

## **MONITORING PROGRAM OF INDONESIA SBT CATCH**

### **I. INTRODUCTION**

Tuna and tuna like-fishes are significant species in the Indonesian waters, either in the territorial waters and in the Indonesia's EEZ. The yellow fin tuna, albacore and big eye are the dominant species which commonly caught by the fishing operation in the Indonesian's EEZ.

The distribution of SBT fishes in Indonesia occur in the Southern part of Java island, Bali and West Nusa Tenggara, i.e. between 103° – 128° E and 7° – 17° S. This area is also presumed as a spawning area or mature SBT that have migrated from Southern waters to spawn ( Davis et al, 1999).

Three major ports, namely port of Muara Baru, Jakarta, port of Cilacap, Central Java and port of Benoa, Bali are used to export the tuna caught from the southern part of Indonesia. From those three ports, Benoa is the most important one for the SBT, since it is closer to the SBT spawning grounds.

Besides the regular monitoring conducted by the statistical division under the Directorate General of Capture Fisheries, researches with regards to the SBT had been also conducted many times in order to obtain the actual estimation of the SBT product from Indonesia, since the Indonesian statistical data on tuna capture is presented as an aggregate. In addition, issue on the IUU-fishing is becoming serious and increasing concern, especially in determining the real product of SBT in Indonesia.

### **II. REGULATORY MEASURES**

There is no special regulation with regard to the monitoring of the Southern Blue fin Tuna, however, under the Indonesian Fisheries Act No. 9/1985, Article 14 stated that in order to implement the management and the utilization on the fish resources as well as an arrangement on the fisheries development plan and its evaluation, it require technical data and fisheries production which could give the accuracy on the level of the available fish resources.

The data covers : (a) type, total number and size of the fishing vessel, (b) type, total number of fishing gear , (c) fishing season, fishing ground, total catch, (d) total area of aquaculture and their product, (e) number of fishermen and (f) production, measurement of fish caught, spawning season, etc.

Based on the above mentioned, the Indonesian Government issued some regulations, among others :

- Minister of Agriculture Decree No. 995 of 1999 on Fish Resources Potentials and their TAC's (which will be used as the basis for providing various licenses. The potential of fisheries resources and their TAC's to be reviewed at least every three year.
- Government Decree No. 15 of 1984 on Fisheries Resources Management in Indonesian EEZ. In the article 4, the Minister for Agriculture shall determine the Total Allowable Catch for each species of fish resources in Indonesian EEZ. The Total Allowable Catch shall be determine in the light of the finding of research, surveys, evaluation of fishing activities. Article 5, the minister of agriculture shall determine the number of fishing vessels and fishing gears allowed to each vessel bearing in mind the Total Allowable Catch determined pursuant to Article 4.
- Minister of Agriculture Decree No. 607 of 1976 Juncto Minister of Agriculture Decree No. 392 Of 1999 Concerning with Fishing Zonation.

### **III. MONITORING SYSTEM**

#### **COLLECTING SYSTEM OF MARINE FISHERIES STATISTICAL DATA**

Capture fisheries statistical data are collected through capture fisheries production survey, carried out by a collaboration among the Directorate General Of Capture Fisheries (DGCF), the Provincial Fisheries Service and the Fisheries Service at city or regent level. The DGCF is responsible for providing survey methodology, supervising the implementation of the survey, processing and analyzing data, and producing national capture fisheries statistical data. The Provincial Fisheries Service is responsible for determining survey design based on the survey methodology set up by the DGCF, supervising the implementation of

survey at city or regent level, and producing provincial capture fisheries statistical data. The Fisheries Service at city or regent level is responsible for collecting data based on the method and data collection forms set up by the DGCF, guiding data collecting personals, processing data, and writing reports on capture fisheries statistics at city or regent level.

Broadly, marine fisheries statistics collected consists of yearly, monthly, weekly and quarterly data. Yearly data collected include: (a) number of fisheries household/fisheries company, number of boat/motor boat and fishing unit, and (b) number of fisheries household, number of boat/motor boat and marine fish seed fishing unit. Monthly data collected include: (a) number of fishing trip, fish catch and value of fishing company, and (b) number of fishing trip, fish catch and value at fish landing place. Weekly data collected include: fish catch of sampled boat/motor boat landed at main fish landing centers. Quarterly data collected include: number of fishing trips, marine fish catch and value, and (b) number of fishing trips, marine fish seed catch and value.

Fishing trip and catch data are collected through 3 different approaches or 3 different surveys, i.e. L-I, L-II and L-III surveys. L-I survey is conducted monthly to collect data from fishing companies which export most of their catches. L-II survey is conducted monthly at fish landing places that record data regularly, or weekly at main fish landing centers through sampled boat or motor boats. L-III survey conducted quarterly through fisheries house holds at sampled villages.

Up to now, in marine fish statistics, tuna catch data is not presented by species but as an aggregate. However in the near future tuna catch will be presented by species. To implement this plan, at present the DGCF is improving survey method and data forms needed, and conducting training for data collecting personals.

In improving tuna catch statistics from Indian Ocean, in 2002 there is a collaboration work among the Indian Ocean Tuna Commission (IOTC), Overseas Fishery Cooperation Foundation (OFCF) and the DGCF through activities of Enhancing the data collection and processing system for tuna resources in the

Indian Ocean. Memorandum of understanding (MOU) among the three parties was signed on June 28, 2002, and effective until March 31, 2003. This activity has been carried out in the DGCF, Jakarta Oceanic Fishing Port, Cilacap National Fishing Port, and Benoa Public Port. OFCF provided funds, IOTC prepared data processing software and guiding technical activities, while the DGCF conducted data processing from fishing companies which got licenses from DGCF, coordinating activities at the three ports, prepared report of activities, and the three ports collected and processed data from fishing boats landed at the ports. So far results of this program are not available right now because the data are being processed by IOTC.

#### Monitoring System

1. Enumerator Program
2. Observer Program

Fisheries data recording is conducted to support development of information system which is stated in the Article 14 of the Fisheries Act No. 9, 1985. In controlling Indonesian waters and fishing industries, log book and other forms must be filled and submitted to the authority in accordance with Ministry Of Marine Affairs and Fisheries Decree No. 3/2002 on fisheries activity report.

Other measures of controlling include the obligation to report for joint ventured vessels at the check point ports assigned by the government as mentioned in the Ministry Of Marine Affairs and Fisheries Decree No. 476/1986 juncto Ministry Of Marine Affairs and Fisheries Decree No. 144/1993.

### **1. Enumerator**

One of the data collecting systems is using enumerator which is implemented almost in all fish landing places all over Indonesia.

#### **1.1 Purpose**

The task of enumerator is to collect biological data, such as length, weight, sex ratio, maturity index of economically important fish, and fisheries data such as number and kind of fishing gears.

## **1.2 Source of Enumerator**

Enumerators are assigned by Fisheries Research Institution or Directorate General of Capture Fisheries. Enumerators may be recruited from students of universities, employees of Fisheries Services, personals of Fish Landing Places or freelances.

At present, to support the collaboration among Indonesian Government, ACIAR, IOTC and OFCF in monitoring tuna catch in Indian Ocean, some enumerators have been assigned in Benoa, Cilacap and Muara Baru as three main long line tuna landing centers.

## **2. Observer**

To collect fisheries data, particularly fish catch, fishing gear and fishing ground, observers have been placed in fishing vessels all over Indonesia. Data collected by observers are used to fulfill the national needs as well as the international cooperative research dealing with different kind of fish and fishing gears.

### **2.1. Purpose**

Observer is assigned to collect onboard data such as length, weight, sex ratio, and maturity index of economically important fishes, as well as fisheries data, such as number and kind of fishing gears and fishing grounds, during fishing trip.

### **2.2. Source of observers**

Observers are assigned by Fisheries Research Institution or Directorate General of Capture Fisheries. Observers may be recruited from students or graduates of universities, employees of Fisheries Services, personals of Fish Landing Places or freelances. To simplify data collection onboard, observers are equipped with log book designed based on kind of fishes and kind of data needed.

Particularly for tuna fisheries in Indian Ocean, observers are assigned by the Marine Fisheries Research Institute to observe tuna long line fishing operation. There are three ports selected, i.e. Benoa (Bali), Cilacap (Central Java) and Muara Baru (Jakarta).

## IV. DATA AVAILABLE

### 1. Fishing Fleet

There are various types of fishing gears used to catch tuna in Indonesian waters, such as : purse seines, gill nets, troll lines, long lines and pole and lines. Among these, the long lines are the most popular one to catch tunas. Others are used widely by small scale and large scale fishing companies.

During September 2001 – January 2002, the government of Indonesia has conducted re-registration of fisheries business and fishing licenses to update fishing vessel data. It was recorded that the total number of long-liner having license to operate in the Indian Ocean was 850 units (Table)

Table. Number of long liners having licenses in Indian ocean IEEZ (by March 3, 2003)

Size of Vessel	Total
30 – 50 GT	259
50 - 100 GT	709
100- 200 GT	850
200- 300 GT	4
> 300 GT	23
Total	1845

### 2. Catch Data

The source on available data of tuna fisheries in Indonesia came from statistical report, and research activities. The total catch of tuna from the statistical report in the Indian Ocean in 1996 - 2000 which contribute from province of Jakarta, Yogyakarta, south West-Java, south Central-Java, south East-Java, Bali, NTB and NTT are as follows :

Unit : Tones

YEAR	1996	1997	1998	1999	2000	Average Increment (%)
TOTAL	115,550	116,214	168,122	136,474	163,241	11.51
Jakarta	13,786	17,840	9,741	11,995	7,506	-7.57
Yogyakarta	18	4	0	1	1	-63.19
West Java (Southern Part)	318	608	804	584	723	29.97
Central Java (Southern Part)	239	642	880	880	5,084	170.85
East Java (Southern Part)	217	310	193	306	229	9.63
B a l i	10,929	8,142	14,538	11,907	26,768	39.94
West Nusa Tenggara	139	232	391	626	1,421	80.64
East Nusa Tenggara	1,737	1,581	29,973	4,179	3,876	423.38
Other areas	88,167	86,855	111,602	105,996	117,663	-672.14

Based on the research activity conducted by CSIRO and RIMF regarding the trend in tuna landings by the long line fishery operating out on Benoa, Bali from 1993 to 1996, it obtained that from five major tuna

caught (Yellow Fin, Big Eye, Southern Blue Fin, Albacore and Bill Fish), the Southern Blue Fin tuna places number 3. (As shown in the table below)  
 Estimate total and proportion (%) of tuna and billfish in long line landings at Benoa from 1993 to 1996.

Species	1993		1994		1995		1996	
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
YFT	15,023	63.8	11,188	62.9	10,566	57.7	10,868	43.3
BET	5,819	24.7	4,992	28.1	5,922	32.3	10,382	41.4
SBT	1,205	5.1	805	4.5	747	4.1	1,373	5.5
ALB	677	2.9	291	1.6	377	2.1	1,025	4.1
BIL	833	3.5	509	2.9	704	3.8	1,435	5.7
Total	23,557	100.0	17,785	100.0	18,315	100.0	25,083	100.0

Remarks : YFT = yellowfin tuna, BET = bigeye tuna, SBT = Southern bluefin tuna, ALB = albacore and BIL = billfish

Sources : Davis, T.L.O. et. Al in Indonesian Fisheries Research Journal, Central Research Institute for Fisheries, Vol. No. 1, 1999

Based on the Indonesian Fisheries Statistical Report on tuna export, 1996 – 2000, the export is only presented by frozen and fresh tuna (as an agregate)

Appendix 1. As a National Tuna Export

Appendix 2. Present the Indonesian Fisheries Statistical Report on Tuna Export from the Indian Ocean.

Appendix 3. Frozen