SCIENTIFIC COMMITTEE
SIXTH REGULAR SESSION

10-19 August 2010
Nuku'alofa, Tonga

ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

WCPFC-SC6-AR/CNM-32

INDONESIA

INDONESIAN FISHERIES
IN
WCPFC CONVENTION AREA

Indonesia's Application for Cooperating Non-Member Status
Of the Western and Central Pacific Fisheries Commission (WCPFC)

PART ONE

MINISTRY OF MARINE AFFAIRS AND FISHERIES
THE REPUBLIC OF INDONESIA
2010

INDONESIA FISHERIES IN WCPFC CONVENTION AREA

BACKGROUND

As an archipelagic nation, Indonesia covers with 5.8 million km of marine fisheries area, which consist of 3.1 million km of territorial water and 2.7 million km of Indonesian Exclusive Economic Zone. Geographical situation of marine fisheries areas provide interaction with the convention area of WCPFC at Sulawesi Sea as well as Indonesia EEZ in Pacific Ocean where presence of at highly migratory species is obvious.

Internationally, fisheries resources identified as highly migratory resources should follow several international and regional measures or guidelines, such as UNCLOS 1982, FAO-Compliance Agreement1993,UN Fish Stock Agreement 1995 and FAO-Code of Conduct for Responsible Fisheries (CCRF).

Indonesian Law Number 31/2004 of Fisheries in Article5 (2) stipulated that fishery management outside the Fishery Management Zones of the Republic of Indonesia shall be carried out inconformity with the laws and regulations, prerequisites, and/or generally accepted international standards. It is conducted to achieve the optimum and sustainable benefits while ensuring sustainable fishery resources (Article6 (1)). Furthermore, Article10 stipulated that the Government shall participate actively in the membership of any body/institution/ organization at the regional or international levels with respect to the cooperation for regional and international fishery management.

Indonesia has ratified UNIA 1995 through Act. Number 21 year 2009. The objective of this ratification is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the UNCLOS 1982.

NOMINAL CATCHES IN FISHERIES MANAGEMENT AREA VIII

The nominal catches in Fisheries Management Area 716 (IEEZ Sulawesi Sea) and 717 (IEEZ Pacific Ocean) is as the following table.

Table 1. Nominal Catches in Fisheries Management Area
716 IEEZ Sulawesi Sea and 717 IEEZ Pacific Ocean 2003-2009

Species	2003	2004	2005	2006	2007	2008	2009
Total	**105,403**	**107,724**	**127,679**	**134,853**	**151, 554**	**103,725**	**101,265**
Albacore	-	5,254	8,186	7,667	8,488	-	-
Bigeye Tuna	-	7,917	7,987	9,033	9,985	3,622	4,561
Yellofin Tuna	36,021	26,733	24,339	18,214	26,503	26,233	27,302
Southern Bluefin Tuna	-	-	-	-	-	-	-
Longtail Tuna	-	9,053	12,264	12,027	12,890	-	-
Bullet Tuna	-	-	-	-	-	-	-
Frigate Tuna	-	2,935	5,219	7,003	8,220	-	-

Kawa-Kawa / Eastern Little Tuna	14,575	3,802	4,374	5,078	4,251	-	-
Skipjack Tuna	54,807	51,943	65,223	75,718	79,984	73,870	69,402
Indo-pacific Sailfish	-	70	100	171	236	-	-
Black Marline	-	19	5	20	65	-	-
Indo-pacific Blue Marlin	-	-	-	-	-	-	-
Stripped marlin	-	-	-	-	-	-	-
Swordfish	-	-	-	-	-	-	-

THE NUMBER OF FISHING VESSELS OPERATING IN IEEZ SULAWESI SEA AND IEEZ PACIFIC OCEAN

There are several fishing vessels and fishing gears operated in Indonesian Economic Exclusive Zone. The following tables illustrated the number of fishing vessels based on fishing gear and size of fishing gear (GT) during the period of 2004 – 2008.

Table 2. Number of Fishing Vessels based on Fishing Gear
(716 IEEZ Sulawesi Sea and 717 IEEZ Pacific Ocean)

Fishing Gear	Years	716 (IEEZ Sulawesi Sea)	717 (IEEZ Pacific Ocean)
Large Pelagic Purse Seine	2004	9	63
	2005	83	78
	2006	85	80
	2007	92	88
	2008	220	218
	Increasing Average number of Fishing Vessels (%)	*243,0*	*46,0*
Small Pelagic Purse Seine	2004	6	17
	2005	10	14
	2006	14	18
	2007	12	18
	2008	17	26
	Increasing Average number of Fishing Vessels (%)	*33,5*	*13,8*
Long line	2004	1.211	237
	2005	242	255
	2006	204	209
	2007	176	182
	2008	131	134
	Increasing Average number of Fishing Vessels (%)	*-33,8*	*-12,4*
Pole and Line	2004	-	6
	2005	10	8
	2006	10	7

	2007	6	3
	2008	5	4
	Increasing Average number of Fishing Vessels (%)	-	*-0,7*

Table 3. Number of Fishing Vessels based on Sizes of Fishing Vessels (716 IEEZ Sulawesi Sea and 717 IEEZ Pacific Ocean)

Size of Fishing Vessels (GT)	Year	716 (IEEZ Sulawesi Sea)	717 (IEEZ Pacific Ocean)
< 30	2004	15	6
	2005	10	9
	2006	8	7
	2007	8	7
	2008	8	8
	Increasing Average number of Fishing Vessels (%)	*-13,3*	*10,5*
30 – 50	2004	126	61
	2005	57	56
	2006	45	43
	2007	44	42
	2008	48	48
	Increasing Average number of Fishing Vessels (%)	*-17,2*	*-4,9*
50 – 100	2004	441	164
	2005	182	191
	2006	163	170
	2007	152	161
	2008	204	214
	Increasing Average number of Fishing Vessels (%)	*-10,4*	*8,3*
100 -200	2004	657	84
	2005	80	83
	2006	83	79
	2007	61	60
	2008	83	81
	Increasing Average number of Fishing Vessels (%)	*-18,6*	*1,2*
200 – 300	2004	17	9
	2005	11	10
	2006	10	9
	2007	11	10
	2008	6	6

	Increasing Average number of Fishing Vessels (%)	*-20,0*	*-6,9*
300 – 500	2004	8	3
	2005	3	3
	2006	4	4
	2007	8	8
	2008	21	21
	Increasing Average number of Fishing Vessels (%)	*58,3*	*74,0*
500 – 1000	2004	11	9
	2005	10	10
	2006	9	10
	2007	8	9
	2008	7	8
	Increasing Average number of Fishing Vessels (%)	*-10,7*	*-2,5*
> 1000	2004	-	1
	2005	1	1
	2006	1	1
	2007	1	1
	2008	2	2
	Increasing Average number of Fishing Vessels (%)	-	*25,0*

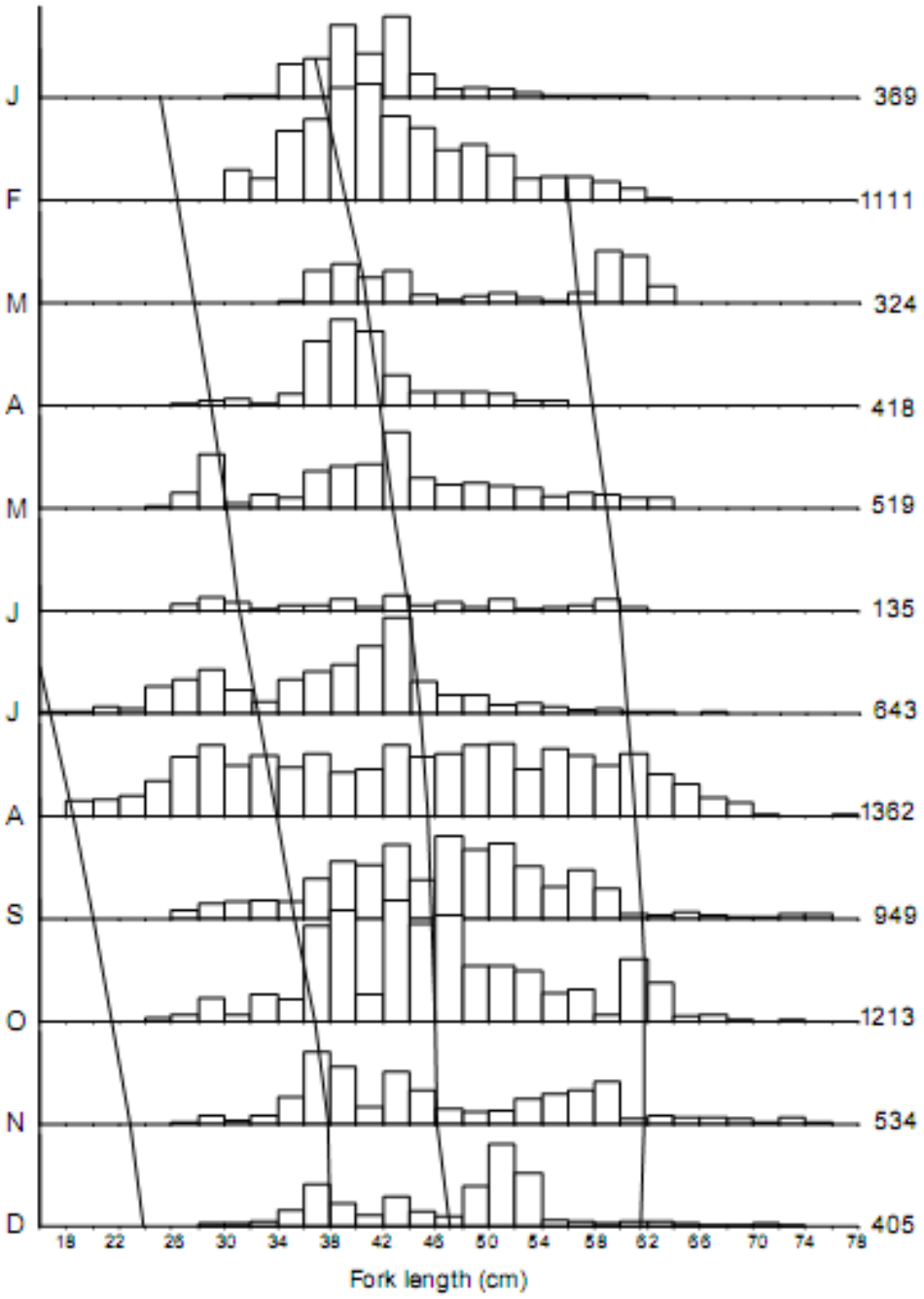
INDONESIAN RESEARCH PROGRAMMES IN THE CONVENTION AREA

Indonesia has conducted some research programmes in the convention area. The result of those research programmes could be summarized as follow:

1. Composition of pelagic species in Pacific Ocean is categorized into tuna, skipjack, eastern little tuna, marlin, swordfish, narrow barred king mackerels, and shark. Three main big pelagic fishes such as yellow fin tuna, skipjack, and little tuna play important role in that tuna fisheries and are dominant which about 66% of total catch. The second dominant pelagic fish is yellow fin tuna and it was exploited from juvenile size (less than 30 cm) up to mature size (170 cm).

2. The length of yellow fin tuna is ranging from 20 – 172 cm and 0,4 – 82 kg in weight. While for skipjack tuna, 19 – 89 cm in length and 0,1 – 5,2 kg in weight. And big eye tuna 80 – 110 cm and 10,0 – 22,0 kg in weight.

3. Growth pattern for skipjack tuna is identified as allometric positive with value $b > 3$ ($B = 3.2005$), while yellow fin tuna has allometric negative with $b < 3$ ($b = 2.7213$).



4. Comparison of male sex between skipjack and yellowfin tuna tends to be higher than their female.

5. Fishing season for tuna reach its peak on December-January and June.

6. Gonad maturity Level for skipjack is found in I, II, III and IV level and abundant in level.

7. Fecundity for yellow fin tuna is 4,992,000 - 129,223,500 eggs with fork length 93-133 cm, while for skipjack 1,176,142 - 12,725,000 eggs.

8. Gastric organ in yellow fin tuna showed its main feed contained 54% of scads (Malalugis), while other species like threadfins, deho, diodon and shrimp feed was dominated by scads which contained 57,681% while sardines, Indian mackerel and crabs acted as complimentary feed.

9. Skipjack dynamic population can be described as follows: growth rate (K) = 0.29; asymptotic length ($L\infty$) = 79.8; natural mortality rate (M) = 0.6; catch mortality rate (F) = 0.53); total mortality rate (Z) = 1.13; exploitation rate (E) = 0.44; and year maximum (t max) = 6 years (Figure 1).

10. Most of skipjack were migrated near rumpon and it gave the consequences that its installation has been increased during the period 1999-2003. Fishing gear that used in skipjack fisheries are including pole and line, hand line, gillnet and purse seine.

11. The development of Catch per Unit Effort (CPUE) of skipjack trends to fluctuate in declining trend on the previous years and this phenomenan showed decreasing resources of stock.

12. Based on the biology and stock indicator, it is obviously seen that skipjack exploitation in Pacific Ocean were overexploited. Therefore, rational management is urgently required in order to sustain resources.

13. In 2008, Indonesia conducting research on biological aspect of tuna and skipjack. This research held to support WCPFC project on the Indonesia and Philippines Data Collection Project.