



REPUBLIC OF KIRIBATI

FISHING LICENSE REVENUES

IN KIRIBATI

2018-2022 Report

Ministry of Fisheries and Marine Resource Development and Ministry of
Finance and Economic Development

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Acronyms

EEZ	Exclusive Economic Zone
FAD	Fish Aggregating Device
FFA	Forum Fisheries Agency
FIMS	Fisheries Information Management System
iFIMS	Industry Fisheries Information Management System
MFED	Ministry of Finance and Economic Development
MFMD	Ministry of Fisheries and Marine Resources Development
PAE	Party Allowable Effort
PMU	Police Maritime Unit
PNA	Party to Nauru Agreement
TAE	Total Allowable Effort
VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WCP-CA	Western Central Pacific Convention Area

1 Background and Introduction

This report is the sixth review and a joint publication on fishing revenue carried out by the MFMRD and MFED with support from FFA. The objective of this review, like past reports, is to continue monitoring fishing revenue trends in Kiribati and to ensure that fishery is delivering optimal sustainable value.

It should be noted that this is the first review report consolidating fishing revenue data from 2018 to 2022, following the absence of published reports since 2017. An agreement was reached between MFMRD and MFED that the 2023 report will encompass fishing revenue from five-year period.

The report is built on previous report format touching on (i) update and summary of fishing revenue, (ii) catch volume fished in Kiribati's EEZ, (iii) fish price, (iv) multilateral and bilateral fishing arrangements and (v) future projections and outlook. Data used in the report is sourced from MFMRD, MFED and FFA datasets.

The total estimated delivered value of catch in the WCPFC-CA in 2022 rose to US\$5.95 billion, that is, a 17% increase from 2021 level¹, while the tuna caught within the FFA EEZ is valued at 3.1 billion or approximately 30% of global catch.

From 2018 to 2022, Kiribati recorded the second highest volume of catch fished in its waters averaged around 408,543mt. This is second to Papua New Guinea average catch of 485,122mt over the same period. . Catch volume in Kiribati EEZ represents 27% of the total average catch in FFA waters and 15% in the WCP-CA. In 2022 alone, catch fished in Kiribati EEZ was 236,661mt, representing 15% of the catch in the FFA EEZ and 9% in the entire WCP-CA.

Fisheries, in particular tuna, remain an important source of economic driver for Kiribati apart from its traditional role in sustaining community livelihoods and food security.

2 Overall Fisheries Revenue Trends

This section discusses the following key drivers of fisheries revenue trend such as total revenue, catch volume, tuna price and changes in revenue as a proportion of the market catch value. Since adoption, the VDS has remained a crucial source of income for the government and plays a significant role in enhancing economic performance, especially through fishing licenses.

2.1 Total Revenue

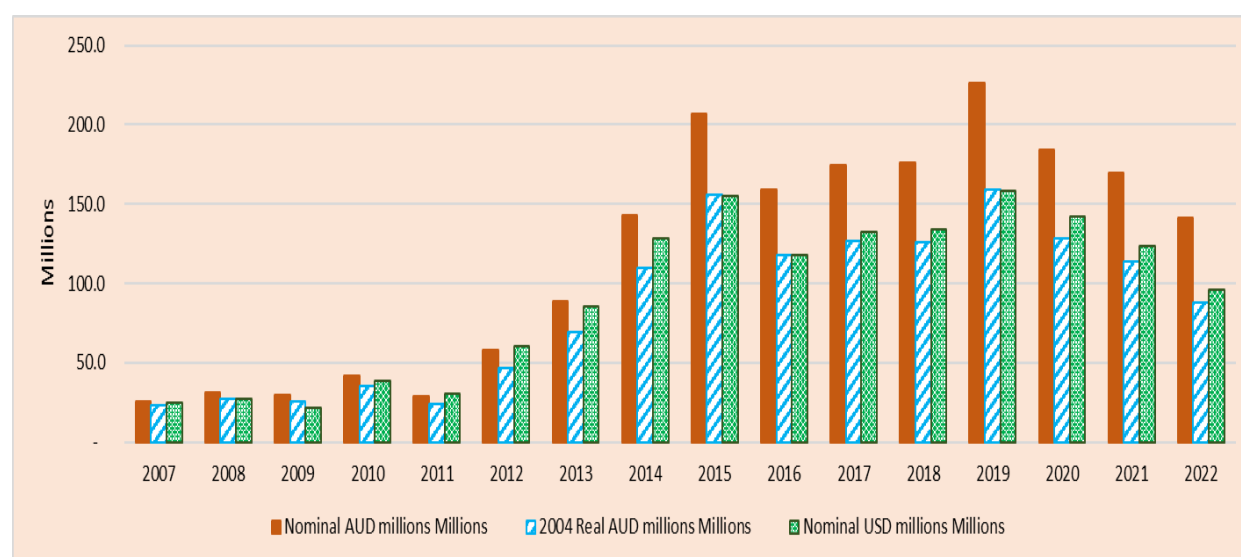
Fishing revenue remains the primary source of income for the Government of Kiribati, accounting for 71% of total government revenue in 2018. Since the implementation of the VDS, there has been a significant increase in fishing revenue, primarily from VDS fees, licenses, registration, and transshipment taxes. Notably, the adoption of the VDS has led to an increase in government revenue from fishing, despite some volatility, with annual figures fluctuating between AU\$100 million and AU\$150 million, as shown in Figure 1.

¹ WCPFC20-2023-IP03_Overview of WCPO tuna fisheries

Fishing revenue peaked in 2019, reaching AU\$219 million, a record that surpassed the previous record of AU\$206 million in 2015. Although there was a decline in revenue between 2016 and 2018, the average remained above AU\$150 million. High fishing revenues are often associated with El Niño conditions, while La Niña conditions tend to have the opposite effect.

Since 2019, fishing revenue has seen a continuous decline from 2020 to 2022, driven by several concurrent factors. The COVID-19 pandemic was the first major impact, followed by the war in Russia and Ukraine, which disrupted energy supplies and pricing. Climate conditions also play a significant role in shaping oceanic environments, particularly through the El Niño-Southern Oscillation (ENSO) phenomenon, which affects the distribution and abundance of tuna within the waters of FFA members. The different phases of ENSO—El Niño, La Niña, and neutral conditions—alter sea surface temperatures, currents, and nutrient dynamics, influencing tuna biomass and migration patterns. As climate change intensifies, it may exacerbate the frequency and severity of ENSO events, further impacting tuna populations and posing additional challenges for fisheries management in the region. These factors have greatly influenced the downward trend in fishing revenue after 2019, demonstrating the high volatility of this sector due to external influences and underscoring the importance of effective risk management in maintaining revenue stability.

Figure 1. Total Fishing Revenue (Excl. Development Fund), Kiribati, 2007 - 2022



Sources: MFED, RBA, ABS

Table 1: Total Fishing Revenue (Excl. Development Funds), Kiribati, 2007-2022

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Nominal AUD millions	25.4	31.2	29.5	41.7	29.1	58.3	89.0	143.1	207.1	158.8	174.7	176.3	226.5	184.1	169.4	141.0
2004 Real AUD millions	23.3	27.6	25.5	35.1	23.7	46.6	69.2	109.4	155.7	117.7	127.0	126.0	158.9	128.0	113.8	87.9
Nominal USD millions	25.1	27.5	22.0	38.4	30.3	60.6	85.4	128.6	155.3	117.5	132.8	134.0	158.6	141.7	123.6	95.9

Sources: MFED, RBA, ABS

While the PNA countries have generally experienced consistent economic growth due to the VDS, for nations like Kiribati, fishing revenue holds particular importance. In Kiribati's EEZ, revenue from the purse seine VDS accounts for over 60% of total annual fishing revenue, highlighting the critical economic value of this sector.

The proportion of fishing license revenue relative to total revenue has fluctuated, ranging from 70.9% in 2018 to 60.4% in 2022. This marks a decline from a peak of 81.8% in 2015, but it remains historically significant. During this period, fishing license revenue constituted a substantial share of nominal GDP, varying from 58.3% in 2018 to 40.3% in 2022, largely influenced by COVID-19 and other uncontrollable external factors.

Table 2: Total License Revenue as proportion of the Kiribati National Budget 2011-2022

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
License Revenue	29.1	58.3	89.0	142.0	197.8	147.1	169.1	170.2	210.6	170.7	161.4	130.6
Transshipment Revenue	NA	NA	NA	1.0	9.2	11.7	5.3	5.1	14.5	12.0	7.5	9.6
Other Fishing Revenue	NA	NA	0.8	0.1	0.1	0.0	0.2	1.1	1.4	1.3	0.4	0.9
Total Fishing Revenue	29.1	58.3	89.8	143.1	207.1	158.8	174.6	176.4	226.5	184.0	169.3	141.1
<i>as a percentage of total revenue</i>	<i>46.8</i>	<i>63.9</i>	<i>70.8</i>	<i>76.2</i>	<i>81.8</i>	<i>75.2</i>	<i>72.0</i>	<i>70.9</i>	<i>79.4</i>	<i>74.0</i>	<i>65.9</i>	<i>60.4</i>
<i>as a percentage of nominal GDP*</i>	<i>16.5</i>	<i>31.7</i>	<i>46.8</i>	<i>71.8</i>	<i>90.9</i>	<i>66.2</i>	<i>72.1</i>	<i>58.3</i>	<i>72.6</i>	<i>59.3</i>	<i>50.3</i>	<i>40.3</i>
Domestic Revenue**	33.1	33.0	37.0	34.4	41.4	43.8	49.2	58.1	58.3	57.8	84.0	78.3
Budget Support***	0.0	0.0	0.0	10.4	4.8	8.6	18.8	14.4	0.5	7.0	3.5	14.3
Total Revenue	62.2	91.3	126.8	187.8	253.3	211.2	242.7	248.8	285.3	248.9	256.9	233.6

* Numbers changed to reflect revised nominal GDP numbers

** Domestic revenue is total revenue less budget support, less total fishing revenue

*** Numbers changed to reflect actual budget support received by government.

The 2018 Budget adopted a conservative approach to projected fishing license revenues, estimating around AUD 130 million for the year. While this estimate was cautious, it was still higher than the initial budget estimate for 2017. In the subsequent years, fishing license revenue continued to fluctuate, peaking at AUD 210.6 million in 2019 before declining to AUD 170.7 million in 2020, AUD 161.4 million in 2021, and AUD 130.6 million in 2022.

In contrast, the 2022 Budget was more optimistic, projecting fishing license revenues at AUD 193.1 million. However, the actual revenue fell short by 32%, primarily due to unforeseen external factors.

2.2 Catch volume

The trend in tuna catch volume from the Kiribati EEZ mirrors the pattern of fishing revenue, with high catches during El Niño and lower catches during La Niña. The highest recorded catch occurred in 2014, totaling 744,155 metric tonnes, after which there was a decline over three consecutive years.

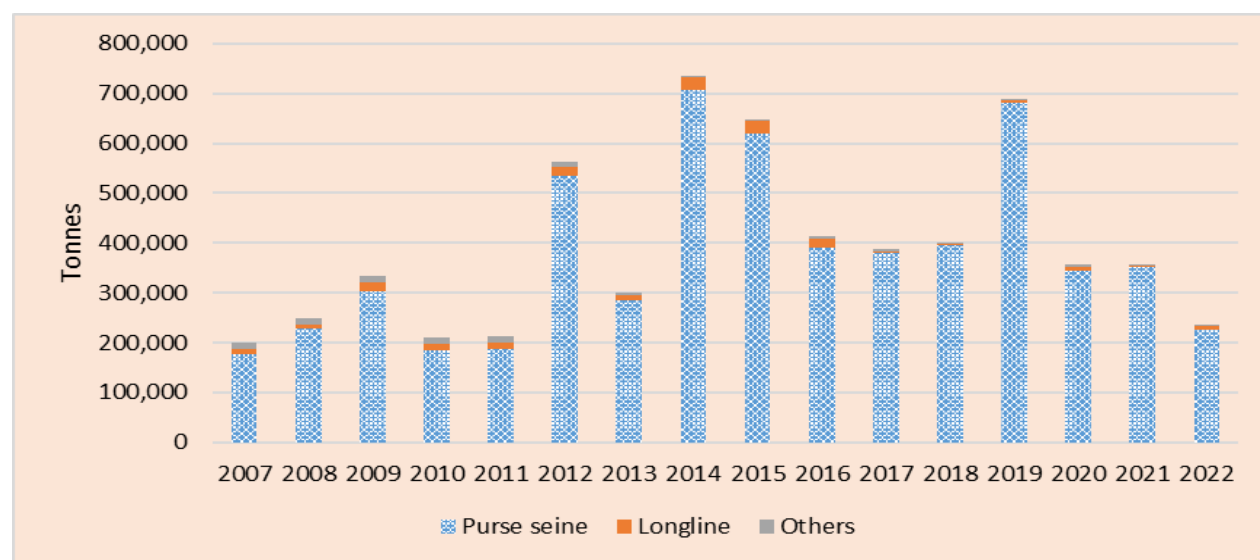
Catches began to recover between 2018 and 2019, increasing by around 40%, but then dropped again in 2020 (356,495 metric tonnes), 2021 (357,967 metric tonnes), and 2022 (236,661 metric tonnes). In 2019, following the onset of El Niño, catches rebounded significantly by 72%, reaching 689,882 metric tonnes, up from 401,709 metric tonnes in 2018. However, this figure still fell short of the 2014 levels, although it was slightly higher than the 2015 catch of 648,784 metric tonnes. In the following years, catches fell to

about 350,000 metric tonnes in both 2020 and 2021, before plummeting further to 236,661 metric tonnes in 2022, marking the second lowest total since 2010 (207,923 metric tonnes).

The average total catch in Kiribati national waters from 2018 to 2022 is at 408,543 metric tonnes. The majority of the catch came from the purse seine fishery, accounting for 399,941 metric tonnes or 98% of the total catch. This is compared to 4,242 metric tonnes (1%) from longline fishing and 4,359 metric tonnes (1%) from other fisheries. In terms of species composition, skipjack tuna dominated the purse seine catch at 328,291 metric tonnes (80%), followed by yellowfin (59,850 metric tonnes, 15%), bigeye (19,271 metric tonnes, 5%), and albacore (1,131 metric tonnes, 0.3%). Yellowfin, Bigeye and Albacore are targeted species by longline however they also constitute a significant portion of the purse seine fishery catch.

In 2019, Kiribati's waters remained the most productive tuna fishing zone in the WCP-CA. In the same year, Kiribati accounted for 23% of the total tuna catch in the WCP-CA, down from 26% in 2014, when the overall catch was at its peak. Between 2018 and 2022, the average catch in Kiribati waters was 408,543 metric tonnes, representing 15% of the total tuna catch in the entire WCP-CA.

Figure 2. Total Catch by Gear, Kiribati, 2007-2022



Source: Secretariat of the Pacific Community

Table 3: Total Catch by Gear (metric tonnes), Kiribati, -2007 - 2022

Gear	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Purse Seine	179,363	227,024	303,636	183,220	198,777	532,848	282,396	714,787	619,161	391,053	379,728	396,512	680,913	345,355	351,254	225,573
Longline	9,052	8,031	15,934	11,545	12,205	16,672	11,541	24,736	25,024	18,207	2,562	838	4,603	6,687	2,354	6,728
Others	12,819	13,190	13,577	13,159	12,602	10,277	5,425	4,632	4,599	4,359	4,359	4,359	4,365	4,453	4,359	4,359
Total	201,233	248,245	333,148	207,923	223,584	559,796	299,363	744,155	648,784	413,619	386,649	401,709	689,882	356,495	357,967	236,661

Source: Oceanic Fisheries Programme, SPC

The Gilbert Islands represent the most productive fishing area for purse seine fishing, while longline fishing is primarily concentrated in the Line Islands. During strong El Niño events, purse seine activities can extend to the easternmost islands of the southern Line Islands.

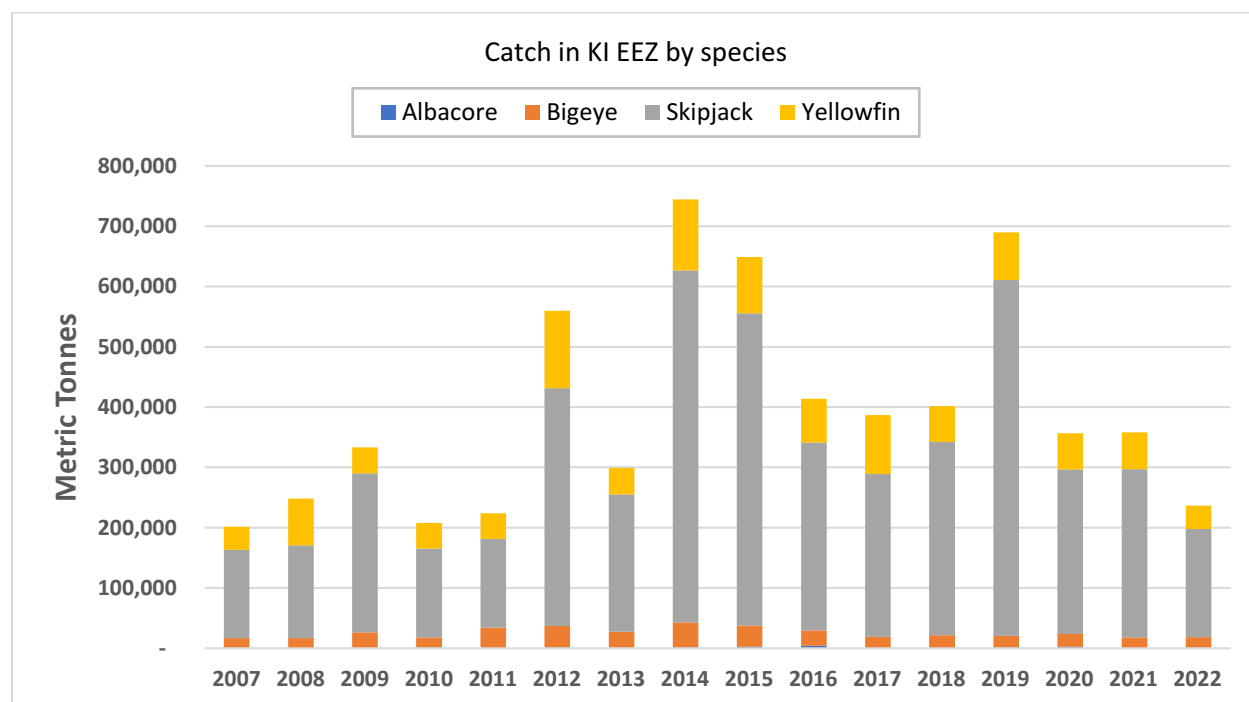
In 2022, the catch within the Kiribati EEZ accounted for 9% of the total Western and Central Pacific (WCP-CA) catch and 15% of the catch in the FFA national waters.

Key Tuna Species:

- **Yellowfin:** In 2019, the catch reached a high of 79,300 metric tonnes, with an average of 59,850 metric tonnes from 2018 to 2022. Yellowfin is the second most dominant species, representing 16% of the total catch, following skipjack, which accounts for 79%.
- **Bigeye:** Catches have fluctuated between 17,000 metric tonnes and 21,000 metric tonnes from 2018 to 2022, peaking at 21,246 metric tonnes in 2018. In 2021 and 2022, catches stabilized at 17,000 metric tonnes. Bigeye is the second least caught species, contributing 5% to the total catch during this period.
- **Albacore:** While not a targeted species, albacore catch increased significantly from just 72 metric tonnes in 2018 to a record 2,701 metric tonnes in 2020. It currently accounts for 0.3% of the total catch. This fishery is still developing but is fished by vessels supplying the Kiribati Fish Ltd processing plant in Betio, Tarawa.

It is important to note that there has been a substantial overall drop in total catch of around 50% since 2019, with a notable decline of 53% in skipjack catches in 2020.

Figure 3. Total Catch by Species (metric tonnes), Kiribati, 2007-2022



Source: Forum Fisheries Agency

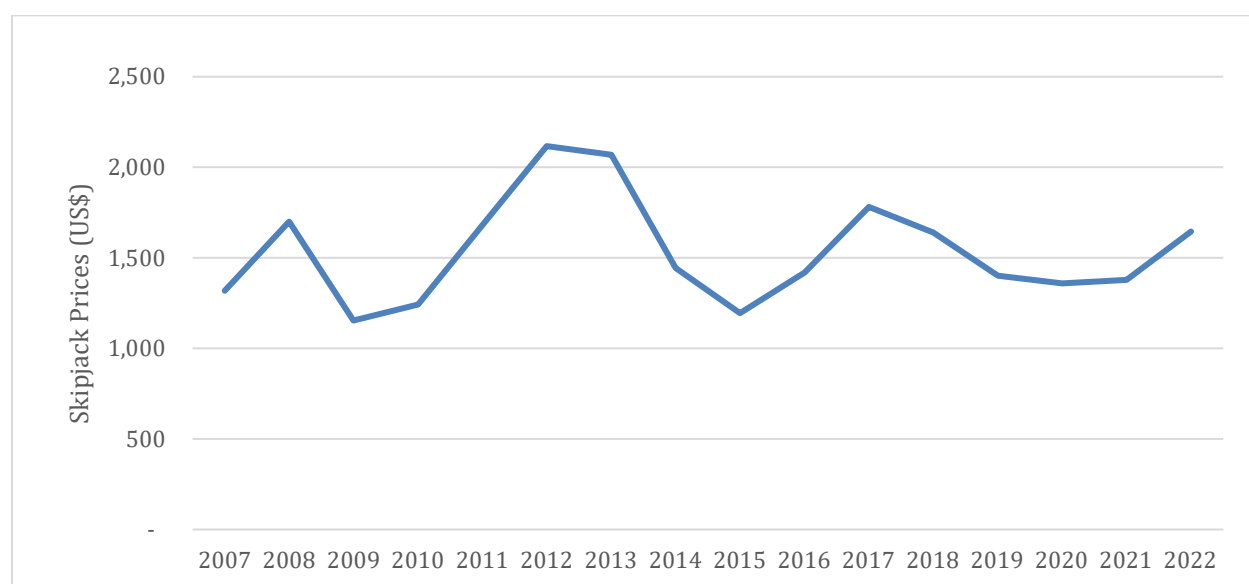
Table 4: Total Catch by Species (metric tonnes), Kiribati, 2007-2022

Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Albacore	679	362	1,123	1,290	550	1,219	819	1,258	2,547	4,276	394	72	1,174	2,701	582	1,124
Bigeye	15,974	16,665	25,292	16,343	33,768	35,634	26,737	41,758	34,732	25,214	18,725	21,246	19,365	21,141	17,535	17,067
Skipjack	146,511	153,602	263,508	147,569	147,054	394,400	227,717	583,808	518,338	311,464	269,759	320,634	590,042	272,645	278,760	179,373
Yellowfin	38,070	77,617	43,225	42,722	42,212	128,544	44,089	117,331	93,168	72,666	97,771	59,757	79,300	60,008	61,090	39,097
Total	201,233	248,245	333,148	207,923	223,584	559,796	299,363	744,155	648,784	413,619	386,649	401,709	689,882	356,495	357,967	236,661

Source: Forum Fisheries Agency

Prices and Catch Values

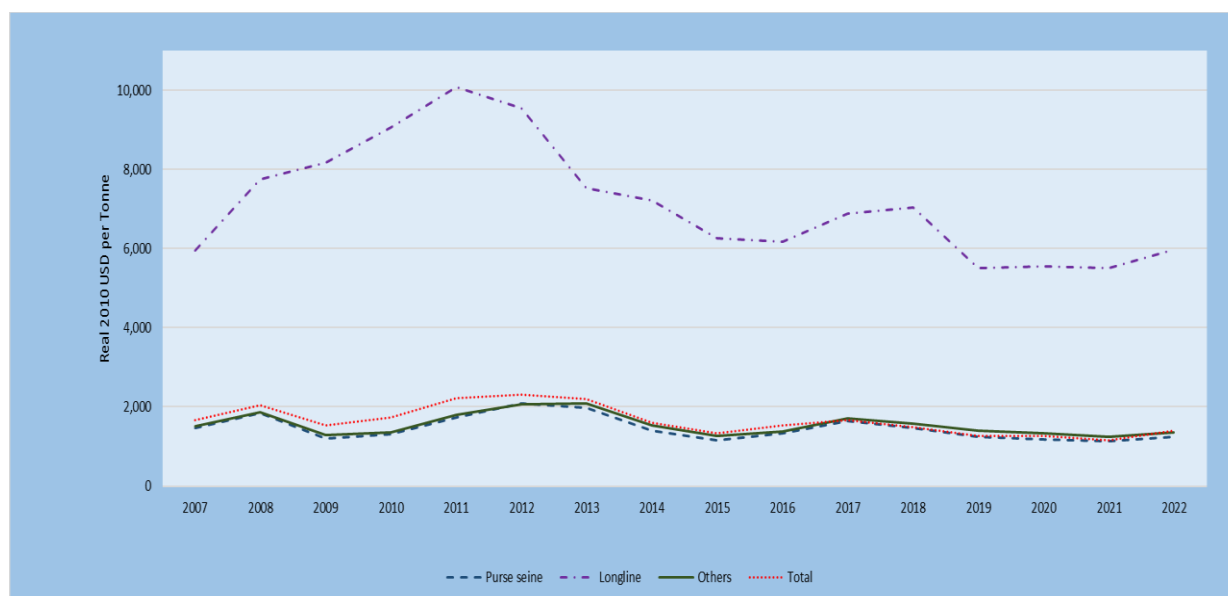
The price of tuna, especially skipjack tuna, directly influences the operations of fishing companies and, consequently, fishing revenue. The increase in fishing revenue between 2009 and 2012 was partly driven by higher skipjack import prices, as illustrated in Figure 4. However, lower prices have been linked to higher catch volumes at major inventory hubs like Bangkok. This combination of lower prices and increased volume has allowed the total value of the catch to remain high.

Figure 4. Skipjack Import Prices (c&) in US\$/mt

Source: Forum Fisheries Agency

The Thai import prices in USD is illustrated in Figure 5 below. The highest value recorded for Skipjack tuna was US\$2,117 per tonne, peaking in 2012. For longline fisheries, both fresh and frozen Bigeye and fresh Yellowfin reached peak values in 2011 and 2012, with prices exceeding US\$10,000 per tonne at major markets and landing sites. Longline fishing consistently achieves the highest value per tonne compared to other fishing methods.

Figure 5. Value of Catch Per Tonne by Gear, Kiribati 2007-2022



Source: SPC, MFED calculations.

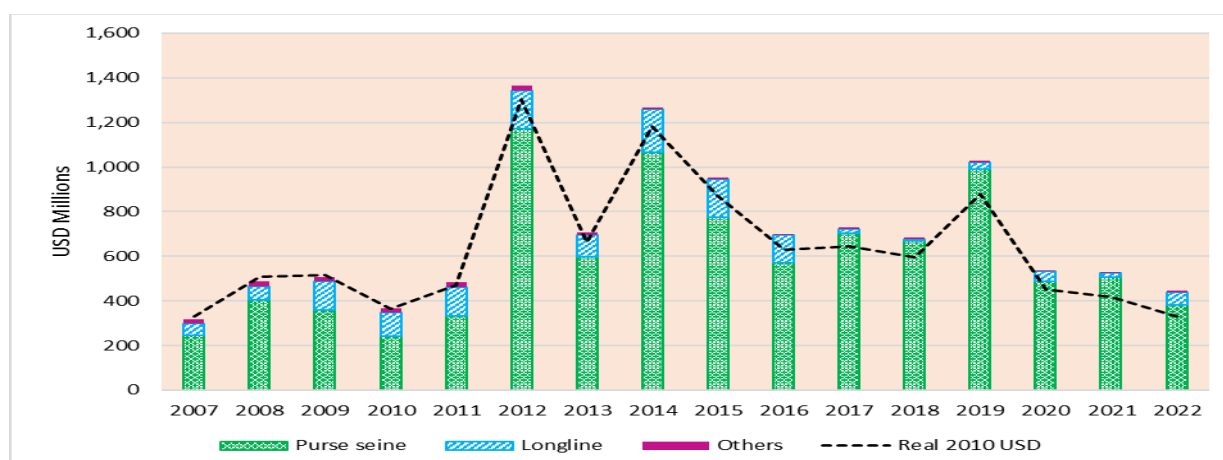
Table 5: Value per Tonne by Gear (Real 2010 USD), Kiribati, 2007 -2022

Gear	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Purse seine	1,390	1,768	1,184	1,303	1,764	2,193	2,100	1,505	1,254	1,458	1,851	1,686	1,456	1,412	1,445	1,699
Longline	5,732	7,438	8,225	8,980	10,493	10,089	8,225	8,002	6,762	6,804	7,736	8,068	6,449	6,586	6,994	8,079
Others	1,462	1,792	1,274	1,350	1,842	2,174	2,212	1,630	1,372	1,515	1,920	1,797	1,649	1,550	1,575	1,821
Total	1,590	1,953	1,524	1,732	2,245	2,428	2,338	1,721	1,467	1,694	1,891	1,700	1,491	1,511	1,483	1,882

Source: Forum Fisheries Agency, World Bank, MFED

The purse seine fishery continues to generate the highest catch value in Kiribati's national waters, with values of US\$1.17 billion in 2012, US\$1.08 billion in 2014, and US\$992 million in 2019. However, there has been a general downward trend since 2012. The longline fishery ranked second with a peak value at US\$198 million in 2014, also following a declining pattern in subsequent years, reaching a low of US\$7 million in 2018. Overall, the total value of the catch has declined 65% from a peak of US\$1.36 billion in 2012 to US\$446 million in 2022.

Figure 6. Total Catch Value by Gear, Kiribati, 2007-2022



Source: Forum Fisheries Agency and World Bank

Table 6: Total Catch Value by Gear, in Kiribati national waters, 2007-2022 (USD Millions)

Gear	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Purse seine	249.30	401.39	359.46	238.75	350.65	1,168.65	592.93	1,075.55	776.16	570.24	702.95	668.48	991.65	487.57	507.42	383.21
Longline	51.88	59.74	131.05	103.67	128.06	168.20	94.93	197.93	169.22	123.88	19.82	6.76	29.69	44.04	16.47	54.36
Others	18.74	23.64	17.30	17.76	23.22	22.34	12.00	7.55	6.31	6.60	8.37	7.83	7.20	6.90	6.87	7.94
Total	320	485	508	360	502	1,359	700	1,281	952	701	731	683	1,029	539	531	446

Source: Forum Fisheries Agency

Value Capture

The Vessel Day Scheme is primarily a management tool established by the Parties to the Nauru Agreement and is implemented in all members' waters when licensing fishing vessels in their waters. Kiribati is a full member of the PNA VDS and have fully implemented the scheme in the early 2010 to license purse seine fishing vessels in its EEZ. While it is being adopted as a fishery management tool, the scheme is independent of price and volume and relying on a charge per day fishing effort in Parties waters.

The adoption of the Vessel Day Scheme (VDS) has led to a significant increase in fishing revenue for the member countries. Between 2005 and 2010, the average fishing revenue prior to the VDS was US\$30 million, with a catch of 229,700 metric tonnes. In contrast, the average government revenue and catch after implementing the VDS increased substantially by 29%, reaching 441,973 metric tonnes. In the post-VDS period, fishing revenue has fluctuated between AU\$100 million and AU\$200 million.

Since 2012, the impact of the VDS on total fishing revenue has improved significantly, enhancing government earnings from access fishing. The VDS has replaced the traditional annual licensing system across PNA countries, and the shift to a per-day charge for fishing efforts has benefited member countries, both in revenue generation and in the overall management of tuna stocks.

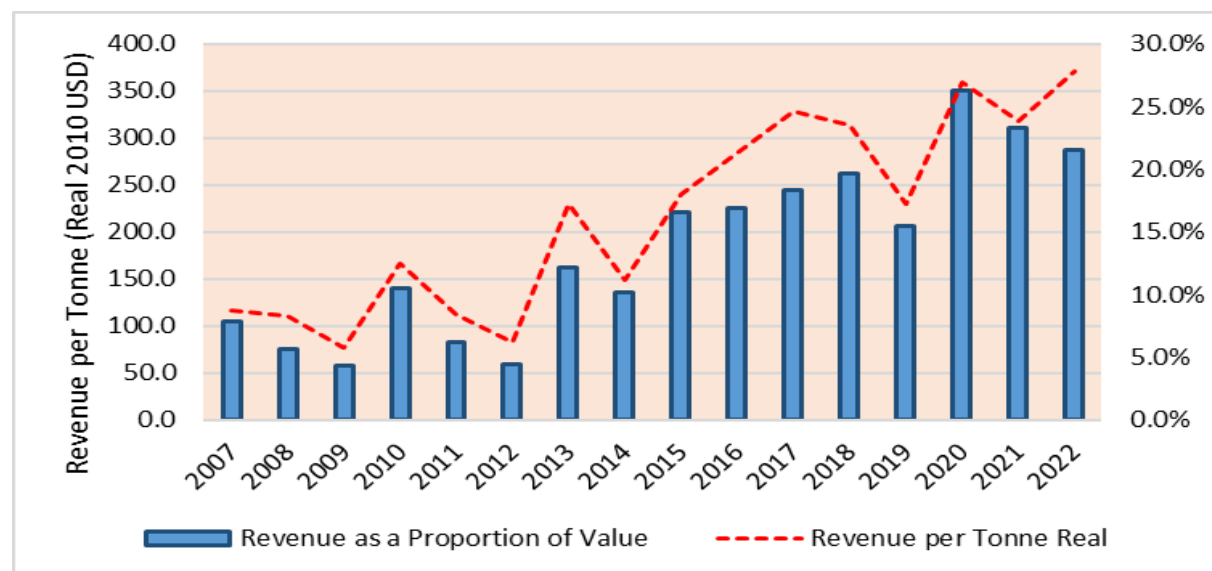
Table 7. Pre and Post VDS – Impact on Revenue and Catch

	Pre-VDS					Post-VDS																
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022				
Fishing license	25.0	25.8	25.4	31.2	29.5	41.7	29.1	58.3	89.0	141.6	197.8	143.3	169.1	170.2	210.6	170.7	161.4	130.6				
Total Catch	212,500	176,407	201,233	248,245	333,148	207,923	223,584	559,796	299,363	744,155	648,784	413,619	386,649	401,709	689,882	356,495	357,967	236,661				
Average fishing license					27.4													131.8				
Average total catch					234,307													425,122				

Source: MFED, FFA

Under the scheme, fishing vessels seeking to operate in PNA waters are charged by the respective country at a rate equal to or above the minimum benchmark price set by the PNA, currently at US\$8,000 per day. This benchmark was initially set at US\$5,000 per day in 2011 but has gradually increased following discussions and reviews by PNA officials and approval by their ministers. Charging above the benchmark price is one key factor contributing to the significant increase in fishing revenue observed by the parties, including Kiribati. Most member countries now charge above the US\$8,000 benchmark, and since 2010, fishing revenue has risen dramatically, increasing by 363% by the end of 2022.

Figure 7. Revenues as Proportion of Value and Per Tonne, Kiribati, 2007-2022



Source: MFED, MFMRD and FFA.

Table 8: Revenues as a Proportion of Value and Per Tonne, Kiribati, 2007-22

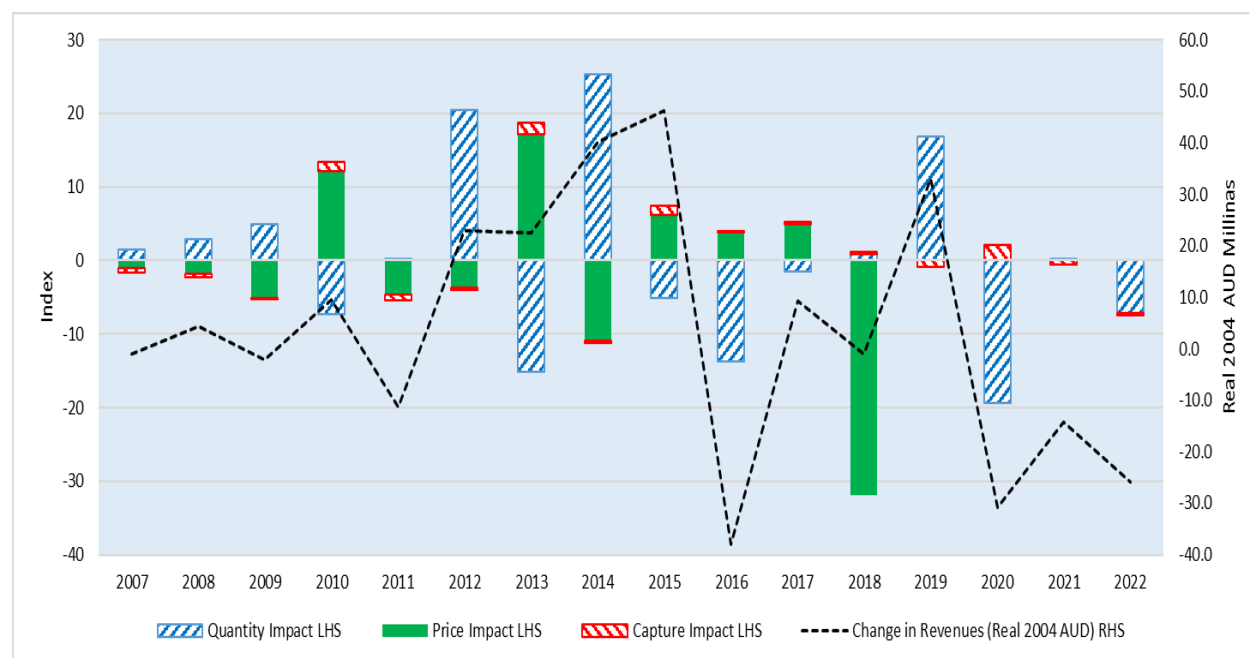
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenue as Proportion of Value	7.9%	5.6%	4.3%	10.5%	6.2%	4.4%	12.1%	10.2%	16.5%	16.9%	18.3%	19.6%	15.4%	26.3%	23.3%	21.5%
Revenue per Tonne Real	116.7	110.6	76.4	167.0	111.9	83.0	229.6	148.5	240.0	284.5	328.4	313.5	230.3	359.1	317.9	371.3

Source: MFED, Forum Fisheries Agency

From 2013 to 2019, there was a noticeable upward trend in revenue as a proportion of value, indicating improved efficiency and profitability in revenue generation. A significant spike occurred in 2020, marking a peak in the proportion of revenue. This spike may be attributed to external factors such as market changes, economic conditions, or specific industry events. Following 2020, the proportion remained high,

with a slight decline in 2021, but it increased again in 2022, suggesting a recovery or further improvement in revenue performance.

Figure 8. Drivers of Revenue Growth (Index measure), Kiribati, 2007-2022



Source: MFED, and Forum Fisheries Agency

3 International and Regional Agreements

Membership and participation in major international, regional, and subregional fisheries organizations is crucial for Kiribati, given its reliance on highly migratory species like tuna for sustenance, livelihoods, and economic growth.

Kiribati is currently a member of five key fisheries forums: the WCPFC, IATTC, FFA, SPC, and PNA. These memberships are essential not only for the ongoing management of key tuna and billfish stocks, which are vital for the country's social and economic well-being, but also for providing a platform to voice, consider, and address national concerns through a consensus process. Although each organization has distinct functions, they all work towards the long-term sustainability of marine resources through binding conservation management measures enforced by Monitoring, Control, and Surveillance (MCS) regulatory frameworks and tools.

The FFA promotes regional cooperation and solidarity, offering legal, technical, and economic support to help develop fisheries policies for its members, build national capacity, and assist with MCS for the sustainable management of tuna in the Pacific. The SPC serves as the regional center for fisheries research, stock assessment, and data management related to tuna and billfish fisheries, providing scientific advice to the FFA, PNA, and WCPFC.

The WCPFC is one of the Regional Fisheries Management Organizations (RFMOs) responsible for the management and conservation of tuna stocks within the Western and Central Pacific Ocean (WCP-CA), including the management of high seas. In contrast, the IATTC focuses on the conservation and management of tuna stocks and other non-tuna species in the Eastern Pacific Ocean (EPO).

Kiribati is also an active member of the subregional body, PNA, which comprises eight Pacific nations that rely heavily on tuna resources. Collectively, these countries control a significant 25% to 30% of the world's tuna supply and approximately 60% of the tuna supply within the WCP-CA. The PNA members include the Federated States of Micronesia, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, the Solomon Islands, and Tuvalu, while Tokelau participates in the PNA Palau Arrangement.

The PNA has been recognized for its successful implementation of the Vessel Day Scheme (VDS), which has generated increased revenue for its members, including Kiribati. Since 2014, the return value of the VDS has risen from US\$344 million to US\$467 million in 2022, although the average economic value has remained stable at around US\$500 million since 2017. The PNA's fisheries conservation and management strategies are considered world-class and have received acknowledgment at the WCPFC level. These strategies include high seas closures, controls on Fish Aggregating Devices (FADs), 100% observer coverage in the purse seine fishery, and the VDS.

3.1 Vessel Day Scheme

PNA members are required to fully implement the Vessel Day Scheme (VDS), which was established with key objectives aimed at conserving tuna resources, making access to fishing rights scarce and valuable, increasing fishing revenue, and enhancing domestic opportunities and benefits within the tuna industry.

The VDS operates by setting overall limits on the number of days purse seine fishing vessels can operate in PNA waters or the Total Allowable Effort (TAE). The TAE is allocated to member countries based on zonal biomass and historical fishing effort, known as the Purse Seine Annual Effort (PAE). Each member receives its annual PAE, which is then sold to fishing fleets for operations in their Exclusive Economic Zones (EEZs). Fishing days are monitored through a satellite-based Vessel Monitoring System (VMS), supported by deployed observers on all licensed vessels. Members can manage their respective PAEs using a system called FIMS, while the fishing industry utilizes iFIMS. Additionally, the VDS features a trading mechanism that allows parties to trade fishing days among themselves to accommodate shifting fishing behaviors.

The scheme has significantly advanced the revenue generation of PNA member countries compared to pre-VDS periods, with total revenue increasing from US\$141 million in 2010 to US\$467 million in 2022. Although there has been no recent decision to change the minimum benchmark fee from US\$8,000 per day, many distant water fishing nations are paying considerably more than this benchmark to secure fishing days in the lucrative waters of the PNA. The PNA PAE was set at 44,033 days in 2021, which will also serve as the provisional PAE for 2022 and 2023. Kiribati has successfully managed its fishing efforts and remained within its allocated PAE.

Regarding the Longline VDS, Kiribati was initially the only PNA member not to sign up when the scheme was first introduced for managing longline fisheries, particularly for the struggling Bigeye tuna stock. Instead, Kiribati opted to trial a catch-based management system. Recognizing that such a system requires

robust monitoring and investment at the national level, Kiribati decided to join the PNA Longline VDS in 2019, temporarily suspending the catch-based management approach until the system is fully developed.

3.2 Other Agreements

Kiribati has established bilateral access agreements with distant water fishing nations and actively maintains these relationships through annual consultations and the renewal of fishing agreements. The majority of fishing companies with bilateral agreements with the Government of Kiribati are from Asia, including individual operators and fishing associations from Korea, Japan, Taiwan, and China, with a few from the Philippines.

Additionally, Kiribati has fishing agreements with countries like the United States, where vessels are licensed under a multilateral treaty administered by the Forum Fisheries Agency based in Honiara. The new U.S. treaty is set to be renewed, extending the agreement for another 10 years. Under this renewed treaty, total U.S. contributions have increased from US\$21 million to US\$60 million, providing a boost in revenue for Pacific Island nations starting in 2024.

Furthermore, Kiribati recently renewed its fishing agreement with the European Union in 2023, following a period of stalled negotiations since 2017 over the application of the VDS to the EU fleet. After extensive discussions, both sides reached a common ground, allowing for the adoption of the VDS as the basis for licensing EU purse seiners operating in Kiribati waters. The new protocol also includes financial support for the fisheries sector.

Table 9 below illustrates the total revenue received from agreements with the United States under the multilateral treaty and other fishing partners in 2017. The revenue from these agreements is measured in terms of vessel fishing days.

Table 9: Fishing Agreements 2017

Agreement	Catch (Tonnage)	Licence (US\$)	Development (US\$)	Total revenue (US\$)	Revenue/Tonnage (US\$)
US (inc UST)	48,938	4,900,000	-	4,900,000	100.13
Other	386,469	1,297,000	1,400,000	2,697,000	6.98
Total	435,407	6,197,000	1,400,000	7,597,000	107.11

Source: MFMRD

It is important to highlight that overall, the revenue received per tonne of catch from all agreements remains significantly higher compared to the figures from 2014. As mentioned earlier, revenue from the EU and the U.S. saw a substantial decline in 2016 due to the absence of licensed vessels from these fishing partners in 2017.

4 Revenue Projections

The volatility of fishing revenue presents significant challenges for revenue projections. Fluctuations in global markets, shifts in fish stocks due to climate change, and global events like the COVID-19 pandemic play crucial roles in influencing fishing revenue levels over time. Additionally, factors such as changes in fisheries policy, stock status, and a declining number of licensed vessels each year also affect government revenue collection from fishing.

From 2018 to 2022, estimated revenue projections remained relatively stable on average. However, these estimates are marked by uncertainty due to the extreme volatility experienced in the fishing industry, driven by ongoing external factors impacting operations and profitability.

4.1 El Niño Southern Oscillation

One of the external factors affecting fishing revenue is the climate phenomenon known as the El Niño Southern Oscillation (ENSO). This irregular natural event is associated with warmer waters in the central Pacific. In the Western and Central Pacific Ocean (WCPO), tuna stocks tend to move eastward and become more abundant during El Niño periods. For Kiribati, El Niño results in increased rainfall, more abundant fish stocks attracted to the warmer seas, and consequently higher fishing revenue. The El Niño event in 2019 led to intense fishing activity in Kiribati's waters, resulting in a significant increase in revenue, with 2019 marking the highest fishing revenue recorded.

4.2 Phoenix Islands Protected Area

The Phoenix Islands Protected Area (PIPA) was established to safeguard both terrestrial and marine resources within the Phoenix Islands. The closure of the PIPA area accounts for an 11% reduction in commercial fishing activity within Kiribati's EEZ. As the largest designated Marine Protected Area in the world, PIPA aims to conserve fish stocks and maintain biodiversity, earning its designation as a World Heritage Site in 2010 and being recognized as a “superlative natural phenomenon of global importance.”

This closure has reduced the available fishing area, making Kiribati's waters less appealing to traditional fishing partners. However, the Ministry of Fisheries and Marine Resources Development (MFMRD) has continued to pursue revenue growth through transshipment fees and penalties. In March 2023, the Government issued a notice to reopen PIPA for commercial fishing. By enhancing monitoring and compliance efforts to combat illegal, unreported, and unregulated (IUU) fishing, in collaboration with the Pacific Marine Unit (PMU), MFMRD collected an average of AU\$1.5 million in penalty fees from 2017 to 2019. In 2021, an additional AU\$309,000 was collected for IUU fishing, bringing the total revenue from IUU-related penalties to AU\$4.9 million between 2017 and 2022.

4.3 Conservation of tuna stocks

The SPC 2023 latest stock assessment study indicates that all four WCPFO tuna stocks (South Pacific Albacore, Bigeye, Skipjack and Yellowfin) are biologically healthy, not overfished nor is overfishing occurring. However, note that this does not mean that the associated fisheries for particular stock species are performing well, or the desired management outcomes are being achieved for there are species that

need constant monitoring due to their likelihood to decline further in the short term if catch levels are not closely monitored and adjusted to avoid falling below their limit reference points.

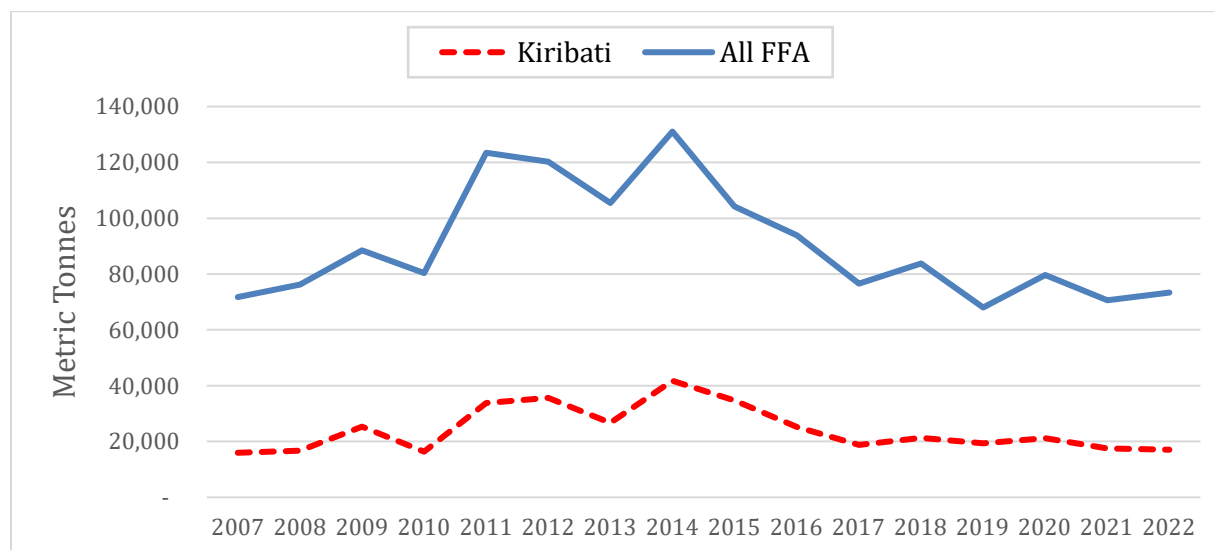
By comparison with other oceans, the WCPO is the only ocean where all four major stocks are in the healthy zone, however there is no room for complacency with the biomass of most stocks projected to continuing to decline and the need to address existing gaps in the conservation and management measures.

The 2023 stock assessment for Bigeye and Yellowfin indicates that, for instance, the spawning biomass of Yellowfin tuna is above its limit reference point and fishing mortality is below the FMSY – or the maximum rate of fishing mortality.

The latest stock assessment for Skipjack was conducted in 2022 with results suggest the spawning biomass is well above the defined overfished level and fishing mortality is lower than the overfishing reference point.

The South Pacific Albacore stock assessment undertaken in 2021, however, revealed a ongoing depletion of spawning biomass for the species which in turn affect catch rate and economic performance of the fishery, particularly the southern longline fishery which primarily targets it. Despite that, the WCPFC 20th annual meeting established an interim target reference point (iTRP) set at 4% below the estimated average spawning potential depletion from 2017 to 2019 aiming to rebuild the stock and the associated economic activity attached to it.

Figure 9. Volume of BET Catch by FFA Members, 2007-2022



Source: FFA

5 The Way Forward

Under the Government's Kiribati 20-Year Vision, which prioritizes the fisheries and tourism sectors, the Ministry of Fisheries and Marine Resources Development (MFMRD) is set to develop a transshipment hub

in Tarawa and Kiritimati. This hub will support fishing vessels operating in Kiribati and adjacent waters, while also enhancing tuna processing capabilities, yielding benefits for both Kiribati and fishing operators.

A new freight agreement with Nauru Airlines will facilitate the export of larger quantities of high-grade tuna. Additionally, a partnership with Solomon Airlines will further boost fish exports. Both agreements, initiated in 2017, are expected to increase export income and create jobs through local value addition.

Monitoring and surveillance of fishing vessel movements are ongoing. The observer program continues to play a crucial role, with observers placed on vessels operating in Kiribati waters. In 2016, all Kiribati-flagged purse seine vessels, including charters, achieved 100 percent observer coverage. However, in 2017, longline vessels only reached 4.8 percent coverage, slightly below the required 5 percent.

The Government of Kiribati aims to explore greater benefits from value-added tuna products and expand employment opportunities in the fishing industry, including roles in overseas processing plants. Additionally, fishing vessels and their support vessels, such as mother carriers and tankers, are required to employ a minimum number of crew members during their license period.

Maximizing revenue from tuna fishing hinges on the industry's long-term sustainability. Ensuring better protection for commercially valuable species, enforcing the PNA Total Allowable Effort, and effectively managing the operations of the PIPA will be essential for sustaining fish stocks.