



Tuna Fishery Report Card 2023

Introduction

In 2015 Forum Leaders adopted the **Regional Roadmap for Sustainable Pacific Fisheries** setting out shared goals and strategies for the management of the region's tuna fisheries. The shared goals relate to sustainability, value, employment and food security with the goals to be achieved over the 10-year period to 2024. Subsequently, Forum Leaders established the **Taskforce on Increasing Economic Returns from Fisheries** to deliver real results within 5 years. The Taskforce developed four programme components: reform of the management of the longline fishery; increasing the value of employment and ensuring effective labour standards are in place; facilitating investment and trade; and value chain participation and established a number of specific targets to be achieved over a 5-year period.

This **Tuna Fishery Report Card** reports on the four Roadmap goals and provides commentary on trends against the sustainability, employment and food security targets specified for tuna fisheries in the Roadmap¹ and the targets set by the Taskforce. While some general commentary is provided, it is important to note that this Report Card is not intended to be a detailed report on the implementation of the strategies outlined in the Roadmap or the programmes specified in the Taskforce Report.

Additionally, it is important to note this Report Card reports on trends across FFA Members and fisheries as a whole. This masks the substantial differences between FFA Members at national level given their different resource endowments, different management regimes within their waters and different areas of comparative advantage for development of their fisheries resources.

Overview

With respect to the status of the stocks, all four main WCPO tuna stocks (South Pacific albacore, bigeye, skipjack and yellowfin) are deemed to be “biologically healthy” in that they are not overfished nor is overfishing occurring. A harvest strategy workplan is in place to establish management procedures for each of these stocks, and an TRP for skipjack adopted as part of the agreed management procedure for the stock through WCPFC CMM 2022-01 that commences this year. While, an interim TRP is in place for South Pacific albacore - a TRP that was developed with economic considerations in mind based on expected catch rates in the southern longline fishery, this is being re-evaluated in response to results of the 2021 stock assessment and ongoing discussions on fishery objectives. The workplan requires setting this TRP this year, while establishment of management procedures for South Pacific albacore is scheduled in 2024, and other stocks in 2025. Wider fishery or climate impacts on the ecosystem are not specifically evaluated here, beyond that of the longline bycatch rate of sharks, which shows a declining trend.

With regard to the economic goals in the Roadmap, value and employment, there are contrasting trends over the period since 2015 with significant increases in activity related measures while government revenue measures have remained relatively flat. With regard to the activity measures the share of the value of the catch taken by FFA Members' fleets in FFA Members' national waters was 54% in 2022 compared with 39% in 2015. Similarly, since 2015 exports to the four major markets and the volume of the tuna processed or handled onshore have increased by over 50% while tuna related employment has increased by 44%. In contrast, government revenue from access and licensing fees, which increased by over 300% between 2009 and 2015, have remained relatively flat since 2015. While the Taskforce's target of a 25% increase in government revenue from access and licensing fees was not achieved it is important to note that for the purse seine fishery the rate of return in 2015 was in excess of 20% and

¹ Reporting against the Roadmap's coastal fisheries goals and indicators is provided in the Coastal Fisheries Report Card.

that a similar rate of return continues to be achieved. Given that there were a number of factors placing downward pressure on access fees in recent years the ability of members to maintain purse seine access fee revenues demonstrates the resilience of PNA purse seine Vessel Day Scheme (VDS).

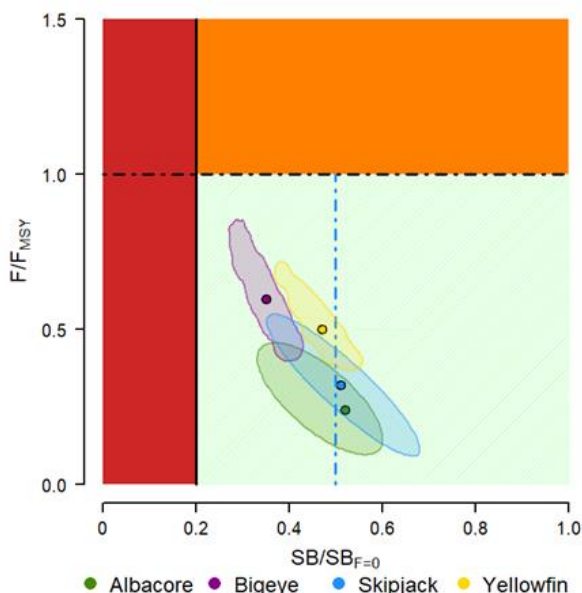
With regard to food security, given the lack of baseline data on the contribution of tuna to food security, it has been difficult to assess progress against the Roadmap target in this area. However, a number of studies have been conducted in recent years in order to assess how much tuna enters local markets for domestic consumption and the results of these studies are outlined. In addition, a study aimed at providing Members with a detailed analysis of potential policy options with regard to increasing the contribution of tuna fisheries to national food security and the applicability of these to their circumstances was presented to Members for their consideration in October 2022. Funding to assist Members to implement national programs and policies with regard to increasing the contribution of tuna fisheries to food security is available the PROPER and OFMP III projects.

Goal 1 – Sustainability

The **Roadmap** provides a 3-year timeframe for the agreement of Target Reference Points (TRPs) for key tuna stocks, and a 10-year timeframe for the implementation of management measures to achieve these TRPs in order to support economically viable fisheries. Currently, the Western and Central Pacific Fisheries Commission (WCPFC) has an interim TRP for skipjack only. While analysis and associated discussions with regard to yellowfin and bigeye TRPs are also ongoing, it seems unlikely that they will be adopted by the WCPFC in the period before the next report; the WCPFC harvest strategy workplan currently schedules their agreement for 2024. However, in the recent 20th Regular session of the commission in 2023, the WCPFC agreed on an interim target reference point (iTRP) for south Pacific albacore specified as 4% below the estimated average spawning potential depletion of the stock over the period 2017-2019. This supersedes an earlier decision of the Commission made at WCPFC15.

Target Species

The ‘Majuro’ plot on the right illustrates the relative status of each of the main tuna stocks against biological reference points (black lines). The traffic light colouring provides a rapid indication of the biological ‘health’ of each stock, with the overall intention to stay in the green and avoid the red and orange quadrants. All four main WCPO tuna stocks (South Pacific albacore, bigeye, skipjack and yellowfin) are deemed to be in the green area indicating that these stocks are “biologically healthy”, **not overfished nor is overfishing occurring**. However this does not mean that the associated fisheries for that stock are performing well economically or that desired management outcomes are being achieved. Stock projections for South Pacific albacore suggest that under status quo fishing conditions where catch levels are maintained at recent 2020 levels, the stock size will decline further in the short term before stabilizing at 47% of its current size and there is a 19% risk that it will fall below the Limit Reference Point (LRP), which is defined as 20% of the unfished spawning biomass level. The skipjack stock is currently above its interim target reference point (shown as the vertical blue dotted line) of 50% of the spawning biomass in the absence of fishing. The WCPO is now the only ocean region globally where all four major stocks are in the green, being neither overfished nor experiencing overfishing. However, there is no room for complacency with the biomass of most stocks continuing to decline, and a need to address weaknesses and gaps in the management measures currently in place.



The latest stock assessments for **yellowfin and bigeye tuna** in the WCPO were conducted in 2023. The yellowfin assessment simplified the regional structure to five regions from the nine-region structure used in the previous assessment. The analysis presented the results as a structural uncertainty grid comprising 54 models runs that were equally weighted by SC19 when developing management advice. Based on the uncertainty grid adopted by SC19, the spawning biomass of yellowfin tuna in the WCPO was determined to be above the biomass LRP and recent

fishing mortality below F_{MSY} , hence the stock is neither overfished or experiencing overfishing. Under the status quo of maintaining average fishing levels from 2019 to 2021, there is no risk of breaching the LRP. Similar to yellowfin, the management advice from the bigeye tuna assessment was formulated from the results of an uncertainty grid of 54 models that addressed several key model uncertainties in addition to estimation uncertainty. Based on the uncertainty grid, the WCPO bigeye tuna spawning biomass is estimated to be above the biomass LRP and recent fishing mortality is below F_{MSY} for all models, hence it was concluded that the stock is not overfished and not experiencing overfishing. Under the status quo fishing conditions where effort and catch levels are maintained at the average 2019-2021 levels, the stock is projected to have zero probability of dropping below LRP.

The latest stock assessment **skipjack tuna stock** was undertaken in 2022. Stock status was estimated to be similar to that from the previous assessment, with spawning biomass well above the defined overfished level and fishing mortality lower than the overfishing reference point. An interim management procedure (*i*MP) was adopted during WCPFC19 as part of the process of establishing a complete harvest strategy for this stock. The TRP associated with this *i*MP is displayed as the vertical line in the Majuro plot ($SB/SB_{f=0} = 0.5$) and the harvest control rule was designed to maintain the stock around this level, which is estimated to support recent fishing conditions and prevent future declines in stock status.

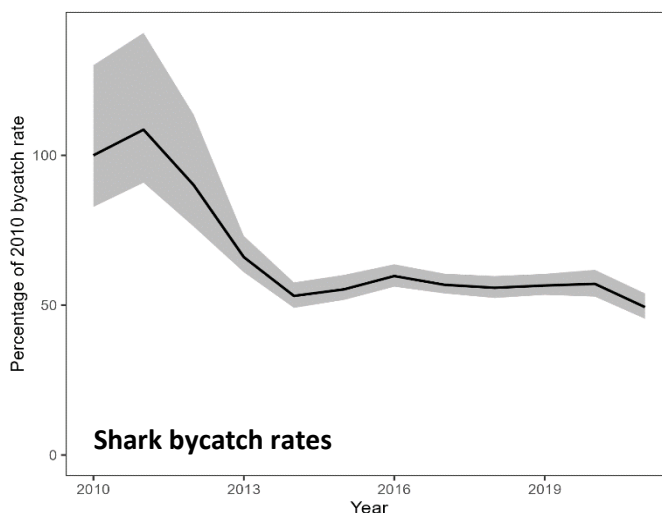
South Pacific albacore assessment was undertaken in 2021 and it included the entire South Pacific region (south of the equator) incorporating both the WCPFC-CA and the IATTC-CA revealed an ongoing depletion of spawning biomass throughout the model period from (1960-2019). The reduction in the size of this stock over time has resulted in declining catch rates, and a deterioration in the economic performance of the southern longline fishery which primarily targets it. Consequently, in the recent 20th Regular Session in 2023, the Commission established an interim target reference point (*i*TRP) for South Pacific albacore, set at 4% below the estimated average spawning potential depletion from 2017 to 2019 aiming to rebuild the stock and to support the economic viability of fleets and to achieve a long-term TRP. As such, it is vital that management measures are put in place that restrict catch and allow for sustained economically viable catch rates, including for FFA members’ domestic longline fleets.

Other commercial species

Other commercial stocks that have been assessed and that require further management include **southwest Pacific striped marlin** and **western and central North Pacific striped marlin**. This Report Card does not cover Pacific bluefin tuna as that stock is rarely caught by FFA fleets or in FFA EEZs. As such FFA members have no real control over its exploitation and limited influence on the design of management measures for this stock.

Bycatch

Median (average) longline bycatch rates of sharks in FFA members’ EEZs demonstrated a strong decline from 2010 through to 2014 (see graph at right), and remained relatively stable from 2015 onwards. The large decrease prior to 2013 is influenced by a substantial (50%) reduction in estimated shallow set longline effort, and also a reduction in estimated catch rates for some species (e.g. silky shark). Observed captures of marine mammals, seabirds and sea turtles are insufficient to explore temporal trends.



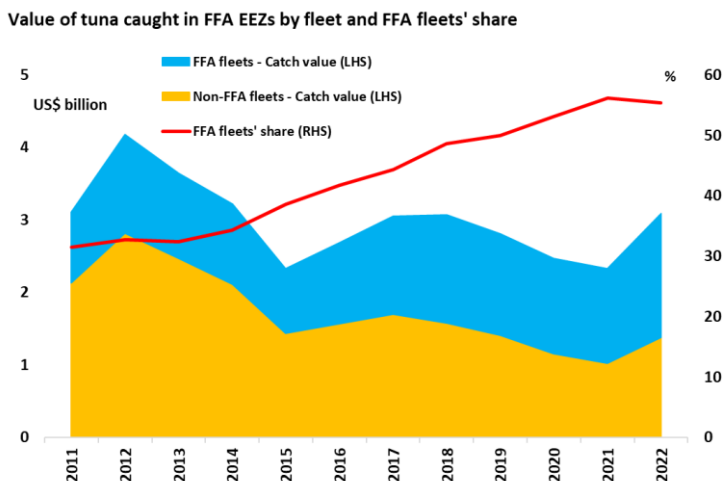
Goal 2 – Value¹

While the Roadmap initially called for a doubling of the value of the region’s tuna catch by 2024 through increases in prices rather than volumes, the Taskforce specified three target areas: the value of foreign access; the value of

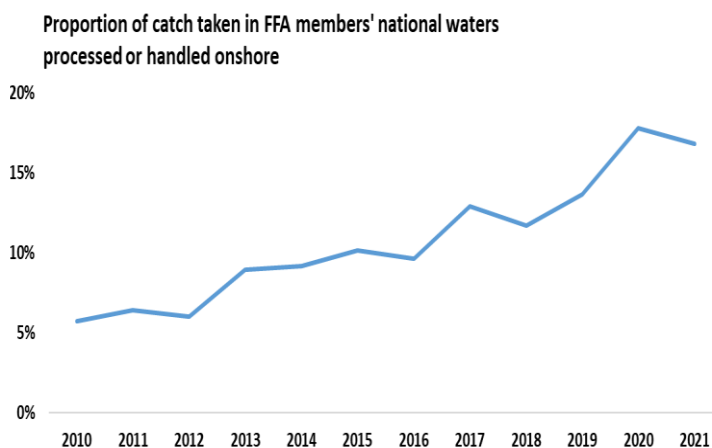
¹ In addition to the indicators presented in this section, the Taskforce also set a target of a “25% increase in value of fishing to GDP” over 5 years. Earlier editions of the Report Card have provided estimates of the contribution to tuna harvest sector to GDP (value added). However, the rapid growth of the fleet based in FFA member countries and the difficulty in assessing the location of the economic center of interest of these vessels led to concerns about the accuracy of the approach previously employed and this has now been discontinued.

fishing to GDP; and the proportion of catch value taken by FFA Island Member fleets. The target set in each of these areas was for a 25% increase over 5 years, with these indicators designed to reflect both increased economic returns and increases in coastal State control of the fishery.

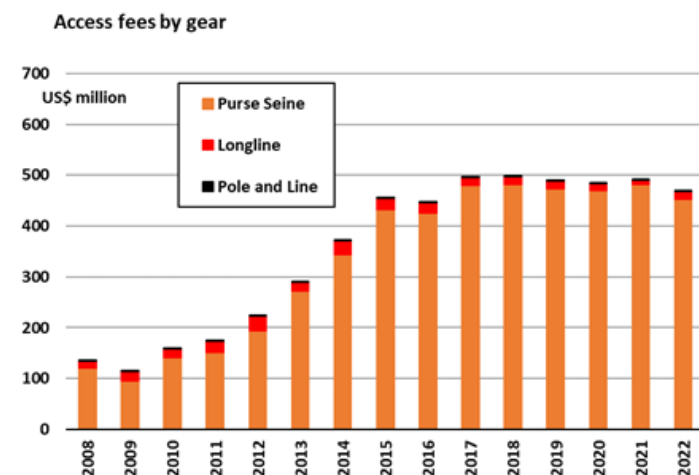
The share of the catch value taken by FFA members' fleets (includes flagged and chartered vessels) within the waters of FFA Members continues to have increased in recent years as vessels reflagged to FFA members. In 2021 the share of the catch value taken by FFA members' fleets within their national waters stood at 55% up from 39% in 2015. While this was down marginally from 56% in 2022 the value of the catch taken by FFA members' fleets within their national waters at \$1.7 billion was the highest on record. In 2021 for the longline fishery this share was 70%, the highest level since at least 1997 despite a decline in catch levels with the increase being driven by a significant fall in the catch taken by foreign longline fleets. For the purse seine fishery 54% of the value of the catch taken in FFA members' waters was taken by their fleets in 2021. Similarly, across the WCPFC-CA, the share of the catch value of FFA members' fleets increased from 24% in 2015 to 31% in 2021. For the longline fishery this share was 20% while for the purse seine fishery it was 45%.



The volume of tuna processed or handled onshore tuna (round weight) increased by more than 50% between 2015 and 2021 reaching over 245,000mt. This increase continues the upward trend in the percentage of tuna caught in FFA member waters that is processed or handled onshore, which reached 17% in 2021. Developments in recent years include the commencement of operations at the Sino Van fisheries plant in Vanuatu and at the Dayang Seafoods plant in Kosrae, FSM. Another development was the transfer of PAFCO's ownership in Fiji from Bolton to FCF, resulting in more FCF vessels offloading their catches in Levuka and increased production in 2020.



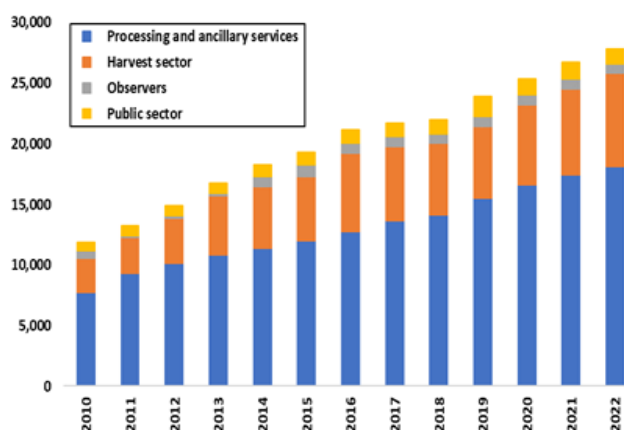
In 2022, government revenues from license and access fee revenue collected by FFA member governments is estimated at \$469 million, a 4% decline from the previous year and 6% lower than for 2018 when access fee revenues peaked at \$497 million. After a decade of rapid growth, access fee revenue has been relatively stable since 2017 ranging from \$469 to \$497 million. While the Taskforce's target of a 25% increase in government revenue from access and licensing fees was not achieved it is important to note that for the purse seine fishery, which provides the overwhelming majority of these revenues, the rate of return (access and licensing fee revenue as a percentage of the value of the catch) in 2015 was in excess of 20% and that a similar rate of return continues to be achieved. This rate of return compares favorably with that earned in other global fisheries. It is also worth noting that a number of factors have likely placed downward pressure on access fees in recent years, including relatively low fish prices, significant operational and supply chain distributions resulting from the implementation of COVID-19 mitigation measures and the increase in the



proportion of fishing activity undertaken by national fleets which typically pay lower unit access fees than foreign fleets. Given these factors the ability of members to maintain purse seine access fee revenues demonstrates the resilience of the PNA purse seine Vessel Day Scheme (VDS).

Goal 3 – Employment

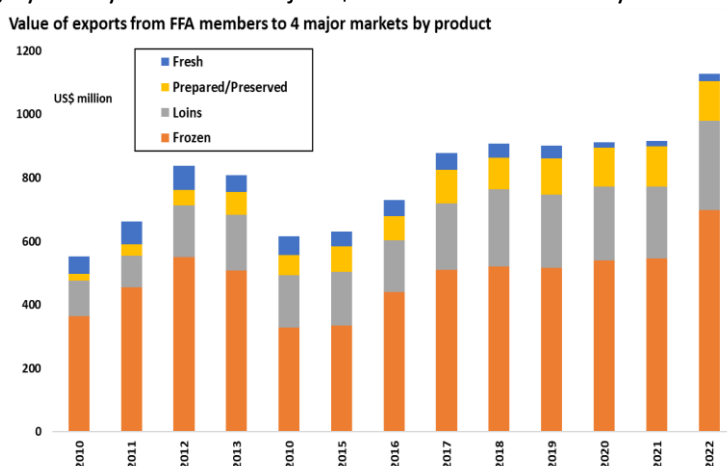
Total employment related to tuna fisheries in FFA member countries for 2022 was estimated at 27,803, up 44% from 2015 and 4% from the previous year. Since 2010, employment has increased steadily with the onshore processing sector contribution most to this increase and accounting for around 60–70% of all employment in the tuna fisheries. Around 18,099 people were employed in the onshore processing sector in 2022, a rise of 4% from the previous year while the harvest sector represents the second largest contribution, estimated at 7,736(28%). Observers and the public sector contribute around 3% and 4% of total employment respectively. About 70% of all tuna processed or handled onshore in 2022 occurred in PNG, which employs the majority of persons working in the sector. In the same year, around 13% of processing employment was in the Solomon Islands and 9% in Fiji. The Taskforce report also noted the need to ensure decent working conditions for those employed in the fisheries sectors. In a ground-breaking step, Regional Minimum Terms and Conditions (MTCs) of employment for vessel crews were agreed by FFC Ministers in 2019, with Members to make best endeavours to give domestic effect to the new conditions by 1 January 2020. To date three Members have completed implementation through regulations or amendments to licensing conditions, while two members are expected to shortly complete implementation and others are continuing to progress this work. Covid related restrictions undoubtedly impacted the progress of this work at national level. Work also continues through the WCPFC to finalise a Conservation and Management Measure on crew safety and labour standards for fishing crew.



Note: Employment figures represent workers associated within the tuna fisheries sector that include both governmental and industrial sectors.

Trade and Investment

The Taskforce proposed new initiatives to stimulate trade and investment in tuna products. It suggested that growth in export values could be used to measure progress with a goal of a 25% increase over 5 years. Estimates of **export values** from FFA member countries are based on import data from the major export destinations for tuna from the region (Thailand, US, EU and Japan). Between 2015 and 2022 the value of exports to the four major markets increased by over 50% to reach \$1.12 billion with the target set by the Taskforce of a 25% increase between 2015 and 2020 significantly exceeded. The value of exports to these markets in 2022 (\$915 million) was 23% higher than in 2021. However, the story across each of the product types is mixed. Fresh exports, which have been on a declining trend over the last decade, collapsed in 2020, falling by nearly two thirds to just \$17 million. This initially occurred as a result of disruptions to supply chains as COVID and associated mitigation measures took effect. While there has been some recover with fresh they are still significantly below pre COVID levels as vessels have been reconfigured toward supplying frozen rather than fresh product. By contrast, exports of loins have increased rapidly in recent years and reached \$281 million in 2022 following a 25% year on year increase. Similarly, the value of frozen exports, which are dominated by whole round frozen product landed in Thailand, have also increased significantly in recent years (up 28% in 2022) as vessels reflag to FFA Members.



Goal 4 – Food security

The Roadmap laid out a challenge to ensure an additional 40,000mt of tuna will be available for regional consumption in 10 years. However, due to a lack of baseline data, it is difficult to assess the degree to which this has been achieved. Given this, a number of studies have been conducted in recent years in order to assess how much tuna enters local markets for domestic consumption. These studies covered three areas:

- a) Canned (mainly dark meat) tuna which is produced by local and overseas canneries and supplied to Pacific Island Countries. This study indicated the importance of canned tuna to local markets in some members, with annual consumption in the region's three largest countries ranging from 2,600 tonnes (Fiji), through to 3,000 tonnes (Solomon Islands) and 3,300 tonnes (PNG) – equivalent to 22,000 tonnes of whole tuna in total.
- b) Landings from local and locally based purse seine, pole and line, and longline fishing vessels which are provided for local consumption, rather than being processed and/or exported; as well as fresh and frozen fish products supplied from processing plants. This study estimated that in 2016 around 29,000mt of the catch of locally based fleets in the region entered local markets, which is equivalent to only 0.8 % of the total catch taken by these vessels. However, for some FFA members a significant proportion of the catch of locally based commercial fleets is supplied to local markets. For example, in 2016, this proportion was estimated at 95% for the Cook Islands, 33% for Samoa, 25% for Tonga, and 8% for Palau.
- c) Purse seine and longline by-catch landed from foreign vessels during transshipment operations. This study estimated potential landing volumes from transshipment operations in 2016 of at least 10,000mt across the region, and possibly considerably more. However, it was noted that only a small proportion, around 3,300mt, of the potentially available resource was entering local markets. The study further noted that this potential food resource is temporally variable in each country, as transshipment location is significantly influenced by the El Niño Southern Oscillation (ENSO) cycle. It also found the high volumes associated with transshipment have the potential to overwhelm local supply chains and compete with artisanal and locally-based commercial fisheries if not well managed.

A report titled *Policy Options to Increase the Contribution of Tuna Fisheries to National Food Security Across FFA Members* was provided to Members in October 2022 and also presented at the Regional Meeting on Climate Change in the Context of Tuna Fisheries held in April 2023 and the FAD and Food Security Workshop held in November 2023. This report investigates options across three broad areas: increasing the availability of tuna, a livelihood approach to improving food security, and increasing consumption and equity. Funding to assist Members to implement national programs and policies with regard to increasing the contribution of tuna fisheries to food security is available through the Pacific Islands Regional Oceanscape Program for Economic Recovery and Resilience (PROPER) and OFMPIII projects.

National level economic and development indicators

The table below provides a summary of average annual outcomes over the period 2020-2 of a number of key economic and development indicators for individual FFA members, highlighting both the diverse nature of their tuna resource endowments and the benefits they derive from the fishery.

	Value in US\$ million				Processed or handled onshore (mt) ^b	Employment
	Tuna catch in national waters	Tuna catch by national fleet	Tuna Exports ^a	Tuna fishery access and licences fees		
Cook Is.	44	11	1	6	130	80
Fiji	38	54	95	2	41,744	3,315
FSM	327	285	154	70	39,656	941
Kiribati	505	328	78	113	1,213	1,006
Marshall Is.	111	147	61	32	13,450	1,120
Nauru	184	163	110	44	0	376
Niue	0	0	0	1	0	4
Palau	7	0	0	8	0	34
PNG	928	301	243	119	111,942	14,282
Samoa	6	10	0.01	1	4,381	332
Solomon Is.	250	105	68	38	28,052	3,600
Tokelau	22	0	0	11	0	8
Tonga	8	2	0.43	1	2,525	293
Tuvalu	120	43	27	31	0	123
Vanuatu	23	131	124	2	1,603	1,132
Total	2,574	1,581	963	481	244,696	26,646

Notes: a. Based on import data from the 4 major export destinations for tuna from the region (EU, Japan, Thailand and USA) and exports to other countries provided in the UN Comtrade database. Includes catch by nationally registered vessels that may not have been landed onshore. b For 2019-2021

This report was produced by the Forum Fisheries Agency (FFA) in collaboration with the Pacific Community (SPC).