



**SCIENTIFIC COMMITTEE  
SECOND REGULAR SESSION**

7-18 August 2006  
Manila, Philippines

---

**ANNUAL REPORT, Part I – Information on Fisheries, Research and Statistics**

**KINGDON OF TONGA**

---

**August, 2006**

**Tonga**

**National Tuna Fisheries Report 2006**

**2<sup>nd</sup> Regular Scientific Committee (SC 2) Meeting**

**7 – 18 August, 2006, Manila, Philippine.**

## 1. Background :

Tonga has approximately 700,000 km<sup>2</sup> of undeclared EEZ which extends from Latitude 13 to 25 degrees offers moderate potential for exploitation. Historically, the annual catches of tuna species are dominated by the deep swimming albacore species which makes up 70%, less than 20% are yellow fin and 10% are big eye. Skipjack and yellow fin are surface tuna species, they are known to occur more seasonally and are believed not to be fully exploited in Tonga's fisheries waters.

## 2. Fleet Structure

Following the development of the domestic longlining in late 1990s the tuna fleet increased to peak in 2002 and 2003 and has subsequently declined due to poor catch rate and high operation cost. During the second half of 2004 and whole of 2005, the number of licensed tuna longline vessels were actively fishing were only 12 and 9 respectively. At the end of 2004 most of the Locally Based Foreign Fishing Vessels (LBFV) relocated to other countries in the region and returned back to China. Table 1 shows the number of longline fishing vessels that were licensed to fish in Tonga waters.

Table 1. The number of tuna fishing vessels licensed to fish in Tongan waters.

Year	Gear	Domestic Vessels	LBFV	Total
2000	Longline	14	2	16
2001	Longline	17	2	19
2002	Longline	18	11	29
2003	Longline	13	16	29
2004	Longline	14	14	28
2005	Longline	15	0	15

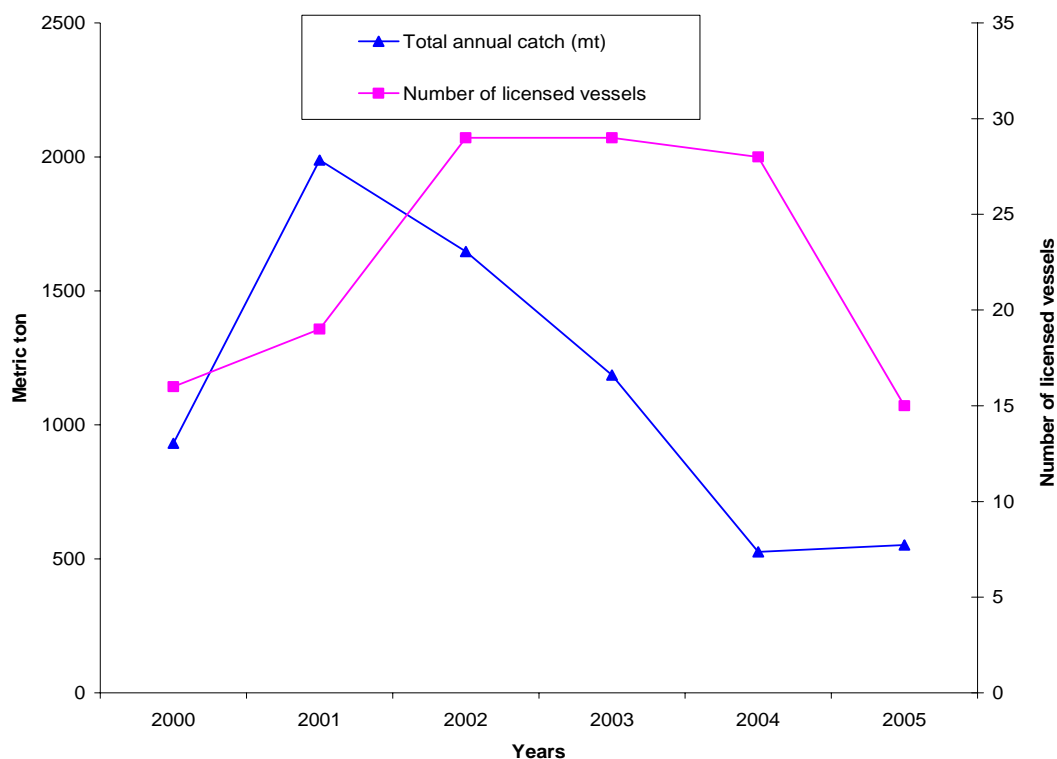
## 3. Annual Catch Estimate

The total annual catch (metric tons) of the main tuna species and associated non-target species or by-catch from all licensed longline fishing vessels fishing in Tongan waters from 2000 to 2005 is showed in Table 2. Data from Table 1 & 2 are illustrated in Figure 1. The total annual catch from all longline vessels increased from the late 90s to a peak in 2001 and then start declining in 2002 to the lowest in 2004 with only a slight increase in total catch in 2005. After the high annual catch of tuna in 2001, the number of longline vessels increased in 2002 and remain in the same level until 2004. However, the annual catch declined to the lowest in 2004. The decline in total catch from 2001 to 2004 is the result of declining in CPUE (Table 3 and Figure 2) during the same period. Low CPUE and high operation cost from rapid increase in fuel price caused some of the licensed vessels that were actively fishing during the same period to tie up at the wharf or only make one fishing trip a month or every second month.

Table 2: The annual catch of main tuna species and by-catch in metric tons (mt)

Year	Weight(mt)
2000	931
2001	1988
2002	1647
2003	1186
2004	526
2005	552

**Figure 1: Total annual catch and no. of licensed vessels**

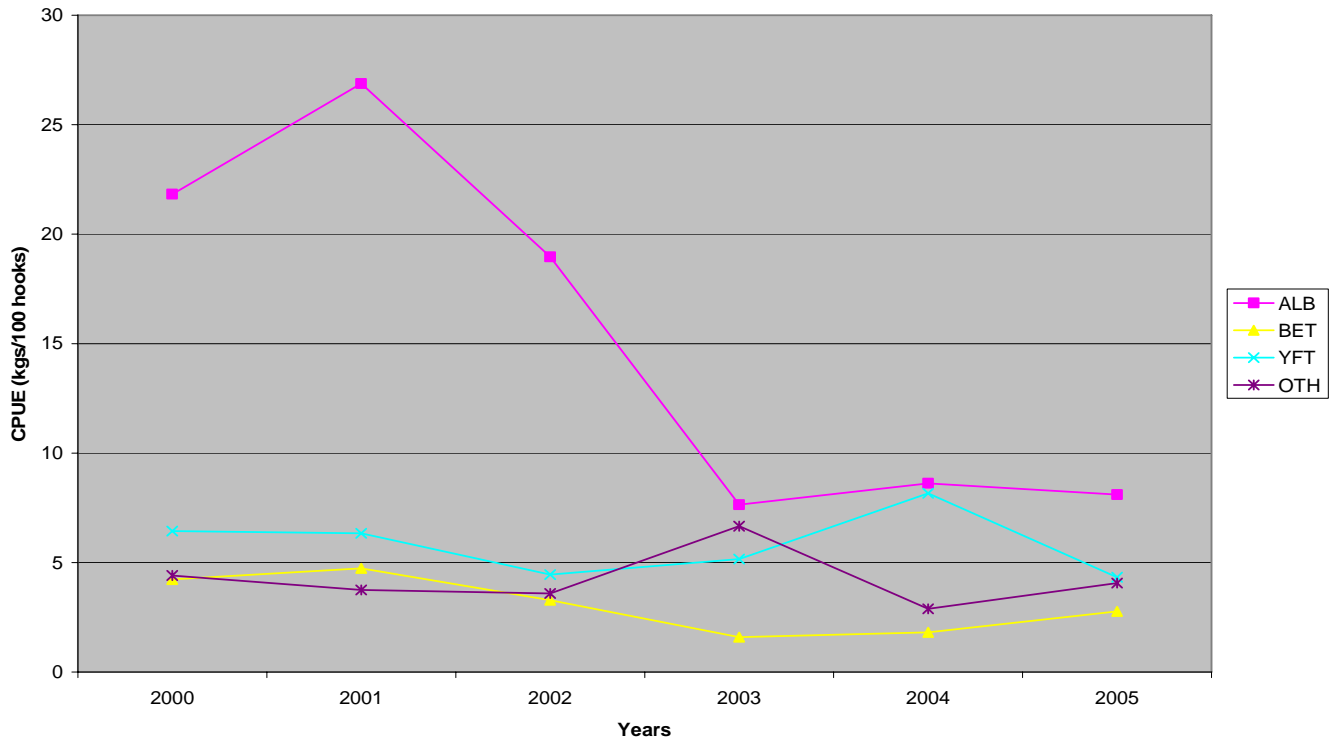


The nominal CPUE for tuna longlining in Tonga waters (Table 3 and Figure 2) indicates that albacore were significantly higher than those for yellowfin and bigeye. It peaked in 2001 then declined constantly to a stable rate from 2003 to 2005. The second highest species is the yellowfin. It remains fairly constant with a peak in 2004. The CPUE hence the total annual catch remains stable for 2004 and 2005.

**Table 3: The annual CPUE (kgs/100 hooks) for the main tuna species for 2000 - 2005**

Year	Albacore	Bigeye	Yellowfins	Others	Total
2000	21.821	4.233	6.438	4.41	36.902
2001	26.874	4.733	6.338	3.754	41.699
2002	18.968	3.282	4.451	3.59	30.291
2003	7.65	1.589	5.163	6.668	21.07
2004	8.623	1.813	8.167	2.894	21.497
2005	8.108	2.764	4.326	4.063	19.261

Figure 2: CPUE for main tuna species and bycatch



The total monthly catch for each species (Table 4 and Figure 3) for 2003 to 2005 shows no clear trend for most species with exception of albacore. It shows significant peaks in June/July and September. The monthly total catch of albacore from 2003 - 2005 indicated the good fishing period is from May to September (Figure 5). The total catch in December 2005 shows a significant increase when compared to 2003 and 2004.

On the other hand the yellowfin shows a significant change in catch trend for the first 6 months when compared 2003 to 2004 and 2005 (Figure 4). During the last 6 months the catch trend, though fluctuated, but shows no significant differences except for December, 2005. It shows a significant increase from those of previous years.

The monthly catch rate for bigeye in 2003 shows a high fluctuation with peaks between February and August (Figure 6). When compared to 2004 and 2005 they shows a single peaks, i.e. in June and May respectively. That is to mean that the peak months for bigeye is between April and July (Figure 3). The catch rate were low and fairly stable from August to December for 2003 and 2004. For the same period in 2005 the catch rate shows a significant increase with another peak in October.

Interestingly the total catch for all these species shows a significant increase in December of 2005 when compared to 2003 and 2004. This let us assume that tuna fishery is starting to pick up.

Table 4: Total cumulative monthly catch (mt) of the main tuna species for 2003 to 2005

Month	Yellowfins	Bigeyes	Albacore	Swordfish	Marlins	Others	Total
Jan	63.3	10.5	55.4	9.8	6.8	31.6	177.4
Feb	95.6	13.0	23.1	2.9	4.8	30.5	169.9
Mar	58.0	24.5	42.1	2.1	2.8	18.2	147.7
April	57.4	17.5	20.4	3.5	8.5	24.8	132.1
May	51.5	38.2	66.9	3.3	8.6	31.9	200.4
Jun	57.2	30.5	150.0	3.7	6.1	44.6	292.1
Jul	45.2	23.2	130.5	3.9	7.0	62.7	272.5
Aug	31.0	7.1	70.9	1.4	4.4	45.2	160.0
Sept	41.4	8.7	148.9	4.9	8.8	63.3	276.0
Oct	19.9	15.9	14.4	7.0	11.6	49.7	118.5
Nov	34.2	11.8	34.5	15.0	13.9	85.0	194.4
Dec	24.2	9.0	43.2	7.1	5.4	34.3	123.2

The species in the category ‘Others’ includes; mahimahi, wahoo, moonfish and shark.

Figure 3: Total Monthly Cumulative Catch for 2003 -2005

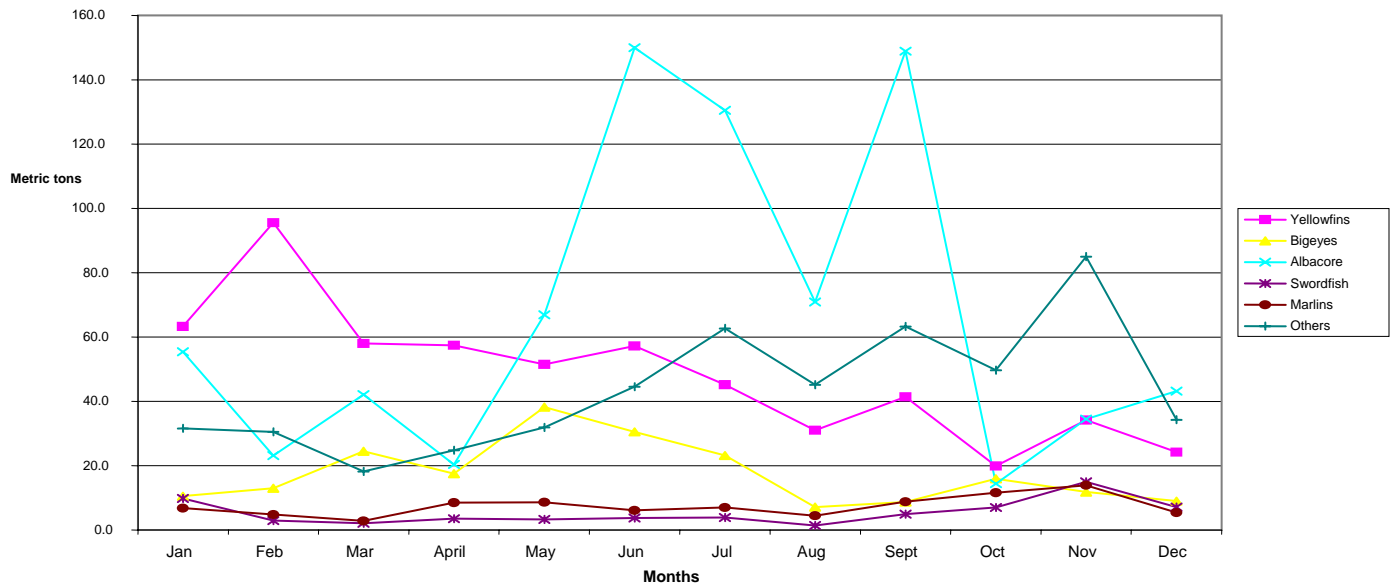


Figure 4: Total Monthly catch of Yellowfin for 2003 - 2005

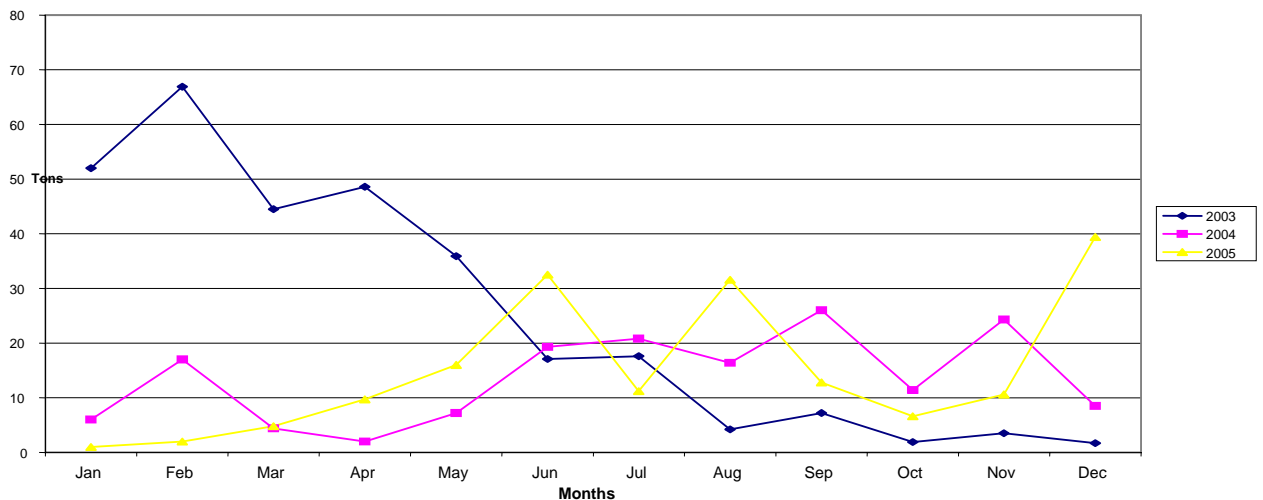


Figure 5: Monthly catch rate of Albacore for 2003 - 2005

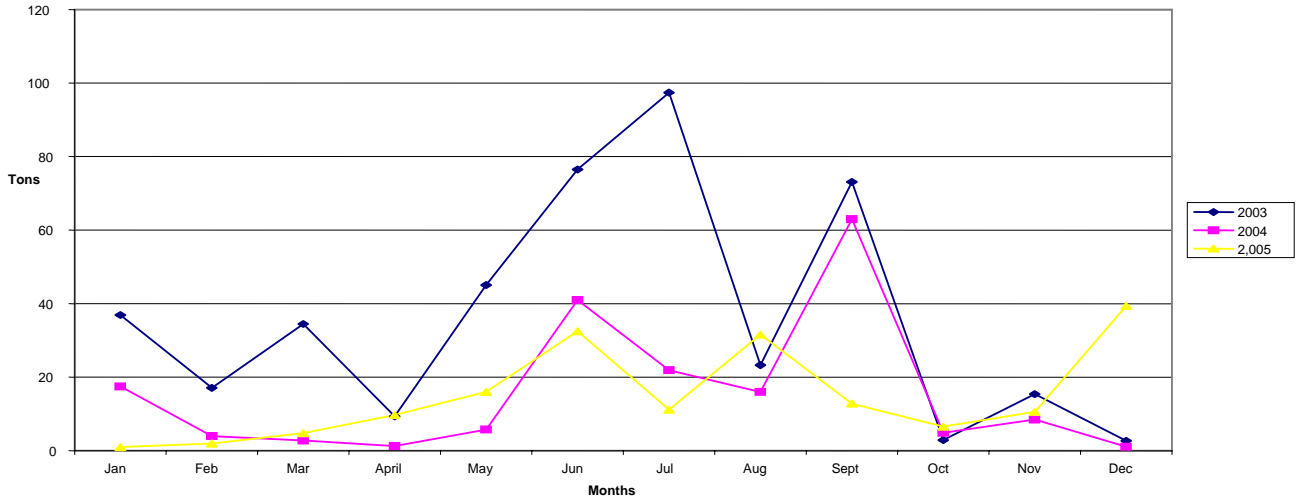
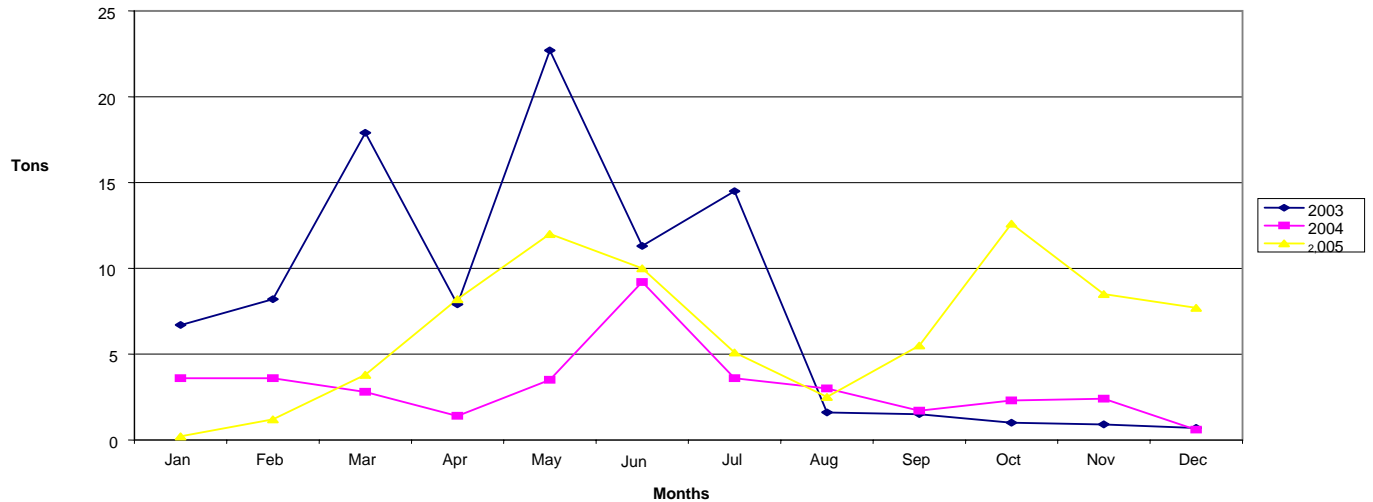


Figure 6: Monthly catch rate of Bigeye for 2003 - 2005



#### 4. Exports and Markets

The albacore were mainly exported to the cannery in Pagopago. The chilled sashimi graded fish are mainly exported to Japan, LA and Hawaii. The bycatch species and small tuna (albacore, yellowfin and bigeye) are selling locally. The Table 5 shows the total annual catch and percentage of which being exported.

Table 5: The annual total catch of target and bycatch species and percentage of export

Year	Total catch	Total export	% Export
2001	1988	1202	60.5
2002	1647	730	44.3
2003	1186	573	48.3
2004	526	249	47.3
2005	552	265	48.0

## **5. Research and Statistics**

There is no research program currently undertaken or planned for future. Statistical data are collected using three different methods; port sampling; logsheet and observer.

The port sampling program covers more than 70% of landing vessels. For the missing vessels we used the logsheet.

Our observer program used to cover mainly the locally based foreign fishing vessels. However, when these vessels were relocated to other countries, the domestic vessels operators didn't welcome our observers. This was mainly due to additional cost at a time of financial problem due to low catch rate and high operation costs. With financial assistance from the observer program of SPC we manage to cover domestic vessels.

## **6. Onshore Development**

There are five tuna packing facilities which all operate under HACCP certified conditions. The companies that have no HACCP certified facilities are using one of these facilities. Two companies are exporting loins, fresh cut packed sashimi packets.

The GEF/EU DevFish Project had funded a consultant to conduct a study/survey to improve the current management of the fisheries wharf. Poor wharf management has been the major constraint to most fishing vessel operators.

## **7. Future Development**

Tonga is looking forward for some sort of bi-lateral agreement with neighbouring countries to allow a free movement of good standing compliance domestic fleets among their EEZ. Tonga believe there is need for more cooperation among small island developing states and territories in building their capacity to exploit their resources within the region.

### **Selected References:**

1. Anon.(2003). Tonga National Tuna Fishery Report. SCTB.
2. Langley, A.D. (2004). National Tuna Fishery Status Report. OFP, SPC.  
[www.osdpd.noaa.gov](http://www.osdpd.noaa.gov)
3. Fisheries Annual Reports, 2000 - 20005