CCSBT – ESC/1107/SBT FISHERIES – Indonesia (revised)

NATIONAL REPORT[1]

INDONESIA SOUTHERN BLUEFIN TUNA FISHERIES

prepared by

Fayakun Satria[3],Wudianto[3], Duto Nugroho[3], Lilis Sadiyah[3,]

Budi Nugraha[2], Abram Barata[2] and Suryanto[3]

1. Introduction

Southern Bluefin Tuna (*Thunnus maccoyii*, SBT) is caught seasonally by the tuna longliners in Indonesia. The number of registered tuna longliners in Benoa Port was 737 that mainly targeting tuna. Those fishing boat vary in size from 30-200 GT. In general the number of tuna longliners fishing in the Indian Ocean decreased from 1,850 boats in 2009 compared to 1,099 boats in 2010 (Anon, 2011). There are several main tuna landings in Indonesia that is Muara Baru Jakarta, Cilacap, Bungus Padang, Bitung, Palabuhan Ratu and Benoa Bali. Among them Port of Benoa Bali has took part for more than 60 % of tuna production in Indonesia. Mostly SBT are landed in Benoa port, Bali that recorded more than 90 % from the total catch of SBT in Indonesia. This report provides information of SBT landed mainly in Benoa port through enumerator and scientific observer data.

2. Data Source

There are two sources of data collection available for SBT that is tuna catch monitoring by enumerators and Scientific Observers in Benoa and national statistic for tuna fisheries.

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[1] Prepared for the 16th Meeting of the Extended Scientific Committee. 19-28th July 2011, Nusa Dua, Indonesia.

[2] Research Institute for Tuna Fisheries, Benoa Bali

[3]Research Center for Fisheries Management and Conservation, Jakarta

3. Fleet size and distribution

Indonesian tuna long liner fleet size maintained 400 registered vessels. The size of the long liner vary that ranges from 30 GT to 60 GT operated in the Indian Ocean for 15 – 50 days at sea.

4. Catch and Effort

The annual catches of SBT were about 633 mt (metric ton) in 2004 and has significantly increase in 2005 for about 1,700 mt, dropped again to just below 600 mt in 2006. The catches of SBT since 2007 were steady decrease from 1,077 mt to well below 600 mt in 2010 (table 1). The national production of tuna species including Yellowfin tuna (YFT), Bigeye tuna (BET), Albacore (ALB) and Southern bluefin (SBT) in 2010 was 213675 tons. The total catch in 2010 contributed by this SBT fishery to the national catches was 468 tons or 0.22 % in weight of total tuna species excluding skipjack (SKJ) (National Fisheries Statistic-DGCF 2010).

The number of vessels that landed SBT in Benoa during 2010 fluctuated by month (Figure 2). Catch landings were low from February to March but increased to more than 100 landings in the following months, with the highest number of catch landings occurring during June – July, from140 vessels

The highest landings of SBT generally occur during the months of December to February, coinciding with the west monsoon season. Although the numbers of vessel landings were relatively low during January and February, the landings of SBT were relatively high (Figures 2 and 3). This is explained by SBT being more abundant on the fishing grounds and being a more significant proportion of the overall tuna catch during the SBT spawning season, which is generally September – March

5. Nominal CPUE

Spatial distribution of nominal catch rates for SBT is shown in Figure 4. SBT had higher catch rates in the temperate regions. The maximum SBT catch rates (1-2 fish per 1000 hooks) occurred within 2 squares between 25°-35°S and 100°-105°E, whilst in other 5-degree blocks SBT catch rates were <1 fish per 1000 hooks, and even zero for several fished squares (Figure 4).

6. Hook rate

Scientific observer has been started since 2005 based in Benoa port. The average of hook rate was 0,1 per 1000 hooks with a decreasing trend through year (Figure 5). A higher hook rate of SBT occured on October, November, February and March for 0,1-0,3. Lower hook rate occured on May, June and Juli for 0-0,005 per 1000 hooks (Figure 6).

7. Size distribution

The size of SBT caught by the longliner landed at Benoa port were range from 140 cm to 200 cm in length (FL) with mean at about 170 cm (Figure 7). Main proportion of the catch was range from 160 cm to 180 cm of FL (Figure 7). Farley *et. al*. (2010) reported that the mean of the size distribution declined from 188.1 to 166.8 cm between 1993/1994 and 2002/03, and fluctuated between 168.3 and 171.0 cm for the following six seasons.

The annual trend of fish size landed in Benoa port, Bali revealed that the mean size of SBT landed steady decrease through year from 182 cm FL in the 90's to 168 cm FL in 2010 (Figure 8). Decreasing trend hook rate as well as size of SBT indicate an impact of fishing pressure to the brooder stock both intensive fishing in the spawning ground as well as juvenile ground.

8. Scientific Observer

The scientific observer activities were recorded since 2005 until early 2010. The number of scientific observer was decrease from 6 person in 2007 become 5 person in 2008. The average day sea /trip was vary from 20 d/trip to 50 d/trip thus the total day at sea also vary from 150 days to 758 days /total number. As reported in the 2010 in CCSBT – ESC/1009/SBT FISHERIES the coverage of scientific observer program was decline in number, days at sea and area coverage. Updating information for scientific observer program until June 2011 the days at sea is 110 d (Table 2). In 2011 a new research institute for tuna fisheries is formally established in Benoa naming LP2T. Starting from 2012 the institute shall have a formal budget allocation from Indonesian government to cover of all research program related with tuna fisheries including scientific observer Program.

Acknowledgements

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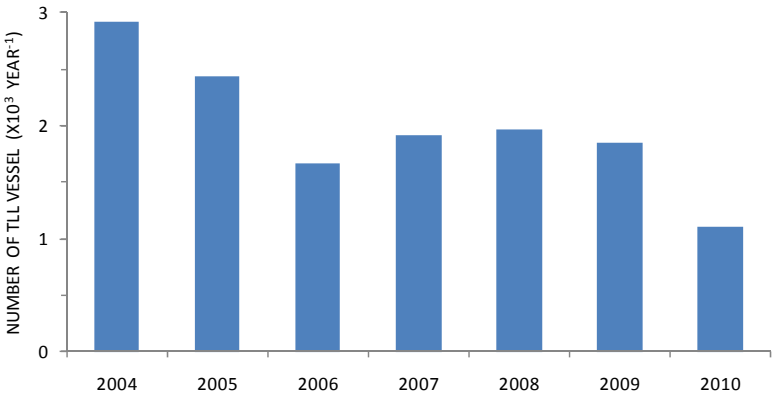

Figure 1. Number of Tuna Longliner landing at Benoa Fishing Port

Table 1. Annual catches of SBT reported to CCSBT 2004-2010

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Year	Indonesia total catch of SBT (tons)	
	Reported to CCSBT	Catch estimate *
2004	633	613
2005	1726	1690
2006	598	558
2007	1077	1077
2008	926	905
2009	641	746
2010	496	566

Remark: *) Catch estimation calculated from data landed in Benoa by RITF's enumerator

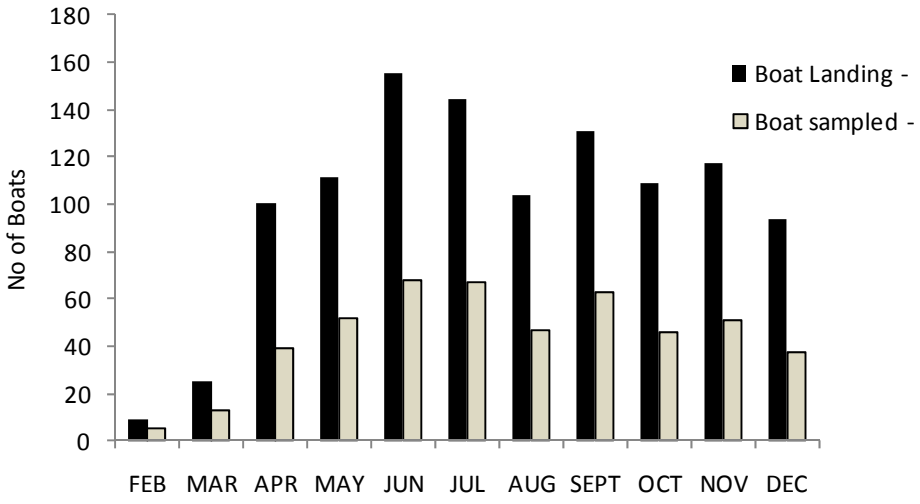

Figure 2. Monthly boat landings and sampling activities in 2010

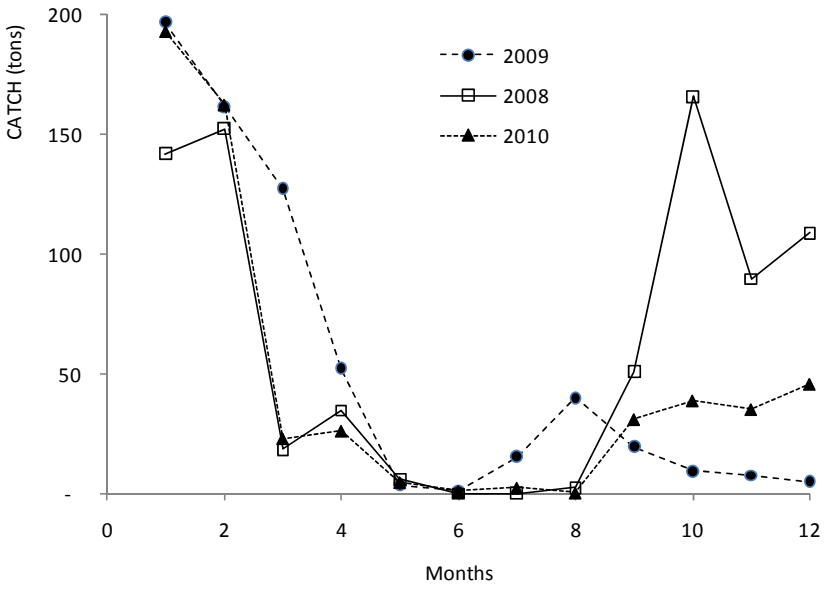

Figure 3. Monthly catch of SBT landed in Benoa in 2008-2010

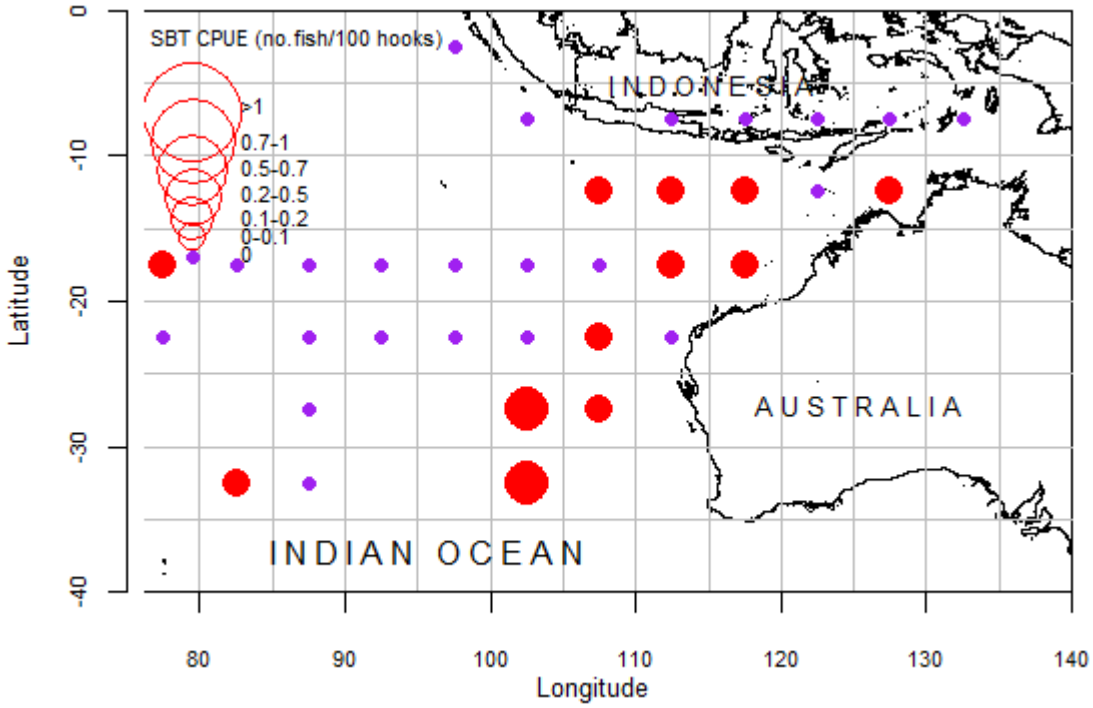

Figure 4. Spatial distribution of nominal CPUEs (no. fish/100 hooks) for SBT recorded by Benoa Observer, aggregated from 2005 to2010

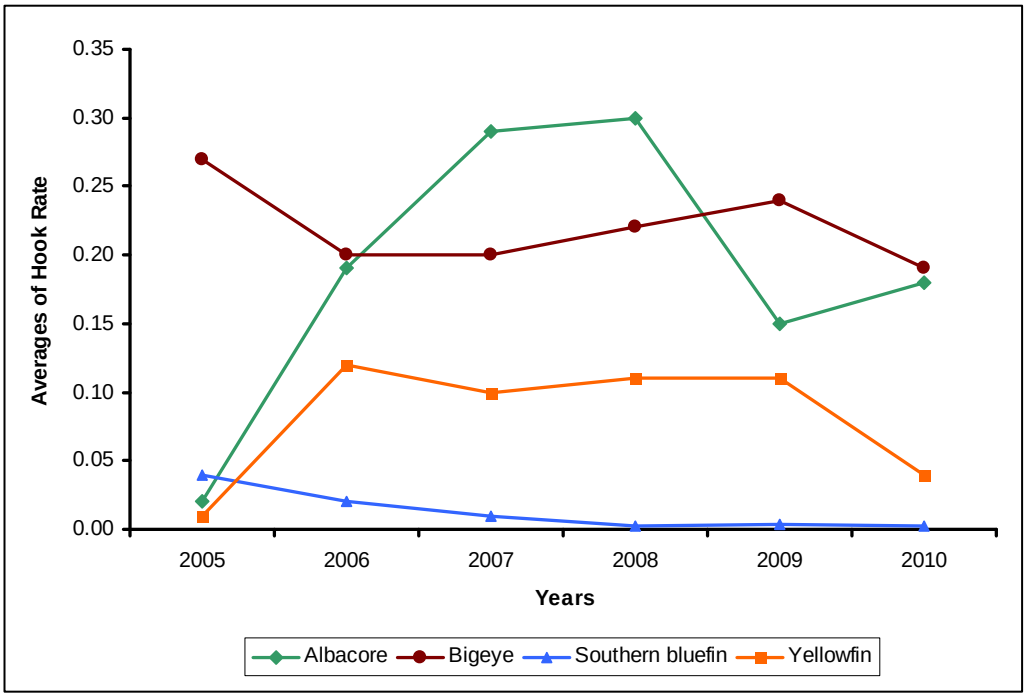

Figure 5. Fluctuation of average hook rate for tuna (SBT, YFT, BET, ALB) based on scientific observer program in the Indian Ocean.

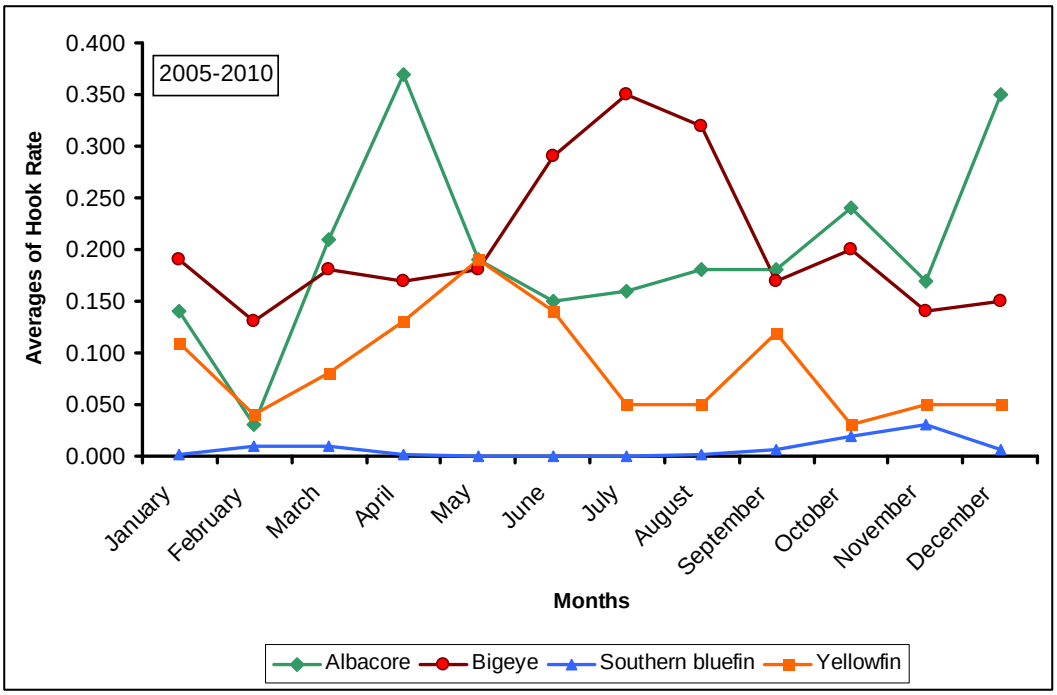

Figure 6. Average hook rate by month for SBT, YFT and BET based on scientific observer Program data.

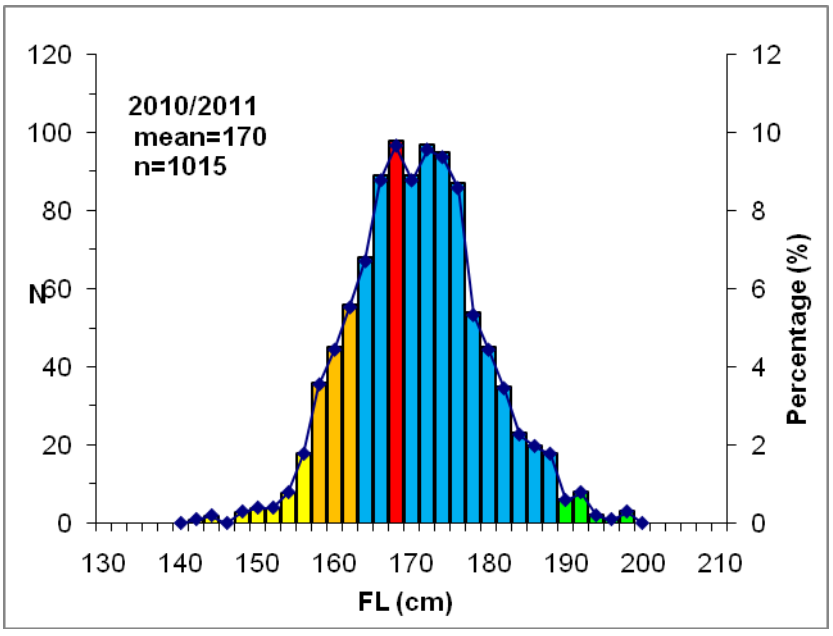

Figure 7 . Length frequency distribution of SBT during 2010 (October 2010 – April 2011). Colors representing: Red: Mean length, Yellow: < 155 cm +/- 8 years, Brown; 155 – 164 cm length at first maturity +/12 years, Blue : Mature > 12 years,Green : > 190 cm > 35 years

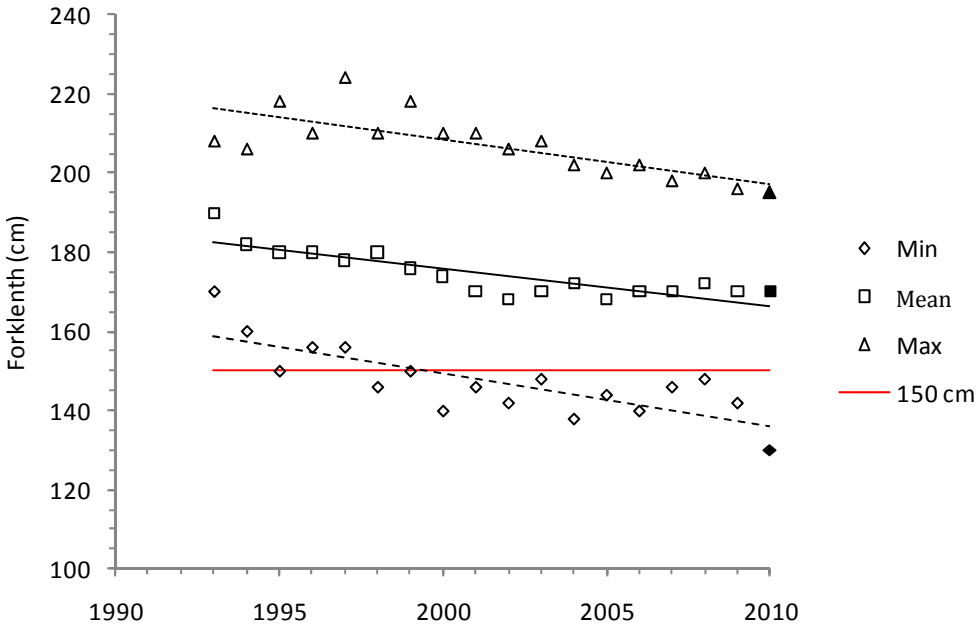

Figure 8. Annual trend of SBT size landed in Benoa

Table 2 . The annual activities of scientific observer based in Benoa Bali

YEAR	No. of Obs	No. of trips	No. of Comp	Total day at sea	days/trip	Avg (d/trip)
2005	6	6	1	251	19 – 22	20
2006	6	19	5	758	7 – 99	39
2007	6	14	5	648	21 – 108	34
2008	5	15	7	481	23 – 66	30
2009	5	14	8	535	15 – 59	38
2010	5	8	4	240	40-50	50
2011 (June)	5	2	1	110	50-60	55