	141	38	19	91	51
Opah/Moonfish	0	0	0	0.2	0
Others	15	5	3	8	5
Total	**185**	**54**	**34**	**112**	**71**

2.0 BACKGROUND

Commercial fisheries for high migratory species, particularly tuna, began in Tonga in the early 1970s with the acquisition of second-hand longliners 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 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, marking a significant step in the development of Tonga's commercial fishing industry.

During the early 1990s, the US Aid/Tonga Fisheries project conducted tests to evaluate the viability of medium-sized vessels for longlining, focusing on targeting fresh fish for the sashimi market, aiming 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 which 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, emphasizing strengthening its capabilities in developing and domesticating its Tuna fishery.

Presently, the Tuna fishery in Tonga primarily involves longline fishing vessels specifically targeting tuna and tuna-like species, operating within Tonga's Exclusive Economic Zone (EEZ) extending up to 200 nautical miles from the country's coastline.

Tonga also has a small artisanal fleet with small fishing vessels and game fishing vessels using trolling fishing methods, primarily 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 with a permit from their respective flag states. Tonga had only one flagged vessel license for high seas fishing in 2023.

Tonga's Exclusive Economic Zone (EEZ) covers an area of approximately 700,000 square kilometers. The total catches from Tonga’s EEZ have shown a similar trend to fishing efforts. In 2022, the total catches by Tonga's national fleets from the EEZ amounted to 481 metric tons, which dropped to 360 metric tons in 2023, attributed to factors including, engine technical problems during fishing trips and very low catch rates due to the impact of climate change.

Tonga also has a significant game-fishing sector, separate from commercial longline fleets, with minor interactions between the two.

In 2023, the Ministry, with assistance from the Japanese Trust Fund, expanded the TAILS data collection to cover all of Tonga’s island groups, achieving 100% coverage. Including Tuna artisanal data in Tonga’s Annual Catch Estimates enhances the ability to monitor and regulate artisanal tuna fisheries and also contributes to regional and global efforts to conserve marine resources.

As of 2023, there were three active certified debriefers and thirteen active Observers involved in the Observer Programme in Tonga. The observer coverage onboard foreign vessels was 82%, indicating the majority had observers present, while domestic vessel coverage was 7% for 2023.

Tonga was actively fulfilling its obligations towards the Commission's Conservation and Management Measures (CMM) and Resolutions by monitoring, implementing these measures, and reporting back to the Commission.

The Tonga Ministry of Fisheries is closely working with the Oceanic Fisheries Program (OFP) of SPC to assess the status of tuna stock in the Tonga EEZ in relation to the entire stock in the Western and Central Pacific Ocean (WCPO). This assessment is crucial for effective fisheries management.

The tuna fishery in Tonga is facing significant challenges due to the global disruptions caused by COVID-19 and the impact of climate change. Technical failures and low catch rates in 2023 have led to a decrease in the overall catch of the national fleets, highlighting the vulnerability of the fisheries sector to external factors.

However, Tonga's resilience is evident in its unwavering commitment to the development and promotion of sustainable fisheries. Despite the setbacks, Tonga continues to prioritize informed management decisions and effective measures to ensure the long-term viability of its fisheries resources. By doing so, Tonga not only safeguards the livelihoods of its people but also contributes to global efforts towards sustainable development and conservation of marine resources, ensuring that its fisheries remain a cornerstone of its economy and culture for generations to come.

3.0 FLAG STATE REPORTING

3.1 Status of the Fishery

3.1.1 Total annual catch by primary species

In 2023, the total fishing effort in the WCPF convention Area was approximately 11,714 hundred hooks, marking a 26% increase from the previous year's effort of 8,646 hundred hooks. This increase is solely attributed to the Tonga Exclusive Economic Zone (EEZ).

The estimated catch for primary species in 2023 was 290 metric tons (mt), reflecting a 29% decrease from the previous year.

In 2023, yellowfin tuna made up 56% of the total catch of the main tuna species, followed by albacore at 9% and bigeye at 5%. Blue marlin accounted for 17% of the total catch of primary species for billfish, while striped marlin made up 9% and swordfish 3%. For shark species, catch and retained were dominated by Mako sharks with 1%, while other shark species such as blue sharks, silky and oceanic whitetips were caught but released.

The annual CPUE (kg/100hks) for the main tuna species caught by the Tongan Longliners from 2019 to 2023 is depicted in Figure 4. The CPUE for albacore were stable until 2022, with a slight increase followed by a decrease in 2023. This indicates relatively consistent catch per unit effort with a minor improvement in 2022 and fluctuations in 2023. The CPUE for bigeye tuna showed a constant trend throughout the reporting period. The declining trend in CPUE for yellowfin tuna since 2021 can be attributed to environmental factors such as El Nino and La Nina, impacting the abundance and accessibility of yellowfin tuna, resulting in a lower catch per unit effort.

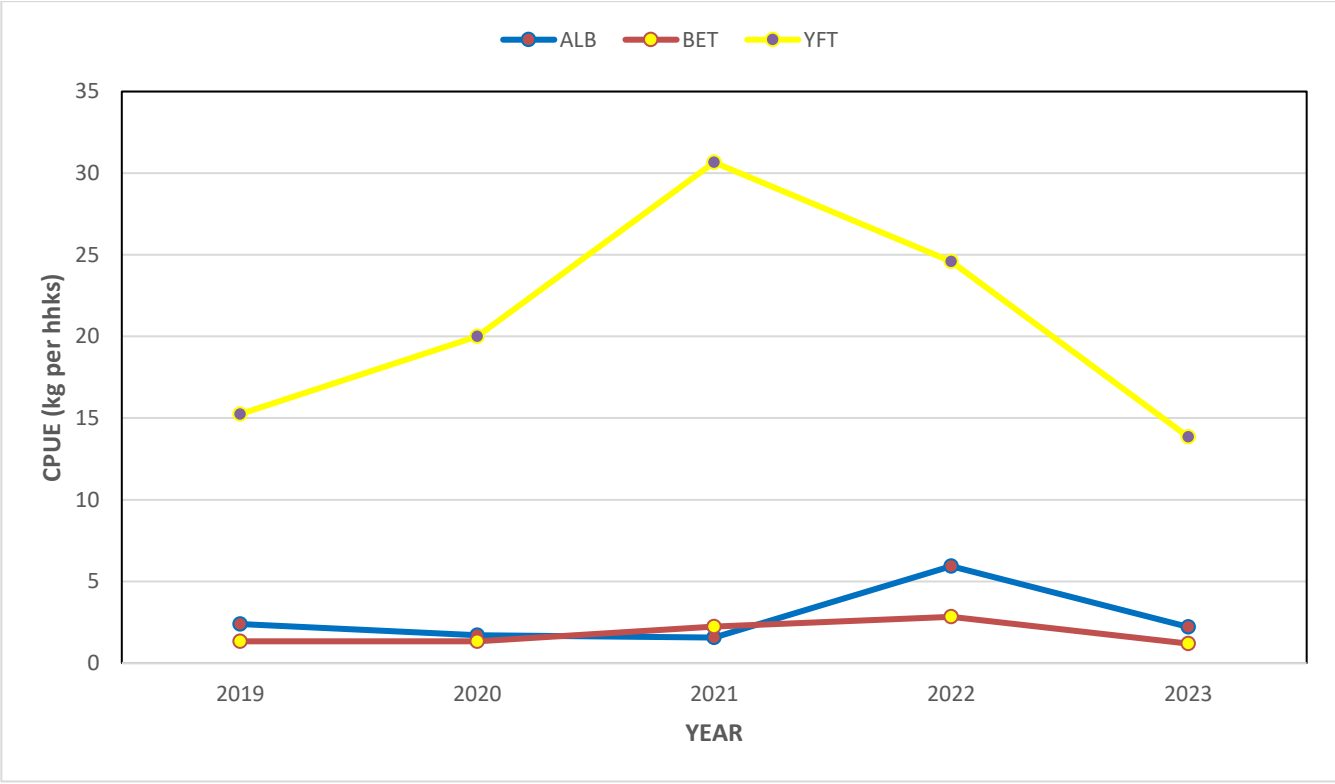


Figure 4. CPUE (kg per 100 hooks) of main tuna species for Tonga longliners were active in the WCPF Convention Area for the years 2019 to 2023

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 2023. Dolphin fish (*Mahimahi*) had the highest catch by weight, totalling 51 mt, Sailfish had a catch of 10 mt and Wahoo had a catch of 5 mt respectively. Mako sharks were the most 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 data were obtained from log sheets, observer records, and port sampling. 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, indicating their value in the fishery, especially 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 also employed measures such as using circle hooks and fish baits with less squid bait to reduce sea turtle mortality in their operations.

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 2023, 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 2023, 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 2023, nine (9) foreign-flagged longline vessels with valid licensed to fish in Tonga EEZ same as in 2022 (Tables 6 and 7). According to our Tuna Development and Management Plan 2022 – 2026, the number of foreign longline fishing vessels licensed to fish at any given time does not exceed fifteen (15).

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)	2019	2020	2021	2022	2023
0 - 100MT	7	10	6	5	5
101 - 200MT	3	3	4	4	4
201+	0	0	0	0	0
Total	10	13	10	9	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	
2019	0	7	3	10
2020	0	7	5	12
2021	0	5	5	10
2022	0	5	4	9
2023	0	5	4	9

The annual catch for foreign-flagged vessels in 2023 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 2023 was 2,286 mt, an increase of 33 % from the 1,531 mt in 2022.

Table 8. **Annual foreign Longline catch and effort estimates by foreign-flagged vessels licensed to fish with Tonga EEZ (national waters) in 2023.**

Flag	YEAR	GEAR	SPECIES_WT (mt)																
			ALB	YFT	BET	SKJ	BUM	BLM	MLS	SWO	SFA	DOL	FAL	BSH	OCS	MAK	HAM	OTH	TOT
FJ	2021	LL	645	130	35	14	22	2	13	3	1	2	0	0	0	0	0	17	884
TW	2021	LL	841	288	58	21	42	4	41	10	4	5	0	26	0	5	0	58	1,402
TOTAL			1,486	418	93	35	64	6	55	13	4	7	0	26	0	5	0	75	2,286

4.0 SOCIO-ECONOMIC FACTOR

Tuna export from Tonga continued in 2023, although, yet still facing some challenges since 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 2,031.4 mt in 2023. This marked an increase of 48% compared to 1,060.91 mt exported in 2022. The increase in exports were mainly high demand from the markets. The estimated FOB revenue collected from fish exported during 2023 amounted to TOP 10,745,705.00. an increase of 45% from the TOP 5,951,893.00 collected in 2022. This increase in revenue is due to the increase of the 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. It is a 100% unloads by Foreign vessels catches at Nuku'alofa port 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. Since its launch in 2017, the fish-selling initiative between the Ministry and foregin vessel agencies aimed at tmaking fish more affordable for local consumers has remained ongoing. The primary objective of this initiative is to promote higher fish consumption among the local population as part of a helathy diet and to combat non-communicable diseases (NCDS). By loweing fish prices through the program, the Ministry has successful encourage locals to increase their fish intake, benefiting from its rich nutrients such as omega-3 fatty acids. This intitiave not only seek to enhance public health outcomes but also strengthens partnerships with foreign agencies to ensure a consistent supply of fish for the local market.

Tonga's main export markets for its fresh, chilled tuna (Yellowfin and Bigeye) were Honolulu, US(Los Angeles) and Japan, with fewer to New Zealand, Australia and Canada 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 2023. 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 2023. Frozen fish dominates the total export volume from catches landed by longline vessels. The largest share of this export volume went to American Samoa at 51%, followed by Fiji at 24%, Taiwan at 19 %, and Vietnam at 1%. Fresh and chilled tuna exports contribute a smaller portion with 4% exported to Honolulu, followed by US with 0.5%, Japan and New Zeland with 0.2% each, Australia with 0.1% and Canada 0.01%.

Among the individual species, Albacore tuna dominates the exports accounting for 72% of the total volume. Yellowfin follows with 12%, Mahimahi with 4%, Bigeye with 3%, and Wahoo, Escolar and Marlin each with 2%. Moonfish, Shark and Skipjack make up 1% each, while Baracuda, Oilfish, Swordfish, Sailfish and Spearfish contributes less than 1%.

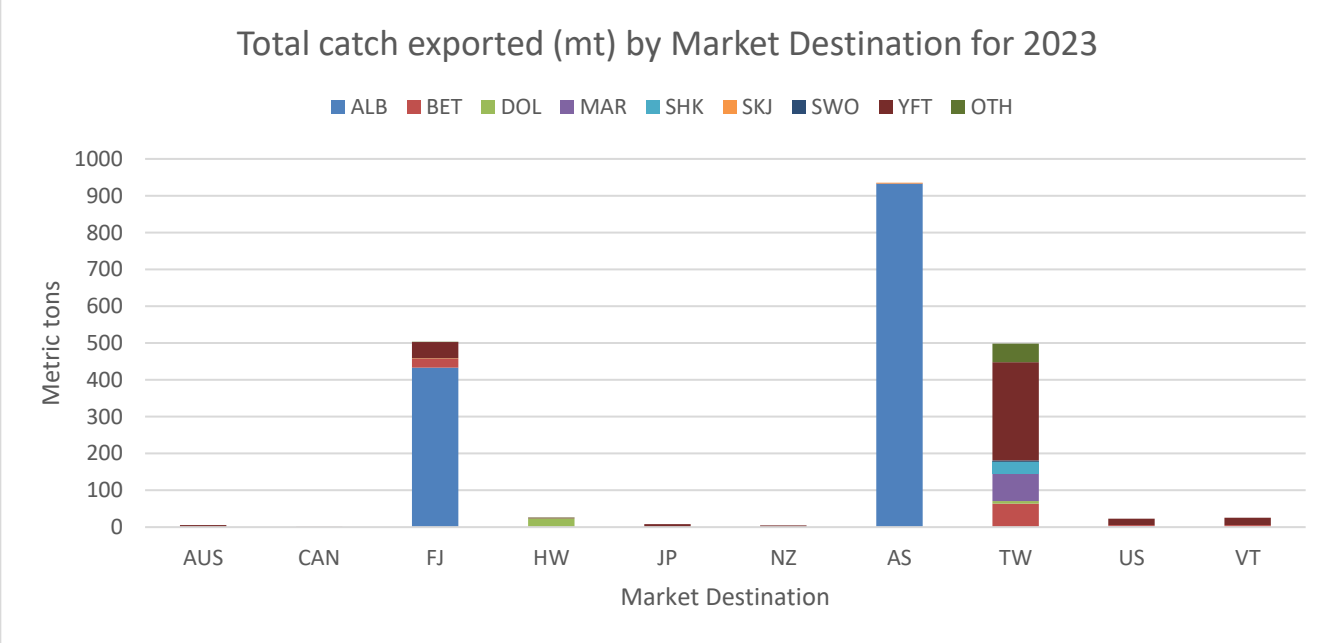


***Figure 5*. Longline catch (MT) export and Destinations for Tonga, 2023**

6.0 ONSHORE DEVELOPMENT AND FUTURE PROSPECTS OF FISHERY

Climate change, declining catch rates, and unstable oceanographic conditions have significantly threatened the sustainability of tuna species today, casting uncertainty over the future of Tonga's longline fishery. Nevertheless, despite these challenges, Tonga is aspiring to expand its longline fishing capacity within its Exclusive Economic Zone (EEZ) from twenty (20) to thirty (30) vessels, with a

requirement that at least fifteen (15) of these vessels must be locally owned. Additionally, Tonga is also aims to secure access to other oceanic fishing grounds, including waters belonging to neighboring states. (Tonga Tuna Management & Development Plan 2022-2026).

Unfortuantely, high opeating costs and inadequate infrastructure have resticed the further development of the local fleet.

In 2023, still 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.

The ability of Tonga's domestic fleets to export fresh, chilled tuna to premium sashimi markets despite the challenges posed by the COVID-19 pandemic and climate change is a testament to the resilience and adaptability of the country's fisheries sector. The focus on high-quality tuna targeted for premium consumption in markets such as Japan, the US, and New Zealand underscores Tonga as a producer of one of the top quality seafood products.

Moreover, the role played by domestic fleets in employing local people, both in vessel renewal and in the processing and retailing of tuna, is vital for the local economy. Not only does this contribute to economic growth, but it also ensures that employment opportunities remain available within the fisheries sector, thereby supporting livelihoods and sustaining communities.

The significant decrease in overall catch by Tonga's domestic fleets in 2023, amounting to 360 metric tons and representing a 34% decrease compared to catches in 2022, is indeed concerning. The attributed cause, the impact of climate change leading to lower catch rates along with the loss of one vessel during the year, underscores the vulnerability of fisheries to environmental factors.

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.

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 in 2023 has full implementation (100%) of Electronic Reporting in all its national and foreign fleets. This means that sea captains and port samplers can electronically submit data sheets through the designated applications. TAILS is an important component of data collection in Tonga's artisanal fisheries and in 2023, TAILS implementation covers all the island groups. 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 2023, 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 three certified debriefers and thirteen Observers within the program. These individuals are responsible for conducting debriefing sessions with observers and ensuring the accurate collection and reporting of data. In 2023, observer coverage onboard Foreign fishing vessels was 82% and 7% 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 Trust 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 remains 100% coverage for 2023. 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 2023[1]

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

Year	CCM-flagged* vessels south of the 20S		chartered vessels*		Other vessels fishing within the CCM's waters south of the 20S		
	Catch (tonnes)	Vessel numbers	Catch (tonnes)	Vessel numbers	Flag	Catch (tonnes)	Vessel numbers
2023	6.11	6	-	-	FJ	2.029	4
					TW	6.562	4

- **All swordfish were caught as bycatch**
- **There are no Tonga-flagged vessels targeting swordfish so the Foreign Fishing Vessels SP_SWO catch.**

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

CCM Fleet	Fishery	No. opf 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	1171400	52932	5%	444	61	14%	536	36	7%	131	9	7%	All flagged vessels" observer trips are Non-ROP trips

CMM 2009-06 [Transshipment], Para 11(ANNEX II)

NOT APPLICABLE

NO transhipment activities were undertaken by TO flag or any of its licensed Foreign Fishing Vessel flag occurring in Tonga ports or EEZ

CMM 2011-03 [Impact of PS fishing on cetaceans], Para 5

NOT APPLICABLE

• 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.**

CMM 2018-03 [Seabirds] Para 13

Table x: Effort, observed and estimated seabird captures by fishing year for [*CCM*] [South of 30^{o}S; 25^{o}S-30^{o}S; North of 23^{o}N; or 23^{o}N – 25^{o}S[1]]. 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]
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
2023	6	1171400	52932	5%	0	0

1 Insert 'North of 23oN', 'South of 30oS', '25oS-30oS' or '23oN – 250oS'. 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 types[1] 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	2	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		
	HS	0	0	0	0		
Other options 25°S-30°S	WB	0	0	0	0		
	TL	0	0	0	0		
Other options north of 23^{0}N	SS/BC/WB/DSLS	0	0	0	0		
	SS/BC/WB/(MOD or BDB)	0	0	1	0		
Provide any other combination of mitigation measures here	MOD	0	0	17	0		
	NS MOD	0	0	13	0		
	NS	0	0	3	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, DSLS = deep setting line shooter, MOD = management of offal discharge, HS = hook-shielding device.

Table z: Number of observed seabird captures in [*CCM*] longline fisheries, 2023, by species and area.

Tonga LL Vessels observed no records of seabird captures.

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

CMM 2006-04 [South West striped Marlin], Para 4	2023 – 6 LL vessels caught a total of 23.0mt of SW_MLS as bycatch south of 15°S of the Convention area. No flagged vessel target MLS south of 15°S
CMM 2015-02 [South Pacific Albacore] Para 4	Data has been submitted to SPC Addressed through the regular provision of operational catch/effort logsheet data to SPC, who automatically include these data in the WCPFC databases, as per our authorization.
CMM 2019-03 [North Pacific Albacore], Para 3	Not Applicable • Tonga's domestic LL vessel does not fish above the equator. * Note: WCPFC10 clarified that this reporting responsibility lies with the flag State
CMM 2022-02 [North Pacific Swordfish], para 4	Not Applicable • Tonga's domestic LL vessel does not fish above the equator. * Note: WCPFC10 clarified that this reporting responsibility lies with the flag State