

**CCSBT-ESC/1809/SBT Fisheries – Indonesia  
(ESC Agenda item 4.1)**

**INDONESIA SOUTHERN BLUEFIN TUNA FISHERIES<sup>1</sup>**  
A National Report Year 2017

Prepared by

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## **SUMMARY**

Southern bluefin tuna (*Thunnus maccoyii* Castelnau, 1872) is one of the tuna species seasonally caught by tuna longliner in Indian Ocean. Based on 2017 Catch Documentation Scheme (CDS), number of active longline vessels was 109 units, caught around 835 tons or about 9,617 individuals of SBT. The length of SBT caught range from 70 - 244 cmFL, with mean length 157.1 cmFL. Scientific observers were deployed on 3 vessels and covered 2.59% in term of total fleets.

## **Introduction**

This report provides updated information of national estimation on catch of SBT CDS data during the year of 2017. Longlining was introduced to Indonesia by Japan in the 1930s (Sadiyah & Prisantoso, 2011), but, Indonesia commenced its commercial tuna longline fishing in the 1960s (Proctor *et al.*, 2003). Southern Bluefin Tuna (*Thunnus maccoyii*, SBT) is one of tuna species caught seasonally by the tuna longliners operated in Indian Ocean. It has been historically caught as a by-catch from yellowfin and bigeye fisheries since late-1970s (Farley *et al.*, 2014). Among the tuna fishing ports, this species mainly landed in Benoa. SBT catch monitoring is regularly conducted by Research Institute for Tuna Fisheries (RITF) through port monitoring and scientific observer program. The port monitoring program first initiated in 2002, but as a project it can be traced back since 1993 (Farley *et al.*, 2014). On the other hand, the scientific observer program has been conducted since mid-2005 as an Indonesia-Australia collaboration (Project FIS/2002/074 of Australian Centre for International Agricultural Research), and since 2010 it has been conducted by RITF. Since joining the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) in 2008, Indonesia has been allocated a national total allowable catch (TAC) ranging between 651 to 750 tons per year. In order to establish a reliable catch data, DGCF introduced catch documentation scheme (CDS) in 2010 under CCSBT framework beside the former capture fisheries statistical as national data. And it has been used as a basis for total catch of SBT since 2015.

## **Catch and Effort**

Catch and effort of SBT are monitoring through daily port sampling program and scientific observer program. On the other hand, obtaining effort from logbook data would take some time since it still need further verification from the authorities before it become available for analysis. The highest production occurred in February and the lowest was in June. All the SBT were reported to be caught in the CCSBT statistical area 1 and 2. Since the largest market for SBT was Japan, Indonesia also processed all the SBT caught in GGT (Gilled and Gutted, tail retained) condition. Therefore, the total SBT catch in weight was produced using the

conversion factors “1.15” from the processed weight. The total catch weight in 2017 was 835 tons, and the total catch number approximately was about 9,615 individuals. As for the number of effort used, is still under confirmation from logbook data. Figure 1 showed that, in overall the SBT season started from September to April. Detail catch by statistical area and by month are given in the Appendix 1-3.

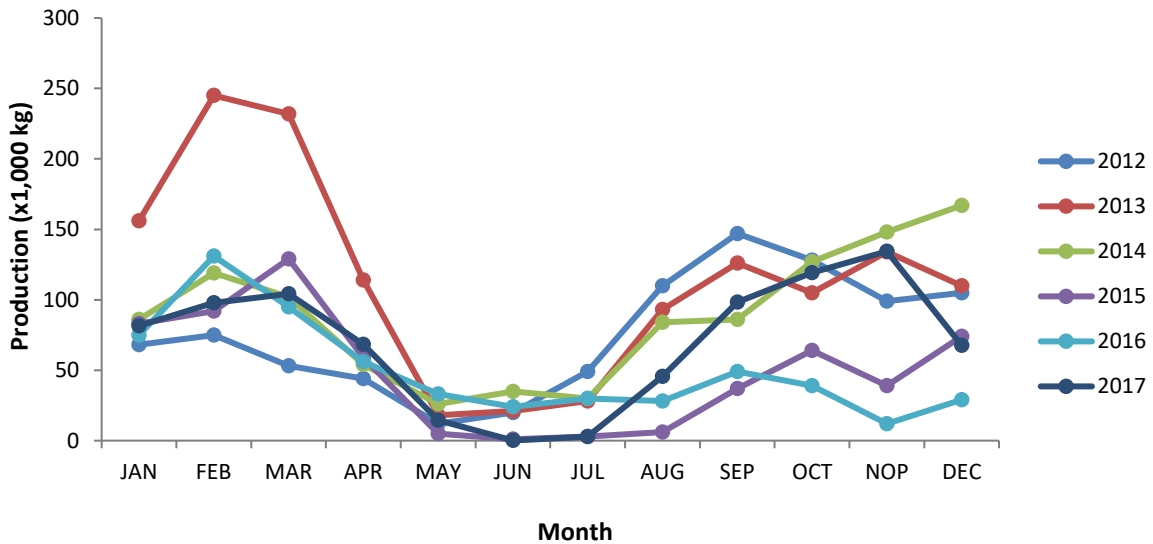


Figure 1. Catch of southern bluefin tuna caught by Indonesian tuna longliners by month from 2012-2017 (Source: CDS data).

### Catch Documentation scheme (CDS)

The 2017 CDS data indicated that there were 109 authorized Indonesian tuna longliners involved with SBT. Slightly increased compared to previous year (107 vessels). Most of the catch (83.84%) were obtained from area 1, while the rest (16.16%) came from area 2. Size of SBT caught ranged from 70-244 cmFL with average 157.1 cmFL (Appendix 1). The documented total catch based on SBT CDS data was 835 tons, which was the result of current TAC (750 mt) added with last year carry over quota (Figure 2).

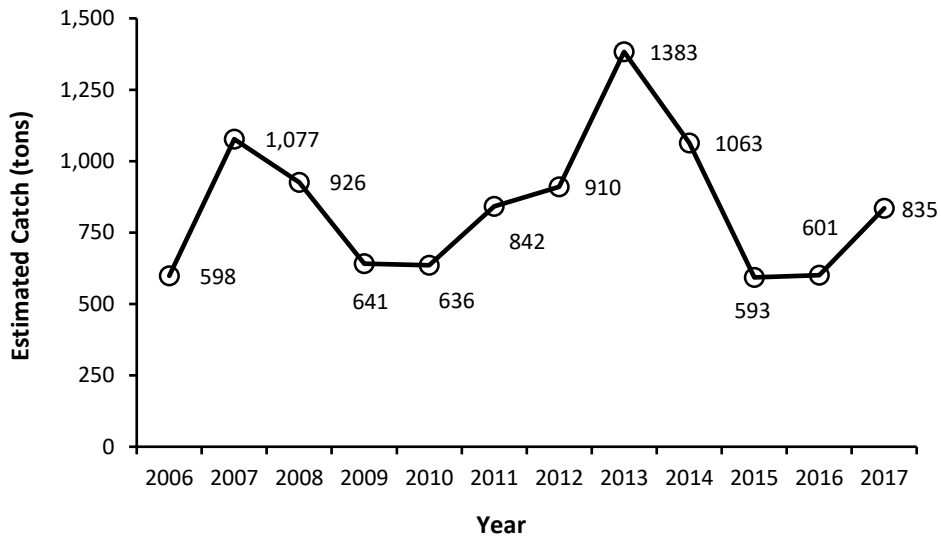


Figure 2. Total catch reported (raised weight in tons) of southern bluefin tuna from 2006-2017. Fishing intensity of tuna fishery represented by number landings and number of active vessels. Figure 2b showed that the number of landing is showing a decreasing trend since 2004. The lowest landing frequency was recorded in 2017, even though the number of active vessels was relatively stable between 107 to 190 unit (Figure 3). This was the result on transshipment ban and moratorium on foreign vessels policies.

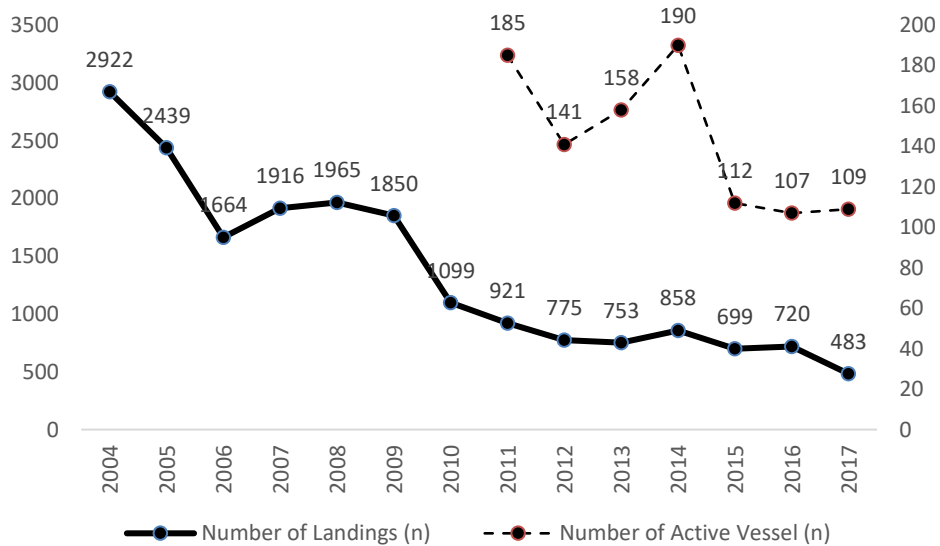


Figure 3. Number of active longline vessels recorded by CDS from 2011 to 2017

## Length frequency distribution

Size structure of SBT landed was monitored by through port sampling program, scientific observer program and CDS data. In order to avoid any confusion, this report using size data obtained from CDS. During 2017 fishing season indicates that a total of 9,615 SBT specimens were measured and weighted to the nearest kilograms. The length frequency distribution showed similar pattern compared to the previous year, but with lower average size recorded. The size frequency during period of year 2017 ranged between 70 cm to 244 cmFL with an average of 157.28 cmFL (Figure 4). The proportion of small size (<150 cm) SBT caught was higher (35%) compared from last two previous year (Figure 5).

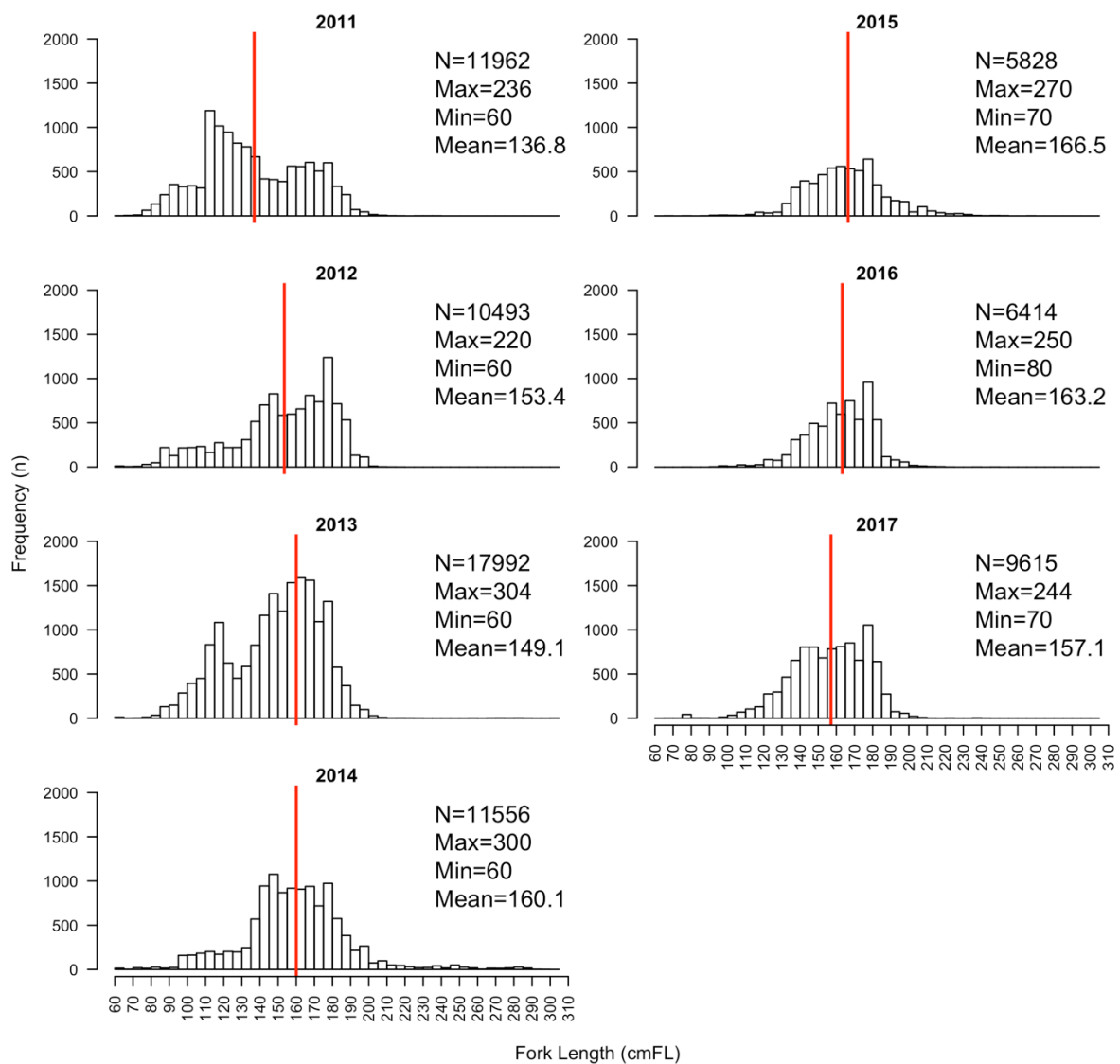


Figure 4. Length frequency distribution of all individual SBT according to CDS data from 2011-2017 (remarks= red line is mean length).

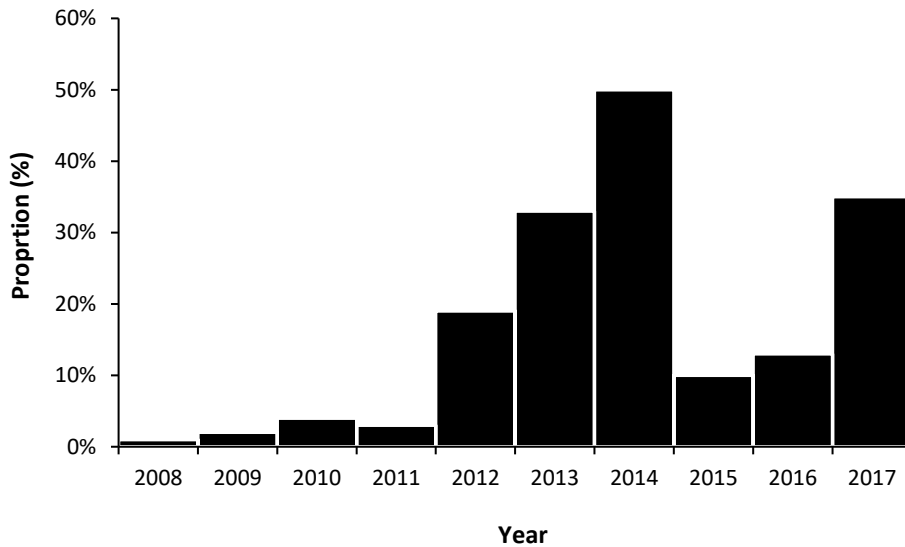


Figure 5. Proportion of small SBT (<150 cmFL) caught during calendar year 2008-2017

### Scientific Observer

Regular scientific observer activity deployed in 4 trips on tuna longline vessels. Total day-at-sea ranged from 49 to 69 fishing days per trip with total efforts of 192,188 hooks. Geographically, the capacity of scientific observer covered the fishing ground of statistical area 1 and 2. Observer coverage was 3.6% in term of total active vessels. The operational aspects were showed in Table 1.

Table 1. Observer activities in authorized Fishing Vessels in 2017.

Trip	Base	Date	DAS	No of Settings	No of Hooks	No of SBT	HR (x10 <sup>3</sup> )	CCSBT Statistical Area
1	Cilacap	16/09/17	69	22	48,112	0	0.000	1
2	Cilacap	16/09/17	63	37	42,180	0	0.000	1
3	Cilacap	18/10/17	51	29	37,936	0	0.000	1
4	Benoa	10/11/17	49	32	63,960	197	3.080	2

### Hook rates

Total number of SBT caught during the observations was 197 individuals. All SBT caught in the statistical area 2. Hook rates of SBT ranged from zero to 3.080 (Table 2).

Table 2. Estimated Hook-rates of SBT by observer trip on authorized fishing vessels

SBT					
TRIP	n	HR	Length (cmTL)		
			Average	Min	Max
1	0	0.000	-	-	-
2	0	0.000	-	-	-
3	0	0.000	-	-	-
4	197	3.080	157.58	135	197

### Ecological related species

Lancet fish (*Alopiusaurus ferox*), escolar (*Lepidocybium flavobrunneum*), Pelagic stingray (*Pteroplatytrygon violacea*) and blue shark (*Prionace glauca*) were the most common ERS caught during observation, a number of olive ridley turtle (*Lepidochelys olivacea*) and seabirds namely shy albatross (*Thalassarche cauta*), sooty albatross (*Phoebetria fusca*) and great-winged petrel (*Pterodroma macroptera*) also incidentally caught. Total number of 2,686 specimens were recorded during observation. List of ecological related species listed, estimated hook rates of each ERS will be submitted in the upcoming CCSBT ERSWG meeting.

### Research activities

Some annual research projects to strengthen scientific and technical basis of data base on tuna fisheries are activities that has been regularly improved since 2013. The project are as follows:

- Improvement on catch estimation from landing data was carried out since last year to reduce any over/underestimate.
- Collecting SBT otolith in spawning ground is still the major activity to provide data base. This regular activity under supervised by CSIRO scientist.
- Collecting sample to support close kin analysis in collaboration with CSIRO-Australia were regularly carried out.
- Collecting gonad sample to provide data for SBT maturity in spawning area

### Acknowledgements

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Appendix 1. Annual catches of SBT reported to CCSBT 2004-2016

Year	Total catch of SBT (tons) - Indonesia		
	National Fisheries		
	Reported to CCSBT	Statistics	Catch estimate
2004	633	665	613
2005	1,726	1,831	1,690
2006	598	747	558
2007	1,077	1,079	1,077
2008	926	891	905
2009	641	641	641
2010	636	636	580
2011	842	842	769
2012	910	910	817
2013	1,383	1,383	722
2014	1,063	1,063	1,187
2015	593	593	593
2016	601	601	601
2017	835	835	835

Appendix 2. Catch of southern bluefin tuna by statistical area (in tons)

Year	Area1	Area2	Area8	Area9	Area14	All
2011	616	30	175	17	4	842
2012	676	218	10	6	0	910
2013	1,061	241	74	6	0	1,383
2014	802	121	140	0	0	1,063
2015	593	0	0	0	0	593
2016	601	0	0	0	0	601
2017	700	135	0	0	0	835

Appendix 3. Catch of southern bluefin tuna caught by Indonesian longliners by month (in tons)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
2011	69	61	97	78	62	17	67	70	79	117	48	77	842
2012	68	75	53	44	12	20	49	110	147	128	99	105	910
2013	156	245	232	114	18	21	28	93	126	105	134	110	1,383
2014	86	119	102	54	26	35	30	84	86	127	148	167	1,063
2015	83	92	129	59	5	1	3	6	37	64	39	74	593
2016	75	131	95	56	33	24	30	28	49	39	12	29	601
2017	82	98	104	68	14	0	3	46	98	119	134	68	835

Appendix 4. Updated annual activities of scientific observer based in Benoa Bali from 2005 to 2016

Year	No. Of Obs	No. Of Trips	No. Of Company	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	5	6	3	210	30-50	40
2012	6	7	5	496	33-208	83
2013	5	3	3	170	52-60	57
2014	8	6	4	371	29-90	62
2015	4	5	5	241	31-61	48
2016	3	3	3	170	32-86	57
2017	4	4	2	232	49-69	58