

INDONESIA SOUTHERN BLUEFIN TUNA FISHERIES¹
A National Report Year 2016

Prepared by

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SUMMARY

Southern bluefin tuna (*Thunnus maccoyii* Castelnau, 1872) is one of the tuna species seasonally caught by Indonesian tuna longliner operating in Indian Ocean. Based on 2016 Catch Documentation Scheme (CDS), number of active longline vessels was 107 units, caught around 601 tons or about 6,414 individuals of SBT. The SBT were caught at size ranged from 80-250 cmFL, with mean of 163.24 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 2016. Historically, longlining was introduced to Indonesia by Japan in the 1930s (Sadiyah & Prisantoso, 2011), however, 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 longline fisheries since late-1970s (Farley *et al.*, 2014). Among the tuna fishing ports, this species mainly landed in Bena. SBT catch monitoring is regularly conducted by Research Institute for Tuna Fisheries (RITF) through port monitoring and scientific observer program. The port monitoring program firstly 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 fully support and conducted by RITF. Since became a full member of 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 catches occurred in February and the lowest was in June. All the SBT were reported to be caught in the CCSBT statistical area 1. Since the largest market for SBT was Japan, Indonesia also processed all the SBT caught in GGT (Gilled and Guttled, 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 2016 was 601 t, and the total catch number approximately was about 6,414 individuals. To be noted, this report only provides the total catch of SBT caught based on CDS data. As for the number of effort used, is still waiting for the logbook data become available. 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.

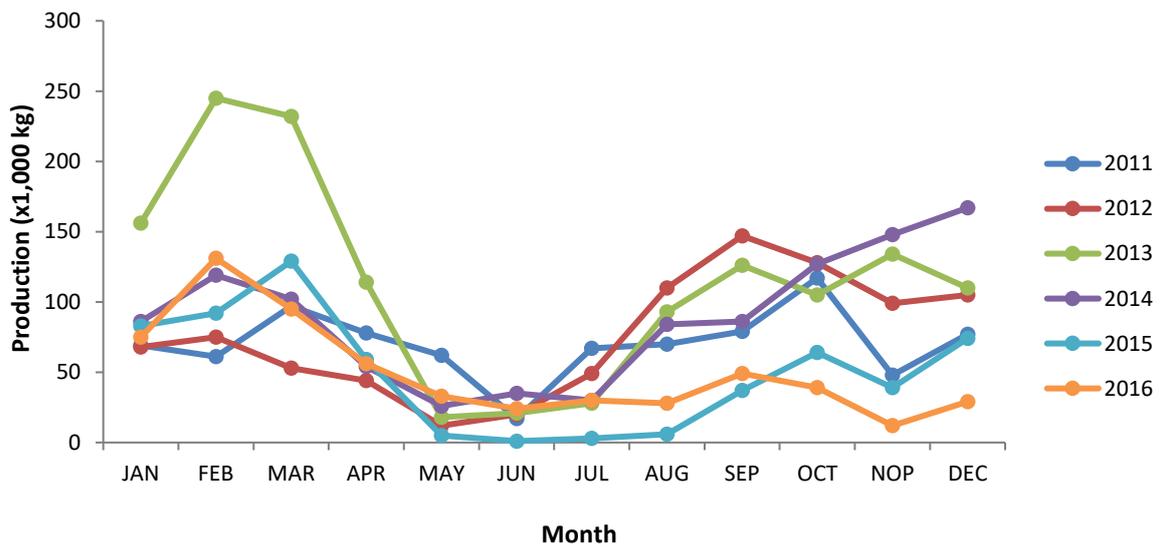


Figure 1. Catch of southern bluefin tuna caught by Indonesian longliners by month from 2011-2016 (Source: CDS data).

Catch Documentation scheme (CDS)

The 2016 CDS data indicated that 107 authorized tuna longliner involved with SBT. All the catch data from statistical area 1 with length ranged at 80 to 250 cmFL. The fishing pressures of the SBT in statistical area 1 as represented by number of active vessels were relatively similar compared to 2015 (112 longliners), but the documented catch increased around 1.3% or 8 t. There is no data reported from other statistical areas (Appendix 1). The documented catch based on SBT CDS data was 601 tons, this is 20% less than agreed TAC for Indonesia (Figure 2).

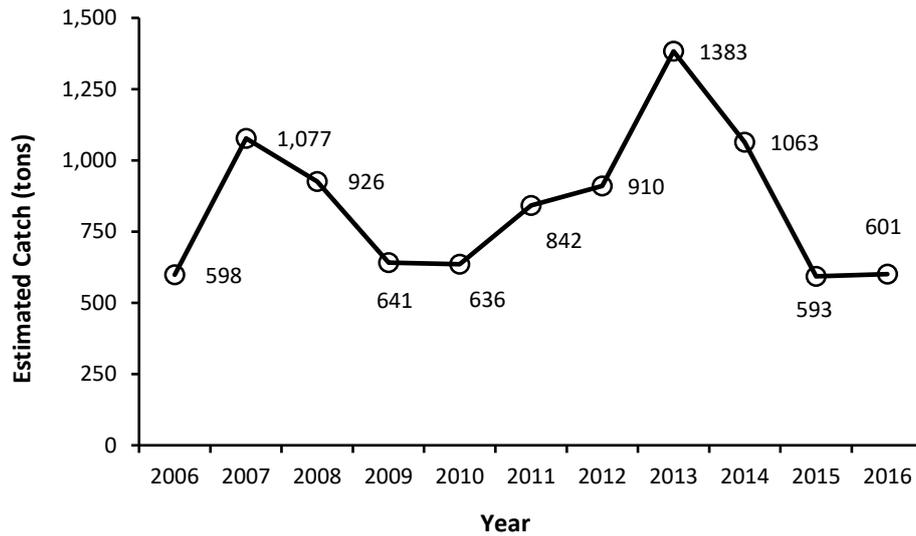


Figure 2. Total catch reported (raised weight in tons) of southern bluefin tuna from 2006-2016.

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 from 2006 to 2011 but relatively stable since 2012. As for the number of active vessels was relatively stable between 107 to 190 unit (Figure 3).

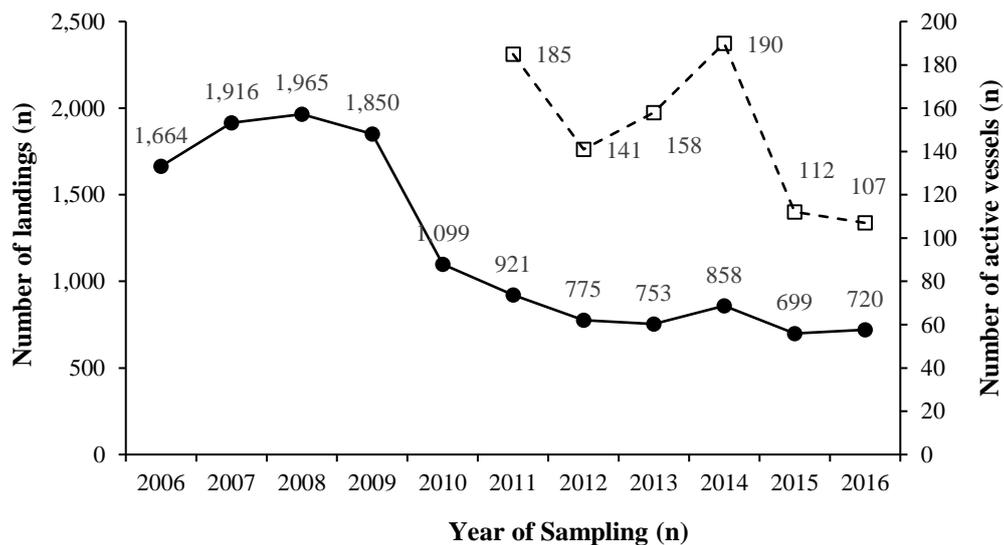


Figure 3. Number of active longline vessels recorded by CDS from 2011 to 2016

Length frequency distribution

Catch-at-size of SBT monitored by port sampling program, scientific observer program and CDS data. In order to avoid discrepancies, this report using size data obtained from CDS. During 2016 fishing season indicates that a total of 6,414 SBT specimens were measured and

weighted to the nearest kilograms. The length frequency distribution showed similar pattern compared to the previous year. The size frequency during period of year 2016 ranged between 80 cm to 250 cmFL with an average of 163.24 cmFL (Figure 4). In the last two years the proportion of small size (<150 cm) caught relatively stable at around 20% (Figure 5).

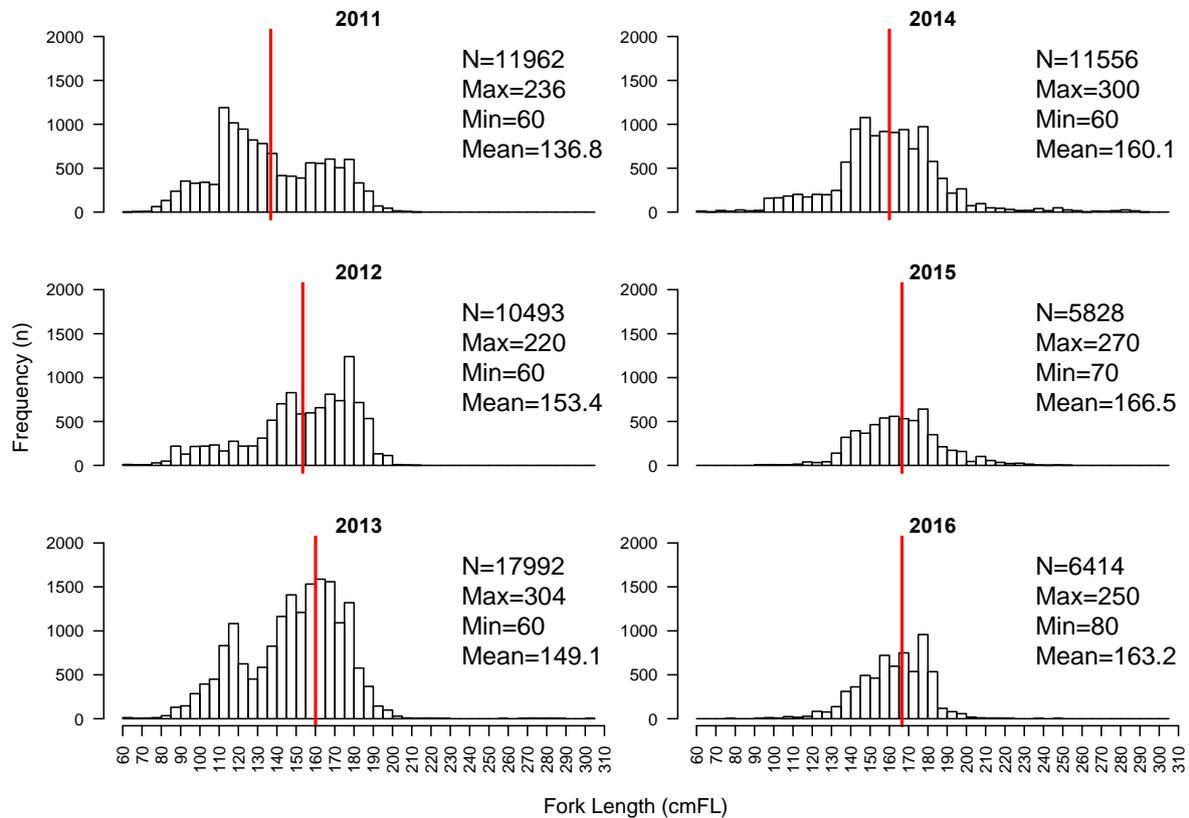


Figure 4. Length frequency distribution of all individual SBT according to CDS data from 2011-2016 (remarks= red line is mean length).

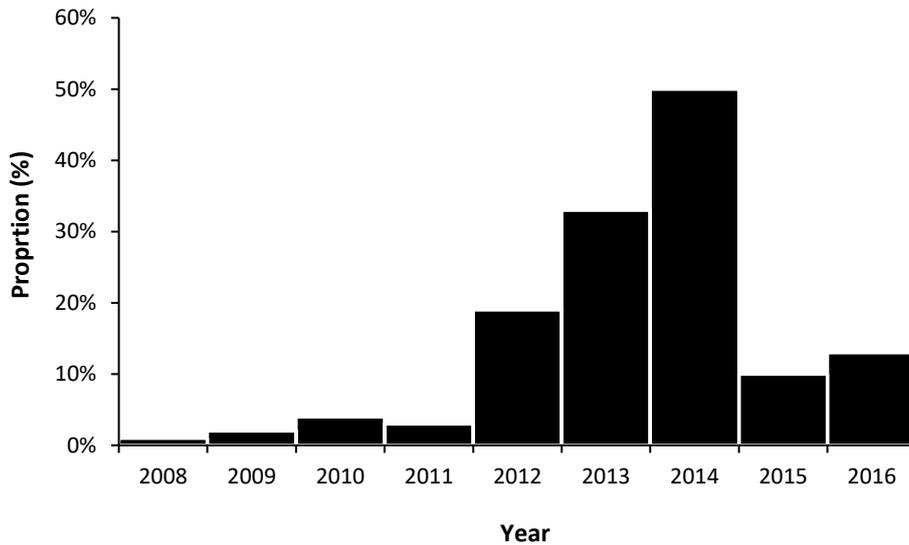


Figure 5. Proportion small SBT (<150 cmFL) caught during 2008-2016 season (September to April)

Scientific Observer

Regular scientific observer activity deployed in 3 trips on authorized fishing vessels. Day at sea ranged from 35 to 86 fishing days per trip with total efforts of 175,868 hooks. Geographically, the capacity of scientific observer covered the fishing ground of statistical area 1. Observer coverage was 2.59% in term of total fleets. Geographically, the capacity of scientific observer covered the fishing ground of statistical area 1. The operational aspects were showed in Table 1.

Table 1. Observer activities in authorized Fishing Vessels in 2016.

Trip	Base	Date	DAS	No of Settings	No of Hooks	No of SBT	HR (x10 ³)	CCSBT Statistical Area
1	Muara Baru	1/5/16	52	35	57,750	0	0.000	1
2	Cilacap	2/18/16	86	73	94,468	4	0.042	1
3	Benoa	7/23/16	32	22	23,650	0	0.000	1

Hook rates

Total number of SBT caught during the observations was 4 individuals. All SBT caught in the statistical area 1 (spawning ground). Hook rates of SBT ranged from zero to 0.042 (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	4	0.042	177.5	172.0	180.0
3	0	0.000	-	-	-

Ecological related species

Lancet fish (*Alopiasaurus ferox*), escolar (*Lepidocybium flavobrunneum*) and pelagic stingray (*Pteroplatytrygon violacea*) were the most common ERS caught during longline operation. Total number of 2,061 specimens were recorded during observation. List of ecological related species listed, estimated hook rates of each ERS are already reported in the 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.

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

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

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

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