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PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS**

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KIRIBATI

Annual Report to the Commission

Part 1: Information on Fisheries, Research and Statistics Western and Central Pacific Ocean Fisheries Commission (WCPFC) 2012

Abstract

The tuna fishery remains significant to Kiribati economic and social livelihood contributing to government annual income from access revenue and provides food security to the local population who fished for subsistence and small scale enterprises.

Generally, the major gears employed to harvest tuna in Kiribati waters include purse seining and pole-line who operate on surface tuna species mainly Skipjack tuna and longlining who target high value Yellowfin and Bigeye tuna. Most of these gears are employed by foreign fleets except trolling and handling used by local fishermen to catch shallower tuna species mainly Skipjack and Yellowfin.

In 2011, a total of 520 foreign fishing vessels licensed to fish in Kiribati waters compared to 484 granted licence in 2010. The access fees of these foreign fishing vessels contributed to the national revenue and it is largely responsible for subsidizing the government annually.

Kiribati have flagged vessels active within the WCPFC Area. The number of national fleets increased from 1 in 2008 to 10 in 2011 due to an increased influx of foreign fishing vessels changing flags to Kiribati. Consequently, the total catches of Kiribati's fleets increased from 5,580mt in 2009 to over 7,710mt in 2010 and dropped to 4,521mt (41%) in 2011.

Tuna remains the most important marine resource to Kiribati and therefore the sustainable development and management of the resource is critical for the country development. Kiribati is keen to work in collaboration with other nations for the sustainable management of this resource.

1. Background

Geographically, the Republic of Kiribati consists of 33 low atoll islands (except Banaba) straddling north and south of the equator in the central Pacific. The group of islands is divided into three sub-groups of islands known as the Gilbert, Phoenix and Line zones. Kiribati EEZ is located in the WCPO covering 3.5 million square kilometers within 167°W-146°E and 8°N to 14°S. Land area is only 811 square kilometers.

Tuna is the main economic marine species fished mainly by distant water fishing nations from which the government receives access revenue in return to fund its annual budget. Currently, there are four main tuna species commercially fished. These include Skipjack (*katsuwonus pelamis*), Albacore tuna (*thunnus alalunga*), Yellowfin tuna (*T. albacares*) and Bigeye tuna (*T.obesus*). Access fees represent the highest source of revenue and accounts for more than 30% of GDP each year.

With limited capacity to harvest its own tuna resource, Kiribati focuses on the establishment of joint-ventured (JV) fishing operation with companies from distant water fishing nations. There is an increasing in number of JV fleets partnered with Kiribati since 2009. Currently, there are 6 JV purse seine vessels operating under bilateral and regional arrangements.

The artisanal fishery comprises of small skiffs/crafts usually less than 7 meters which form a minority part of tuna fishing in Kiribati. Such fishery catches a certain amount of tuna species, mainly Skipjack tuna, which is used locally for economic and local consumption. Vertical hand-lining, trolling and pole & line are often employed by artisanal fishermen to harvest Yellowfin and Skipjack tuna species. Artisanal tuna fishing is intense in South Tarawa, compared to the rest of islands, where the majority of the population resides and they are employed for such purposes.

2. Flag State Responsibility

2.1.Kiribati Flagged Vessels

The number of Kiribati flagged vessels active in the Convention Area increased for the last 3 years. In 2010, Kiribati registered on WCPFC Register a total of 38 vessels i.e. 8 fishing vessels and 30 supporting vessels. This includes; 6 purse seiners, 1 pole-line, 1 longline, 21 reefers and 9 bunkers/tankers. In 2011, the number increased to 41 consisting of 9 purse seiners, 1 pole-line, 4 longlines, 8 tanker vessels and 19 reefers.

The number of artisanal boats in 2010 was based on the result of the 2008 artisanal survey. Due to limited funding for artisanal surveys, there are no data for years before 2007 including 2011. Table 1 provides the number of Kiribati catcher vessels active in the Convention Area for the last 5 years, excluding tankers and reefers.

Table 1. Record number of Kiribati vessels in WCPO 2007-11.¹

Gear	Size (GRT)	2007	2008	2009	2010	2011
Longline	0-10					
	10-50					
	50-200		3	0	1	4
	200-500					
	500+					
Gear	Size (GRT)	2007	2008	2009	2010	2011
Purse seine	0-500					
	500-1,000					
	1,000-1,500	1	1	3	4	5
	1,500+			1	1	1
Gear	Size (GRT)	2007	2008	2009	2010	2011
Pole & line	0-10					
	10-50					
	50-200					
	200-500			1	1	1
	500+					
Gear	Size	2007	2008	2009	2010	2011
Artis. troll	< 7 meters	4895	4766	4766	4766	4766

2.2. Annual Catches in the Convention Area

2.2.1. Longline Fishery

Kiribati longline fleets increased from 1 in 2010 to 4 in 2011. These vessels mainly fish in the eastern part of Kiribati EEZ and adjacent high seas targeting high value Albacore, Yellowfin and Bigeye. Due to an increased in number of LL fleets the catch also increased from 73.27mt in 2010 to 153.69 in 2011. Bigeye (55%) and Yellowfin (24%) constitute the majority of catch in 2011. Kiribati LL catch is given in Table 2 and in Fig 1.

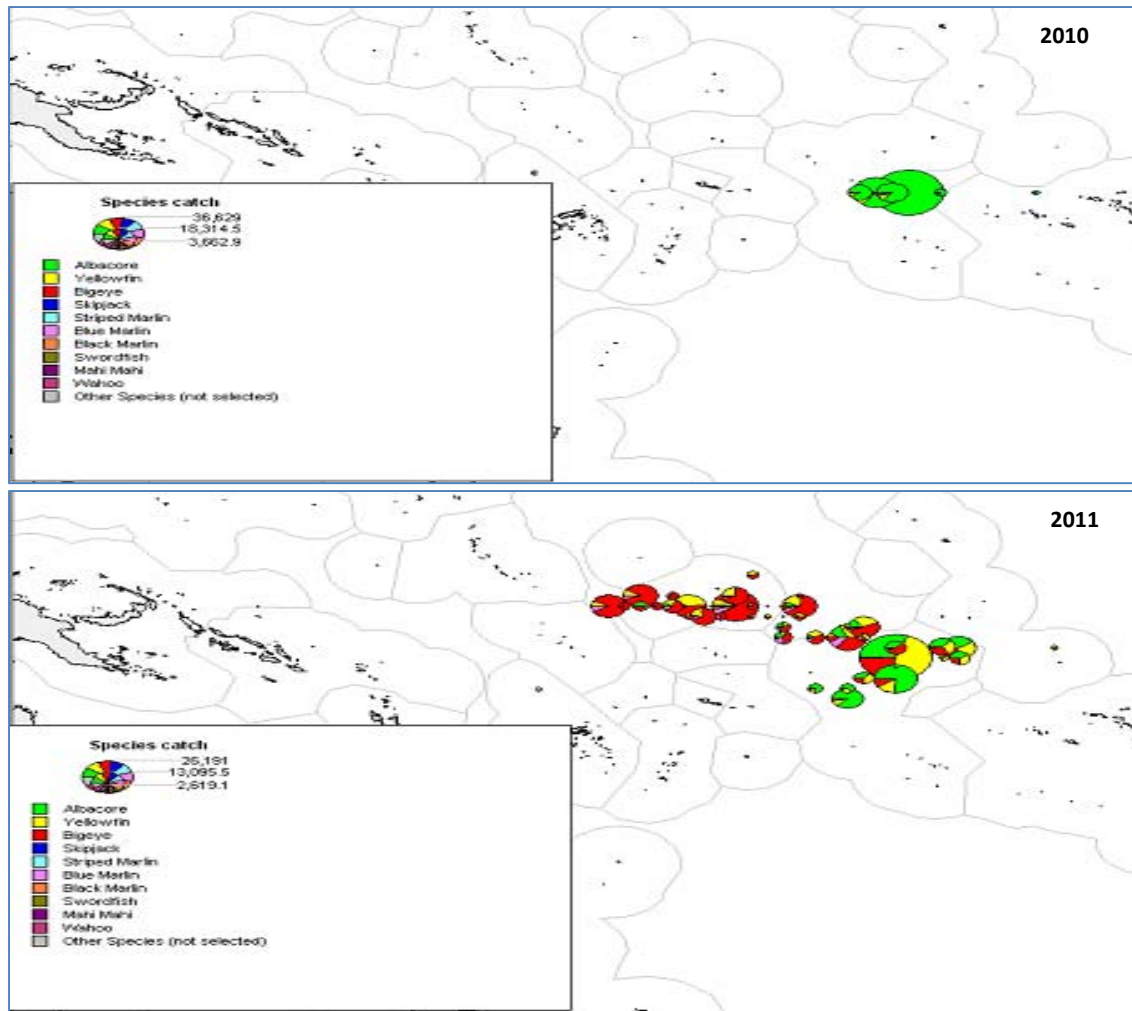
Table 2. Kiribati Longline catch (mt)

Year	ALB	BET	YFT	OTH	Total
2011	9.68	84.63	37.89	21.49	153.69
2012 ²	2.55	155.80	7.76	18.39	184.50
Total	12.22	240.43	45.65	39.87	338.18

¹ Data excludes reefers and tankers/bunkers.

² Catch for 2012 provisional.

Figure 1. Annual distribution of target species catches for Kiribati LL fleets in the WCPO 2010-11

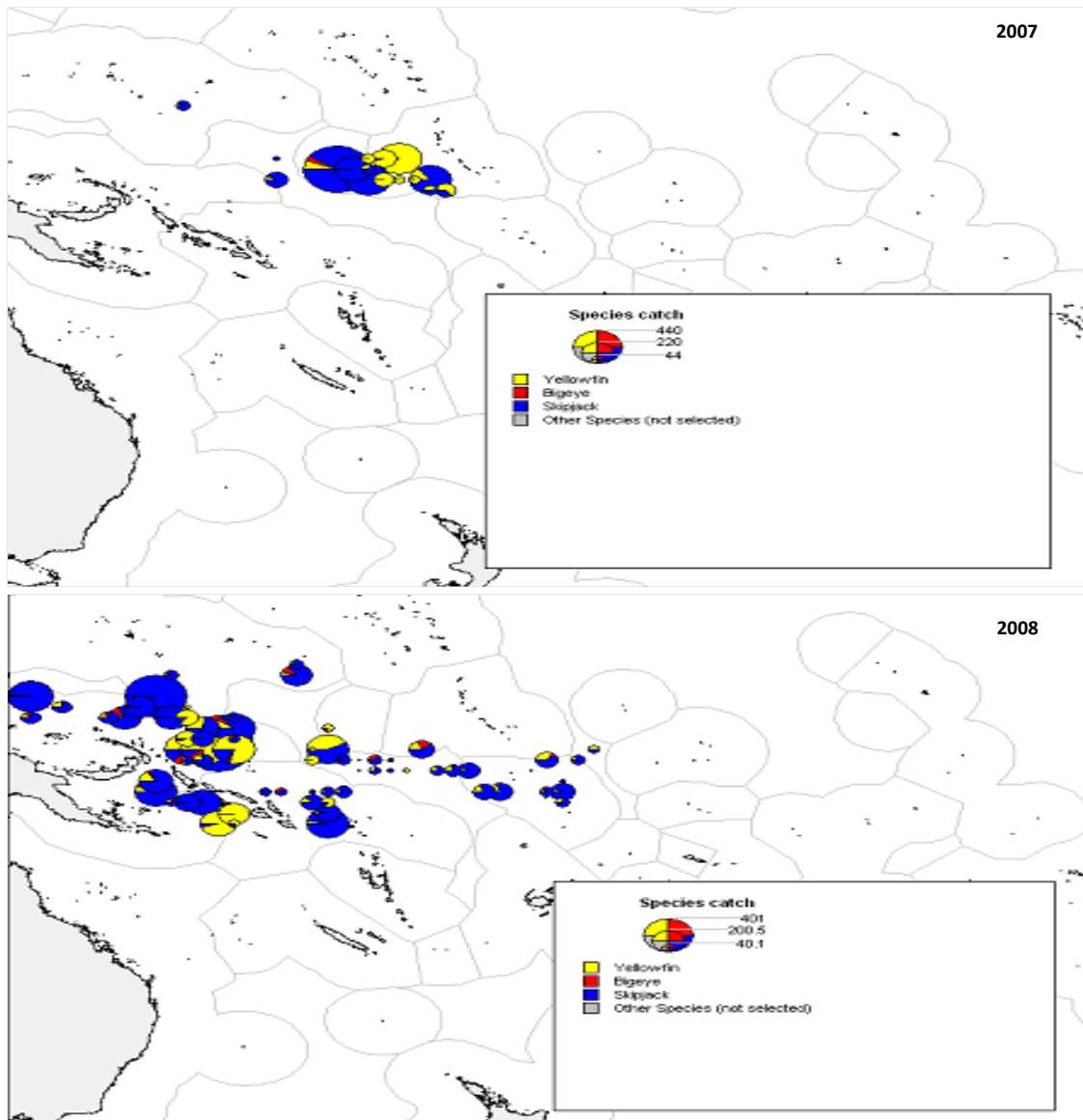


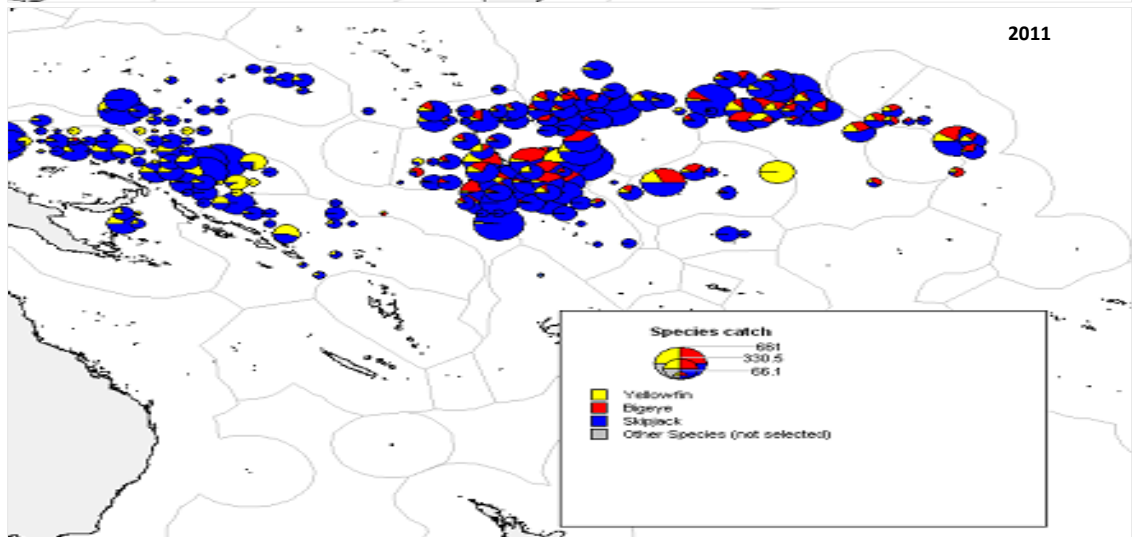
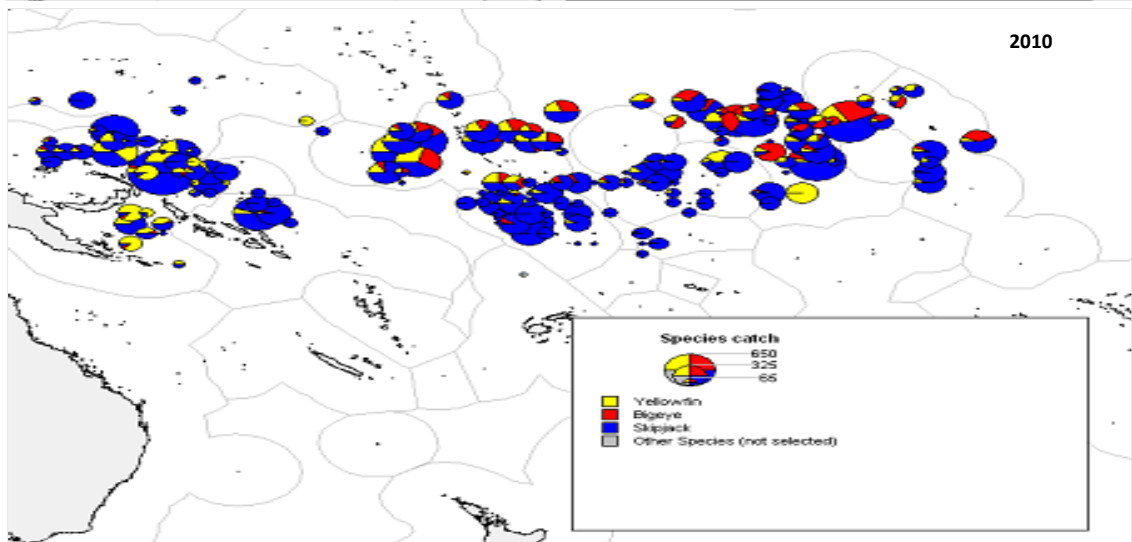
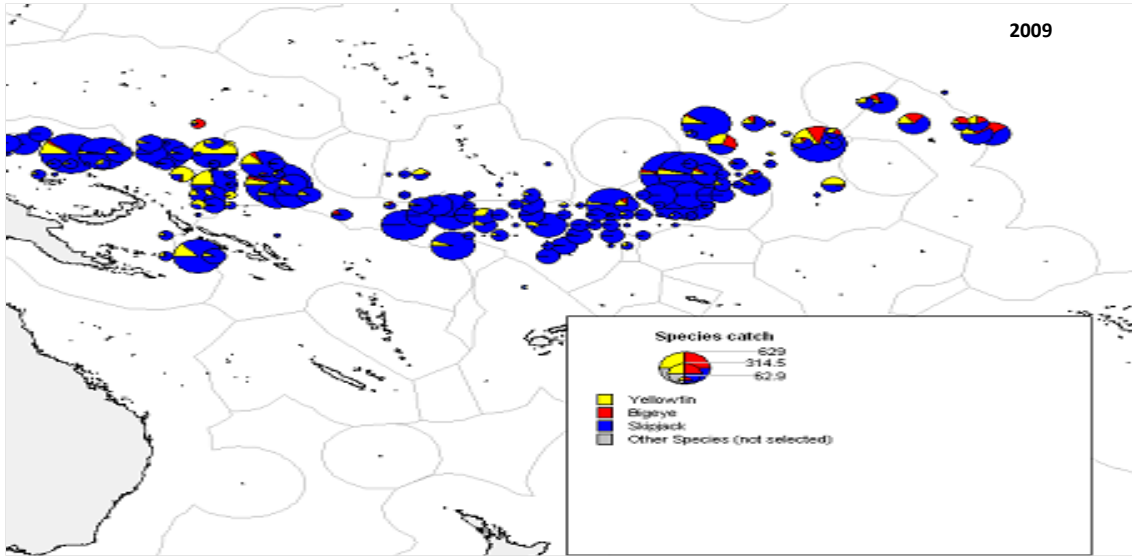
2.2.2. Purse seine Fishery

The spatial distribution of tuna catches for Kiribati purse seine fleets for the last 5 years is shown in Fig 2. There is a clear distinction in the pattern of catches distribution as in 2008; the majority of catch is taken from the west of Kiribati. On the contrary, higher catches observed east toward Kiribati mostly in the Phoenix and Line group in 2009, 2010 and 2011 where the pattern of fishing shifted towards the eastern area. The eastern shift in the distribution of catch is strongly influenced from the west to east movement of skipjack's habitat during *El Niño* that is experienced in the mid 2009 to the first half of 2010.

Furthermore, it is observed that the composition of bigeye tuna increases as the movement of fishing shifted towards the eastern waters in 2009, 2010 and 2011. This may due to the fact that deeper set was made in those regions or the habitat of Bigeye tuna in the east was shallower during those years and therefore easier to be reached by purse seine sets.

Figure 2. Annual distribution of target species catch for Kiribati PS fleets in the WCPO 2007-11





On average, the Kiribati's purse seine catches maintain over 100mt for 2007 and 2008, that is when Kiribati owned only 1 purse seiner namely *Kao No.1*. From 2009-11 the average of catch rose to over 5,000mt – the period which Kiribati flagged 3 additional foreign-owned purse seine vessels, that is, two from Ecuador (*Jeannine* and *Betty C*; each over 1,500GRT) and one super seiner *Pacific Star* (over 4,000GRT) from the Seychelles. Additionally in 2011 several boats operated under the joint-venture added to the list. Such an increment in the observed catches was attributed to an increase in the number of Kiribati's purse seine fleets since 2009.

Table 3. Kiribati PS fleets catch (mt) 2007-11

Year	No. of KI PS	SKJ	BET	YFT	OTH	Total
2007	1	241.0	-	-	-	241.0
2008	1	75.0	17.0	32.0	-	124.0
2009	3	4,851.0	245.0	351.0	-	5,447.0
2010	4	5,184.0	1,280.5	1,219.5	7.0	7,691.0
2011	5	3,697.0	337.0	308.0	-	4,342.0
Total		14,048.0	1,879.5	1,910.5	7.0	17,845.0

Skipjack tuna is the main target species constituting 87% of total catch produced by Kiribati purse seine fleets in 2011. Yellowfin and Bigeye tuna represent 7.8% and 7.1% respectively. An increase in number Kiribati purse seiner since 2009 corresponds to an increase in catch as in Fig 2 above.

2.2.3. Pole & Line Fishery

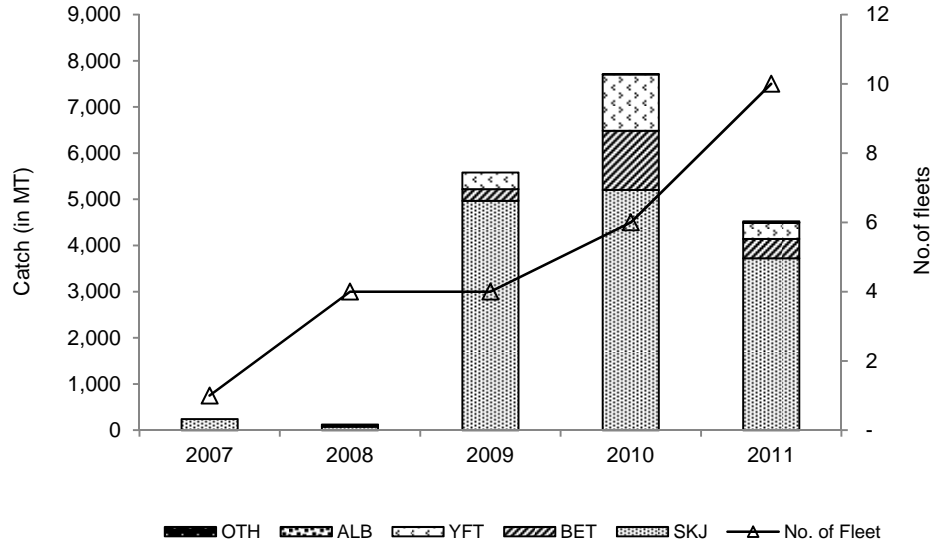
Kiribati's only PL vessel, *Akawa*, commenced fishing in 2009 and fished in the Line Group but mainly in the high seas where 85% of tuna is taken from the high seas from 2009-11.

Figure 3. Annual catch (mt) of Kiribati PL in WCPO

Year	SKJ	BET	YFT	OTH	Total
2009	115.5	8.0	9.5	-	133.0
2010	19.0	-	-	-	19.0
2011	24.5	-	1.5	-	26.0
total	236.0	8.0	59.0	-	303.0
average	53.0	2.7	3.7	-	59.3

The majority of catch is Skipjack of 133 mt produced in 2009 and decline to 19 mt in 2010. In 2011 catch increased to 26mt in 2011. Yellowfin and Bigeye constitute the minority of the catch.

Table 4. Annual catch (mt) and total number of KI fleets in WCPO



2.2.4. Artisanal Fishery

Tuna fishery is crucial to the Kiribati community in terms of economic and subsistence purposes. Artisanal fishery uses boat of not more than 7m in length powered by 30-40HP outboard engine to harvest tuna within the territorial waters of Kiribati. Both trolling and hand-lining are employed by local fishermen within the 12nm of the islands to fish for tuna. This is more common in South Tarawa where commercial institutes and the majority of the population reside. The estimated tuna catches for the artisanal boats in the following table is based on the recent fisheries survey conducted on selected islands in the Gilbert group.

Table 5. Annual Catch (mt) for Artisanal fishery.

Species	2009	2010	2012	Total
SKJ	22,548.74	35,495.70	20,694.00	78,738.44
YFT	5,750.94	29,173.00	29,510.60	64,434.54
BET	-	-	-	-
Total	28,299.68	64,668.69	50,204.60	143,172.97
spp %	19.77	45.17	35.07	100.00

Fisheries Division, 2012

There is no data for 2007 and 2008 due to limited number of Fisheries Assistants (FA) on the dispersed islands and the annual survey is costly to the government. After 2009, a new recruitment of FAs was made and trained to assist the local community on each island with respect to fishery matters. After their formal training at the Fisheries Division in Tarawa, these FAs were posted out to their designated islands to assist the fishing community and improve fishery data collection at the national level. Skipjack is the dominant catch with over 35,495mt produced in 2010.

Table 6. Artisanal catch landing from selected islands in the Gilbert group

Island	Species	2009	2010	2012
Betio	SKJ	22,548.74		
	YFT	5,750.94		
	BET	-		
	OTH	13.19		
		28,312.87	-	-
S.Tarawa	SKJ			20,694.00
	YFT			29,510.60
	BET			-
	OTH			630.00
		-	-	50,834.60
Arorae	SKJ		17,168.62	
	YFT		2,624.88	
	BET		-	
	OTH		113.65	
		-	19,907.15	-
Tamana	SKJ		12,289.24	
	YFT		19,259.87	
	BET		-	
	OTH		61.42	
		-	31,610.52	-
Nikunau	SKJ		349.93	
	YFT		189.42	
	BET		-	
	OTH		-	
		-	539.35	-
Butaritari	SKJ		5,687.91	
	YFT		7,098.83	
	BET		-	
	OTH		13.19	
		-	12,799.92	-
Grand total		28,312.87	64,856.95	50,834.60

Fisheries Division, 2012

3.3. Reported Bycatch on Kiribati purse seine fleets

Table 7 displays by-catch species reported by observers onboard Kiribati's purse seine fishing vessels active within the Convention Area.

Table 7. Observed weights of specific bycatch species by KI PS fleets in the WCPO, 2007-11. [SPC Observer data; 2009 4 trips, 2010 7 trips, 2011 4 trips].

Category	Species	Catch estimates (MT)		
		2009 MT	2010 MT	2011 MT
Target Tuna	Skipjack	15,367	16,149	35,320
	Yellowfin	4,469	4,537	9,906
	Bigeye	1,041	5,061	1,288
Billfish	Blue marlin	1.0	3.2	3.3
	Black marlin	0.8	0.0	5.9
	Other Billfish	0.0	2.8	0.8
Sharks and Rays	Blue shark	0.0	0.0	0.0
	Mako sharks	0.1	0.0	0.0
	Oceanic whitetip shark	1.9	0.1	0.6
	Silky shark	2.1	4.5	15.4
	Other sharks and rays	0.0	1.6	8.5
Other finfish	Bullet/Frigate tunas	0.0	0.0	0.0
	Kawakawa	0.0	0.0	0.0
	Rainbow Runner	9.0	6.2	8.2
	Wahoo	0.0	1.0	5.1
	Common dolphinfish	4.6	1.0	6.2
	Triggerfish	0.0	7.8	19.6
	Barracudas	0.0	0.0	0.3
	Escolars	0.0	0.0	0.0
	Lanctfishes	0.0	0.0	0.0
	Ocean sunfish	0.0	0.0	0.0
	Oilfish	0.0	0.0	0.0
	Opah	0.0	0.0	0.0
	Pomfrets	0.0	0.0	0.0
	Small baitfish	0.0	0.7	3.4
	Other fish	0.9	1.2	0.3
Total Target tuna		20,877	25,747	46,514
Total billfish		2	6	10
Total sharks and rays		4	6	24
Total finfish		14	18	43
Total non-target		20	30	78
		0.0975%	0.1166%	0.1667%

3. Future prospect of the Fishery in Kiribati

The key priority area for Kiribati is to develop its tuna industry in a sustainable manner which will be achieved by establishing of joint-venture fishing operation and fish processing with interested foreign companies.

In 2010, Kiribati concluded another joint-venture with Japan engaging 1 purse seine vessel and in 2011 there were two similar arrangements concluded with Korea bringing in another 4 purse seine vessels. In total JV vessels has increased to 5³ currently operating in the WCPO under a bilateral and FSM access arrangement.

3.1. Status of Tuna Fishery data collection system

3.1.1. Logsheet Data Collection

Logsheet submission from Kiribati's national fleets and licensed foreign fishing vessels still not accomplished the required 100% coverage. On the contrary, higher logsheet coverage is being provided by Kiribati fleets than a much lower coverage from foreign fleets licensed to fish in Kiribati waters.

Retrieval of logsheet data from licensed foreign longline vessels by far the major impediment in obtaining good data coverage for licensed fleets. This is due to a poor compliance of the fishing masters to submit logsheets in a timely manner coupled with the submission of logsheet which usually made after completion of fishing trips, often take over a year long.

3.1.2. Kiribati National Observer Program

Kiribati has a total of 105 active observers (11 females) after recruitment of additional 30 observers in 2010. From this, 6 stationed in Xmas Island while the rest stationed in the capital. These observers assist in both the national and regional observer data collection. The major drawback for Kiribati to provide good quality observer data include the lack of qualified observer de-briefers to check the quality of data and to brief observers, especially new recruitments prior boarding fishing vessels. In 2011, there were 45 observers placed on foreign fishing vessels, the majority of which were placed on purse seiners, a similar placement pattern in previous years.

Table 8. KI Observer Placement 2006-11

Year	BU	LL	PS	RC	RV	FFA	Total
2006	-	4	13	-	-	3	20
2007	-	2	19	-	-	-	21
2008	-	3	21	-	-	2	26
2009	-	3	46	-	-	2	51
2010	-	-	27	-	-	4	31
2011	8	2	30	3	1	1	45
%	17.8	4.4	66.7	6.7	2.2	2.2	100.0

Kiribati National Observer Program, 2012

³ Increased to 6 in 2012

3.1.3. Unloading/Transshipment data

Unloading data are normally collected from two designated ports namely Betio in the Gilbert group and Christmas port in the Line Group. At sea transshipment data (within Kiribati EEZ) for longline vessels often gathered by observers. The transshipments at sea is not permitted when the observers is not present either on the fishing vessel or the reefer carrier.

3.1.4. Port Sampling

Kiribati port sampling and observers are responsible for collecting of port sampling data. In 2010, there were 68 purse seine entered into Betio port are sampled, scanned and send to SPC for re-processing. There is no data available yet for 2011.