SCIENTIFIC COMMITTEE
TWELFTH REGULAR SESSION

Bali, Indonesia
3-11 August 2016

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

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REPUBLIC OF KOREA

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PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISITICS

Republic of Korea

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Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2016	**YES**

1. SUMMARY

Korea has two types of fishing gears, purse seine and longlines, that engage in fishing for tuna and tuna-like species in the WCPFC Convention Area. These fisheries are managed by the Distant Water fisheries Development Act of Korea. Total catch in the WCPFC convention area by the Korean fisheries in 2015 was 285,208 mt, which accounted for 4% greater and 4% lower than that of average for recent 5 years (2011-2015) and 2013, respectively. The catch of purse seine fisheries from 25 vessels active was 268,277 mt in 2015, which was 9% greater than that of average for recent 5 years and similar to those of 2014. The catch of longline fishery with 84 vessels active in 2015 was 16,931 mt, which 36% lower than those of average for recent 5 year and 2013. In purse seine fishery, skipjack and bigeye catches in 2015 were 4% and 36% greater than those of 2014, respectively, but yellowfin catch was 24% lower than that of 2014. In longline fishery, bigeye and yellowfin catches in 2015 were 39% and 28% lower than those of 2014. Purse seine fishing efforts ranged from 6,113 to 7,552 sets during 5 recent years, which showed the highest in 2013 and the lowest in 2015. Longline fishing efforts ranged from 32,551 to 75,715 thousand hooks during 5 recent years, which showed the highest in 2011 and the lowest in 2015. Purse seine fishing efforts in 2015 were moved eastward further and concentrated on the eastern area of WCPO than in previous

years, and longline fishing efforts in 2015 were relatively higher in the EPO than in previous years. The logsheet coverage in 2015 were 100% for both purse seine and longline, and the observer coverage in 2015 was 100% for purse seine and 6.6% for longline. To improve fisheries database management system and data cross-checking, in 2015 the NIFS and the Ministry developed an electronic logbook system enabling to monitor the state of being submitted from fishing vessel in real time and to manage/cross-check the data.

2. Tabular Annual Fisheries Information

Table 1(a). Annual catch and effort estimates for the Korean purse seine fishery by primary species in the WCPFC Convention Area, 2011-2015

Year	No. of sets	Catch (mt)				
		Total	SKJ	BET	YFT	OTH
2011	6,624	207,702	168,690	2,295	36,717	-
2012	7,337	262,192	210,613	900	50,677	2
2013	7,552	225,642	190,251	1,684	33,697	10
2014	6,882	270,048	222,825	1,366	45,856	1
2015	6,113	268,277	231,695	1,857	34,695	30

* Data for 2015 are preliminary.

Table 1(b). Annual catch and effort estimates for the Korean longline fishery by primary species in the WCPFC Convention Area, 2011-2015

Year	No. of hooks ($\times 10^3$)	Catch (mt)										
		Total	ALB	YFT	BET	BFT	SKJ	BLM	BUM	MLS	SWO	OTH
2011	75,715	30,736	670	7,881	15,282	0	23	331	1,415	73	1,340	3,723
2012	75,060	33,457	1,264	7,832	18,823	0	14	148	1,486	43	1,267	2,579
2013	62,852	24,429	1,155	5,716	12,818	0	51	90	1,727	90	1,214	1,568
2014	55,759	26,265	714	8,371	12,779	0	100	82	1,887	56	1,048	1,229
2015	32,551	16,931	713	6,069	7,745	0	68	131	1,251	39	553	363

* Data for 2015 are preliminary.

Table 1(c). Annual catch and effort of north Pacific albacore by the Korean longline fishery, 2012-2015

Year	Catch (mt)	Effort (days fished)
2012	182	NA
2013	171	NA
2014	117	NA
2015	35	NA

* Korea does not have any fishing vessels that fish for north Pacific albacore, and any north Pacific albacore catch is bycatch.

Table 1(d). Annual catch and effort of southwest striped marlin by the Korean longline fishery in the south of 15°S, 2012-2015

Year	Catch (mt)	Effort (number of fishing vessels)
2012	0.241	NA
2013	0.479	NA
2014	0.407	NA
2015	0	NA

* Korea does not have any fishing vessels that fish for southwest striped marlin, and any southwest striped marlin catch is bycatch.

Table 1(e). Annual catch of swordfish by the Korean longline fishery in the south of 20°S, 2011-2015

Year	CMM-flagged vessels south of 20°S		Chartered vessels		Other vessels fishing within the CCM's waters south of 20°S		
	Catch (mt)	Vessel numbers	Catch (mt)	Vessel numbers	Flag	Catch (mt)	Vessel numbers
2011	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-
2015	0.279	-	-	-	-	-	-

* Korea does not have any fishing vessels that fish for swordfish in the Convention Area south of 20°S, and any swordfish catch is bycatch.

Table 1(f). Annual catch and effort of south Pacific albacore by the Korean longline fishery in the south of 20°S, 2011-2015

Year	Catch (mt)	Effort (number of fishing vessels)
2011	-	-
2012	-	-
2013	-	-
2014	-	-
2015	0.493	-

* Korea does not have any fishing vessels that fish for south Pacific albacore in the Convention Area south of 20°S, and any south Pacific albacore catch is bycatch.

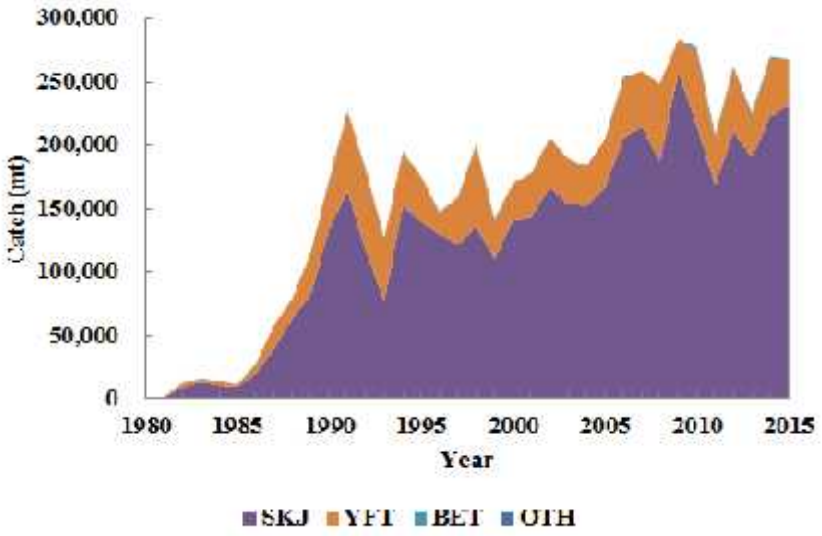

Fig. 1(a). Historical annual catch for the Korean purse seine fishery by primary species in the WCPFC Convention Area during 1980-2015.

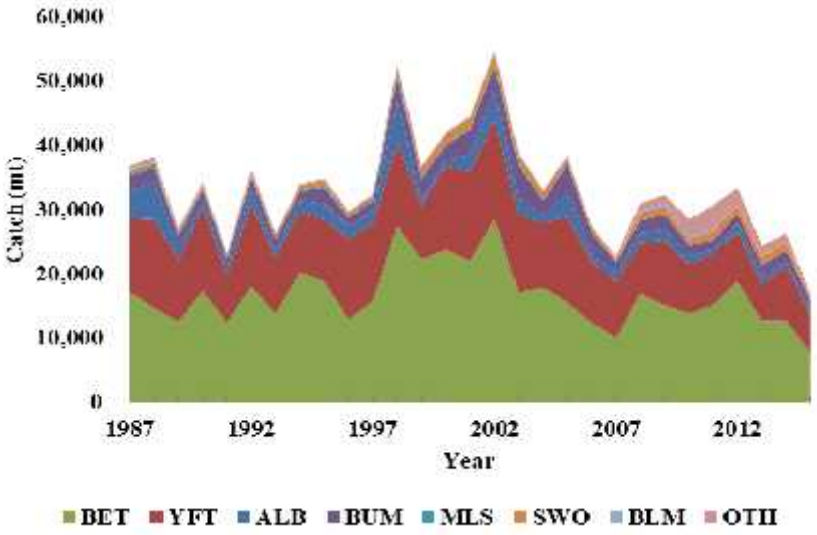

Fig. 1(b). Historical annual catch for the Korean longline fishery by primary species in the WCPFC Convention Area during 1987-2015.

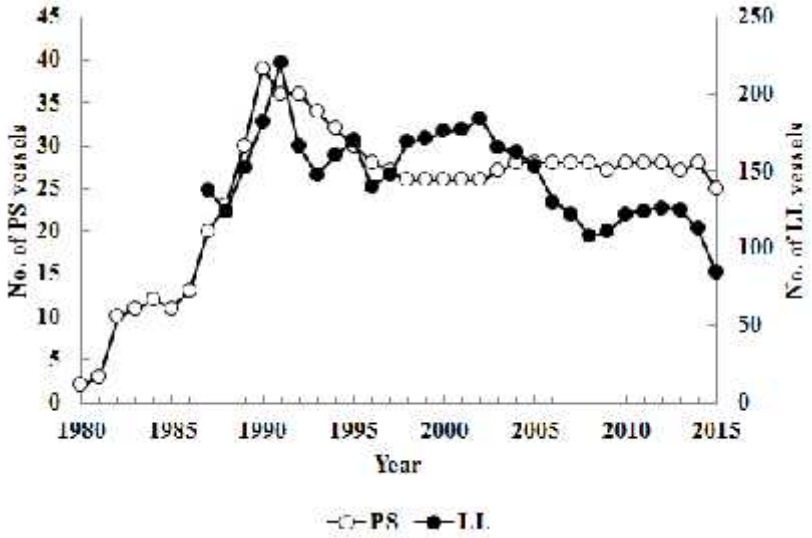

Fig. 2. Historical annual vessel numbers for the Korean tuna fisheries by gear in the WCPFC Convention Area during 1980-2015.

Table 2. Number of Korean vessels by gear and size, active in the WCPFC Convention Area, 2011-2015

Year	GRT class by gear									
	Longline					Purse seine				
	Total	0-50	51-200	201-500	500+	Total	0-500	501-1,000	1,001-1,500	1,500+
2011	124	-	-	124	-	28	-	12	11	5
2012	126	-	-	126	-	28	-	12	11	5
2013	125	-	1	124	-	27	-	12	10	5
2014	110	-	1	112	-	28	-	10	13	5
2015	84	-	1	83	-	25	-	8	12	5

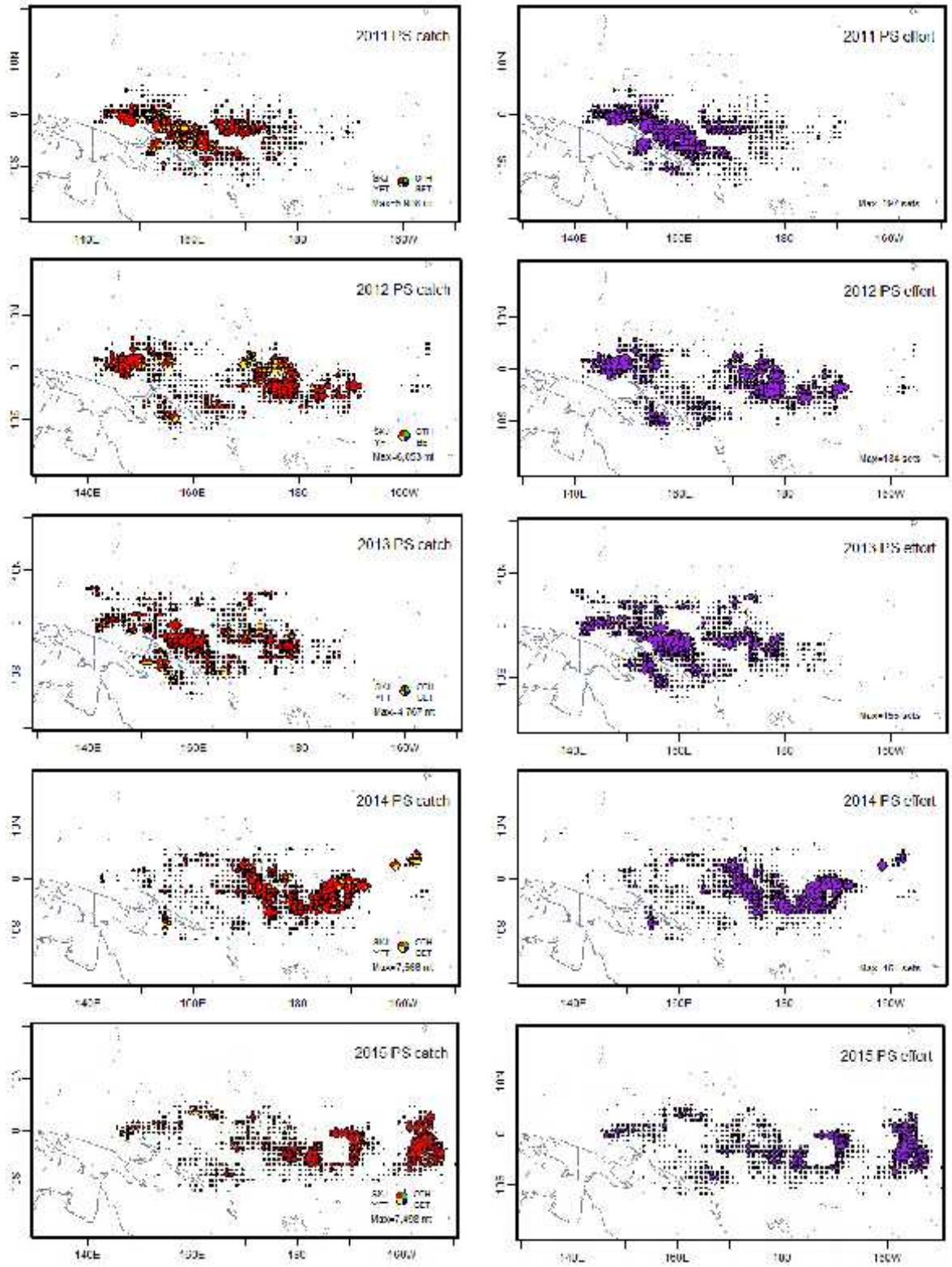

Fig. 3(a). Annual catch and effort distributions of target species by the Korean purse seine fishery active in the WCPFC Convention Area, 2011-2015.

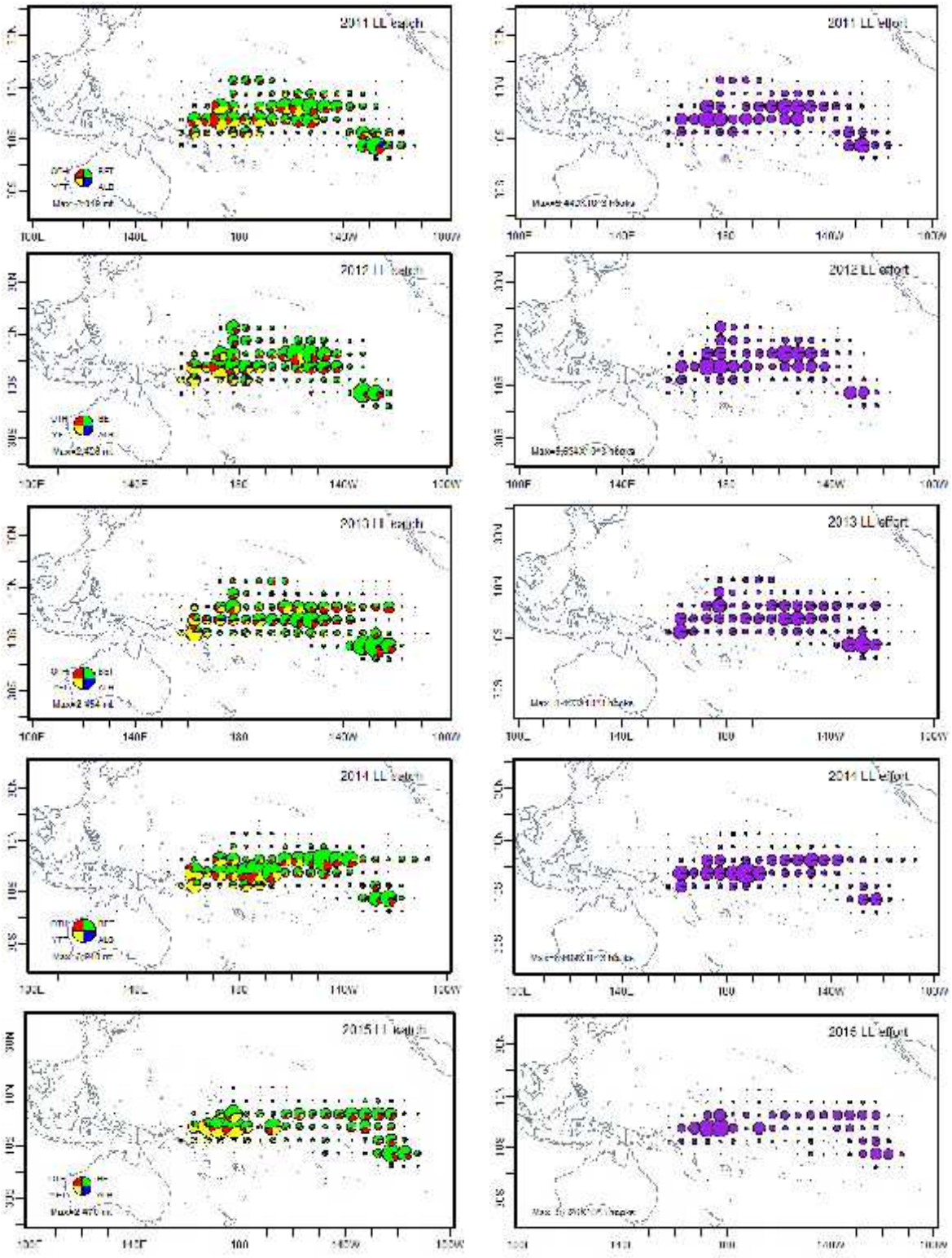

Fig. 3(b). Annual catch and effort distributions of target species by the Korean longline fishery active in the Pacific Ocean, 2011-2015.

Table 3. Annual estimated catch of species of special interest (seabird, turtle, marine mammals, etc.) by the Korean fisheries in the WCPFC Convention Area, 2013-2015

Fishery	Year	Catch (number) by species				
		Whale shark	Leatherback turtle	Olive ridley turtle	Loggerhead turtle	Other marine turtles
Purse seine	2013	30	1	1	10	27
	2014	8	-	-	5	-
	2015	21	-	-	12	-
Longline	2013	-	-	-	-	-
	2014	-	-	-	-	-
	2015	-	34	6	-	6

* No seabird and marine mammal were caught.

Table 4(a). Annual estimated catch of key sharks by the Korean longline fishery in the WPCFC Convention Area, 2011-2015

Year	Catch (mt) by key shark species						
	Blue shark	Thresher sharks	Hammerhead sharks	Mako sharks	Silky shark	Oceanic whitetip shark	Others
2011	9	1	<0.1	-	-	-	1,047
2012	68	33	4	6	4	1	640
2013	194	98	21	17	33	-	688
2014	201	124	13	11	33	-	457
2015	53	41	2	3	-	-	128

* No shark catch by the Korean purse seine fishery.

Table 4(b). Annual number of releases of oceanic whitetip shark and silky shark by the Korean fishery in the WPCFC Convention Area, 2013-2015

Fishery	Year	Number of releases	
		Oceanic whitetip shark	Silky shark
Purse seine	2013	19	25*
	2014	2	5.7*
	2015	-	13*
Longline	2013	299	26
	2014	173	58
	2015	327	933

* indicates that the unit is weight (mt).

Table 5. Estimated annual coverage of operational catch/effort and observer data for the Korean fisheries by gear, active in the WCPFC Convention Area, 2011-2015

Year	Gear	Logsheet coverage (%)	Observer coverage (%)
2011	Purse seine	100	100
	Longline	90	>5
2012	Purse seine	100	100
	Longline	85	>5
2013	Purse seine	100	100
	Longline	100	5.4
2014	Purse seine	100	100
	Longline	100	7.2
2015	Purse seine	100	100
	Longline	100	6.6

∗ 2015 observer coverage for Korean longline fishery

Fishery	No. of Hooks			Days Fished			Days at Sea			No. of Trips		
	Total Estimated	Observer	%	Total Estimated	Observer	%	Total Estimated	Observer	%	Total Estimated	Observer	%
Longline							20,157	1,339	6.64			

Table 6. Information on the transhipment of Korean fleets in 2015

A. Longliners

(1) Amount (kg) of transshipped fish

Species	Transhipment of catches caught in WCPFC area	Transhipment of catches caught outside of WCPFC area	Total
Bigeye tuna	6,076,704	2,953,891	9,030,595
Yellowfin tuna	5,064,831	386,089	5,450,920
Striped marlin	26,059	23,309	49,368
Swordfish	361,658	345,097	706,755
Blue marlin	903,193	260,871	1,164,064
White marlin	13,484	132	13,616
Albacore tuna	587,639	69,461	657,100
Spearfish	3,277	6,472	9,749
Skipjack tuna	78,682	16,849	95,531
Sharks	289,316	138,253	427,569
Shark fin	11,305	5,570	16,875
Others	211,523	97,852	309,375
Total	13,627,671	4,303,846	17,931,517

Species	Location of transhipment : WCPFC area															Total
	In port transhipment					At sea transhipment in EEZ					At sea transhipment in high seas					
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	
Bigeye tuna	1,052,984	-	-	-	1,052,984	1,058,464	-	-	-	1,058,464	4,299,702	-	-	-	4,299,702	6,411,150
Yellowfin tuna	983,382	-	-	-	983,382	1,011,608	-	-	-	1,011,608	3,095,462	-	-	-	3,095,462	5,090,452
Striped marlin	3,437	-	-	-	3,437	3,906	167	-	-	4,073	17,327	310	-	-	17,637	25,147
Swordfish	-	47,620	-	-	47,620	-	65,039	-	-	65,039	-	302,538	-	-	302,538	415,197
Blue marlin	-	136,043	-	-	136,043	-	175,428	-	-	175,428	-	602,075	-	-	602,075	913,546

White marlin	-	1,070	-	-	1,070	-	703	-	-	703	-	2,148	9,230	-	11,378	13,151
Albacore tuna	-	-	93,953	-	93,953	-	-	111,859	-	111,859	-	6,493	373,452	-	379,945	585,757
Spearfish	-	338	-	-	338	-	286	-	-	286	-	1,958	-	-	1,958	2,582
Skipjack tuna	-	-	8,742	-	8,742	-	-	1,475	-	1,475	-	-	68,391	-	68,391	78,608
Sharks	-	30,861	-	-	30,861	-	6,291	-	-	6,291	-	233,880	-	24,732	258,612	295,764
Shark fin	-	-	-	1,134	1,134	-	-	-	204	204	-	-	-	10,243	10,243	11,581
Others	-	12,338	-	15,948	28,286	-	14,100	-	21,370	35,470	-	72,049	-	88,415	160,464	224,220
Total	2,039,803	228,270	102,695	17,082	2,387,850	2,073,978	262,014	113,334	21,574	2,470,900	7,093,046	1,150,731	433,351	122,966	8,800,094	13,658,844

Species	Location of transhipment : outside of WCPFC area										
	In port transhipment					At sea transhipment in EEZ					Total
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	
Bigeye tuna	-	-	-	-	-	2,813,320	-	-	-	2,813,320	2,813,320
Yellowfin tuna	-	-	-	-	-	388,917	-	-	-	388,917	388,917
Striped marlin	-	-	-	-	-	17,390	8,161	-	-	25,551	25,551
Swordfish	-	-	-	-	-	-	320,839	-	-	320,839	320,839
Blue marlin	-	-	-	-	-	-	277,111	-	-	277,111	277,111
White marlin	-	-	-	-	-	-	465	-	-	465	465
Albacore tuna	-	-	-	-	-	-	-	76,264	-	76,264	76,264
Spearfish	-	-	-	-	-	-	7,167	-	-	7,167	7,167
Skipjack tuna	-	-	-	-	-	-	399	16,312	-	16,711	16,711
Sharks	-	-	-	-	-	-	154,566	-	-	154,566	154,566
Shark fin	-	-	-	-	-	-	-	261	5,547	5,808	5,808
Others	-	-	-	-	-	-	70,300	-	20,634	90,934	90,934
Total	-	-	-	-	-	3,097,050	809,459	90,049	25,550	4,022,108	4,022,108

(2) Number of transshipments

Number of transhipment by location of catches		Number of transhipment by location				
		WCPFC area			Outside of WCPFC area	
Catches in WCPFC area	Catches outside of WCPFC area	In port	EEZ	High seas	In port	At sea
95	28	15	17	63	0	28

B. Purse seiners

(1) Amount (kg) of transhipped fish

Species	Transhipment of catches caught in WCPFC area	Transhipment of catches caught outside of WCPFC area	Total
Bigeye tuna	1,561,800	-	1,561,800
Yellowfin tuna	34,591,200	-	34,591,200
Skipjack tuna	220,368,000	-	220,368,000
Total	256,521,000	-	256,521,000

Species	Location of transhipment : WCPFC area															
	In port transhipment					At sea transhipment in EEZ					At sea transhipment in high seas					Total
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	
Bigeye tuna	-	-	1,561,800	-	1,561,800	-	-	-	-	-	-	-	-	-	-	1,561,800
Yellowfin tuna	1,000	-	34,590,200	-	34,591,200	-	-	-	-	-	-	-	-	-	-	34,591,200
Skipjack tuna	-	-	220,368,000	-	220,368,000	-	-	-	-	-	-	-	-	-	-	220,368,000
Total	1,000	-	256,520,000	-	256,521,000	-	-	-	-	-	-	-	-	-	-	256,521,000

Species	Location of transhipment : outside of WCPFC area										Total
	In port transhipment					At sea transhipment in EEZ					
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	

Bigeye tuna	-	-	-	-	-	-	-	-	-	-	-
Yellowfin tuna	-	-	-	-	-	-	-	-	-	-	-
Skipjack tuna	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-

(2) Number of transshipments

Number of transhipment by location of catches		Number of transhipment by location				
		WCPFC area			Outside of WCPFC area	
Catches in WCPFC area	Catches outside of WCPFC area	In port	EEZ	High seas	In port	At sea
265	0	265	0	0	0	0

C. Carriers

(1) Amount (kg) of transhipped fish

Species	Location of transhipment : WCPFC area															Total
	In port transhipment					At sea transhipment in EEZ					At sea transhipment in high seas					
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	
Bigeye tuna	1,316,998	-	586,830	-	1,903,828	773,223	-	-	-	773,223	3,409,390				3,409,390	6,086,441
Yellowfin tuna	1,317,270	-	14,259,133	-	15,576,403	651,167	-	-	-	651,167	2,270,242				2,270,242	18,497,812
Striped marlin	4,048	-	-	-	4,048	4,083	-	-	-	4,083	30,966	307			31,273	39,404
Swordfish	-	60,198	-	-	60,198	-	33,571	-	-	35,571		305,305			305,305	399,074
Blue marlin	-	177,812	-	-	177,812	-	78,244	-	-	78,244		395,492			395,492	651,548
White marlin	-	1,570	-	-	1,570	-	703	-	-	703		1,682	6,796		8,478	10,751
Albacore tuna	-	-	134,988	-	134,988	-	-	64,771	-	64,771	31,585		1,406,488		1,438,073	1,637,832
Skipjack tuna	28,228	-	163,190,614	-	163,218,842	-	-	599	-	599			53,166		53,166	163,272,607
Sharks	-	30,861	-	-	30,861	-	4,835	-	-	4,835		129,623		14,699	144,322	180,018

Shark fin	-	-	-	1,134	1,134	-	-	-	148	148				5,575	5,575	6,857
Others	-	17,892	983	9,566	28,441	-	5,262	-	13,210	18,472		98,144		46,244	144,388	191,301
Total	2,666,544	288,333	178,172,548	10,700	181,138,125	1,428,473	122,615	65,370	13,358	1,629,816	5,742,183	930,553	1,466,423	66,518	8,205,677	190,973,618

Species	Location of transhipment : outside of WCPFC area										
	In port transhipment					At sea transhipment in EEZ					Total
	G.G	Dress	Round	Other	Sub total	G.G	Dress	Round	Other	Sub total	
Bigeye tuna	-	-	-	-	-	2,279,134				2,279,134	2,279,134
Yellowfin tuna	-	-	-	-	-	354,907				354,907	354,907
Striped marlin	-	-	-	-	-	13,589	8,161			21,750	21,750
Swordfish	-	-	-	-	-		261,076			261,076	261,076
Blue marlin	-	-	-	-	-		227,701			227,701	227,701
White marlin	-	-	-	-	-		465			465	465
Albacore tuna	-	-	-	-	-			66,469		66,469	66,469
Skipjack tuna	-	-	-	-	-		6,432	9,164		15,596	15,596
Sharks	-	-	-	-	-		157,872		223	158,095	158,095
Shark fin	-	-	-	-	-			689	8,405	9,094	9,094
Others	-	-	-	-	-		77,368	1,022	12,675	91,065	91,065
Total	-	-	-	-	-	2,647,630	739,075	77,344	21,303	3,485,352	3,485,352

(2) Number of transshipment

Number of Transhipments by location of transhipments				
WCPFC area			Outside of WCPFC area	
In port	EEZ	High seas	In port	At sea
135	17	63	-	24

3. Background

About 60 year-old Korean distant water tuna longline fishery that stepped up the first fishing in the Indian Ocean in 1957, has explored the Pacific Ocean since 1958 and the Atlantic Ocean since 1967. The high seas and the waters within coastal states in the South Pacific Ocean have been the main fishing grounds for Korean longline fishery. There was a change in the longline fishing operation types. Longline vessels used foreign ports for fishing base near the fishing grounds from the beginning but they has gradually equipped with deep freezing facilities and used home ports for fishing base since 1972. All longline vessels have based domestic ports since 1999. This change gave advantages in exporting the products to Japanese markets and others. In domestic markets, tuna sashimi demands have been increasing year by year.

The Korean purse seine fishery was initiated by accessing into the Eastern Pacific fishing ground with 3 vessels in 1971. Helicopter-aided mass operations were introduced in 1979 for the first time, and the number of active vessels was the highest of 39 in 1990 and 27-28 in recent years but decreased to 25 in 2015. Most of the catches are supplied to the packers for domestic consumption, and are exported to foreign canneries.

These fisheries are managed by the Distant Water Fisheries Development Act put into effect on the 4 February, 2008, and the Act was revised for improving the data collection on 5 December, 2012 and the data reporting system on 7 July, 2015. Currently, over 80% of Korean catch of tuna and tuna-like species has occurred in the western and central Pacific ocean (WCPO) area.

4. Flag State Reporting

4.1. Annual catch and effort

Annual catch and effort for Korean tuna fisheries by gear and primary species are shown in Table 1 and Fig. 1. The average of total catch in the WCPO by Koran tuna fisheries was 273,716 mt in recent 5 years (2011-2015). Total catch in 2015 was 285,208 mt, which accounted for 5% greater and 4% lower than that of average for 5 recent years and 2014, respectively.

The average catch of purse seine fishery was 246,772 mt during 5 recent years (2011-2015). The purse seine catch in 2015 was 268,277 mt from 25 vessels active, which was 9% and greater than that of average for 5 recent years and similar to that of 2014. In purse seine fishery, skipjack, bigeye and yellowfin catches in 2015 were 231,695 mt, 1,857 mt and 34,695 mt, respectively. The catches of skipjack and bigeye were 4% and 36% greater than those of 2014, respectively, but yellow was 24% lower than that of 2014. Purse seine fishing efforts ranged from 6,100 to 7,500 sets during 5 recent years, which showed the highest of 7,552 sets in 2013, and the lowest of 6,113 in 2015.

The average catch of longline fishery was 26,364 mt during recent 5 years (2011-2015). The longline catch in 2015 was 16,931 mt from 84 vessels active, which was 36% lower than

those of average for 5 recent years and 2014. Catches of bigeye and yellowfin caught by longline in 2015, which are target species by the Korean tuna longline fishery, were 7,745 mt and 6,069 mt, respectively. Longline fishing efforts ranged from 32,000 to 75,000 thousand hooks and decreased from 75,715 thousand hooks in 2011 to 32,551 thousand hooks in 2015, which was the lowest level during 5 recent years.

Catches of north Pacific albacore, southwest striped marlin, south swordfish and south albacore are shown in Table 1(c)-(f).

4.2. Fleet structure

The number of vessels active by gear and size is presented in Fig. 2 and Table 2. The number of purse seine vessels, once peaked at 39 in 1990, reduced to 28 in 1996 and has been maintained around 26-28 since then to recent years. In 2015, it decreased to 25, of which 8 vessels were of 501-1,000 class, 12 vessels of 1,001-1,500 class and 5 vessels of over 1,500 class. The number of longline vessels reduced from 220 in 1991 to 108 in 2008, and slightly increased and ranged from 111 to 126 thereafter. In 2015, it also decreased to 84, of which 1 vessel was of 51-200 class and 83 vessels of 201-500 class.

4.3. Fishing patterns

The distributions of catch and effort of target species by gear are shown in Fig. 3. Korean tuna purse seine fishery has generally been operating throughout the year in the tropical area of the WCPO between 140^{o}E-170^{o}W and from time to time extended to the east subject to oceanographic conditions. Purse seine fishing efforts in 2011 and 2013 were concentrated on the western areas, while concentrated relatively higher on the central areas in 2012 and 2014. Especially, in 2015 the effort distributions moved eastward further and concentrated on the eastern areas than in previous years. Longline fishery efforts were normally higher in both the central and eastern Pacific Ocean. The efforts in 2014 concentrated in the WCPO, but those of 2015 were relatively higher in the EPO.

4.4. Annual estimated catches of species of special interest

The species of special interest (seabird, turtle, marine mammal, etc.) caught incidentally by Korean purse seine and longline fisheries are presented in Table 3. The data were compiled from logsheet recorded by captain onboard. In 2015, 21 individuals of whale shark and 12 individuals of loggerhead turtles were caught by purse seine fishiery, and 34 individuals of leatherback turtle, 6 individuals of olive ridley turtle and 6 individuals of other marine turtles (unidentified) were caught by longline fishery, respectively. All these species were caught incidentally by fisheries and released promptly. As most of Korean vessels operated the areas between 15^{o}N and 20^{o}S (Fig. 3), there was no bycatch of seabird in 2015.

4.5. Annual estimated catches of non-target, associated and dependent

The shark species caught by longline fishery are presented in Table 4(a). These data were compiled from logsheet recorded by captain onboard. As key shark species, the catches in 2015 were 53 mt for blue shark, thresher sharks 41 mt, hammerhead sharks 2 mt, mako sharks 3 mt, and other sharks 128 mt, respectively. In accordance with CMM 2011-04 and

2013-08, the number of releases of oceanic whitetip shark and silky shark are presented in Table 4(b). All these bycaught were released promptly in a manner that results in as little harm to the shark as possible.

4.6. Estimated annual coverage of catch and effort and observer data

Estimated annual coverages of logsheet (catch and effort data) and observer data are shown in Table 5. The coverage of logsheet data has been 100% for both purse seine and longline since 2013. The observer coverage in 2015 was 100% for purse seine and 6.6% for longline.

5. Coastal State Reporting

N/A

6. Onshore developments

Korea consistently promotes investment plans on land facility in the coastal states where its distant waters fleets are operating.

7. Future Prospects of the fishery

The fleet power of purse seine and longline is expected to keep the current level, and production seems to be affected by fisheries resources trend in the oceans, conservation and management measures of RFMOs and permission policy of the coastal states. Meanwhile recognizing that demand at international and domestic market is increasing on production caught from responsible and sustainable fishing activity, Korea strives to strengthen on MCS, scientific survey and education relating to bycatch for fishermen.

8. Status of tuna fishery data collection systems

8.1. Logsheet data collection and verification

Tuna catch statistics of Korea are obtained from two sources of data reporting. The Korea Overseas Fisheries Association (KOSFA) collects monthly catch by gear and species from the Korean tuna industries. The National Institute of Fisheries Science (NIFS) collects logsheet data from vessels filled out by captain onboard. In accordance with data reporting and submission requirement by the RFMOs, necessary improvements have been continuously made in logbook coverage, accuracy and verification through cross-checking between NIFS and KOSFA. To improve fisheries database management system and data cross-checking, in 2015 the NIFS and the Ministry developed an electronic logbook system enabling to monitor

the state of being submitted from fishing vessel in real time and to manage/cross-check the data.

8.2. Observer programme

The scientific observer program of distant-water fisheries of Korea was started in 2002. The National Institute of Fisheries Science (NIFS) is responsible for implementing and developing the program. The basic requirement for observers is college graduated with the major field of nature science or fisheries high school graduated with at least 1-year experience on board and certificate of qualification to deck officer. Candidates for observer who have passed the paper review (including medical check) and oral interview have to take training programs for 3 weeks. Observer training programs include basic safety training for seafaring, operations of navigation devices, biological information training for target and non-target species and data collecting/reporting method for fishing activities. During the training program they have two kinds of test. First is the test for a technical term of fisheries and biology, and the other is the test for species identification. The person who scored 70% overall in the two tests and attended 100% of the course timetable can be qualified for a scientific observer and deployed on board. Korea has a total of 29 scientific observers at present.

8.3. Port sampling programme

In Korea, there are 4 domestic landing ports for tunas caught in WCPO, which are Busan, Masan, Tonyeong and Mokpo, all located along the southern coast of Korea, nearby the landing port, there are 5 canneries owned by 4 companies in which about 100,000 tons of tunas from WCPO are landing.

The National Institute of Fisheries Science (NIFS) used to conduct biological sampling in the domestic cannery of Dongwon industry from 1997 to 2006. A preliminary study for species identification from the catch of purse seine was conducted in a cannery of Korea in 2011 and the result was provided to the WCPFC SC7 (ST-IP-09).

8.4. Unloading/Transhipment

In accordance with Article 13 of the Distant Water Fisheries Development Act, all distant water fishermen shall comply with procedures and regulations established by Regional Fisheries Management Organizations. Therefore, all transhipments by Korean vessels fishing all high migratory fish stocks covered by the WCPFC Convention take place in accordance with WCPFC CMM 2009-06. Also, vessel operators are encouraged to assist the WCPFC ROP observers in having full access to both the unloading and the receiving vessels to verify that the transhipped quantities of fish are consistent with other information available to observers. After the completion of transhipment, the transhipment declaration is subject to verification against fishing vessel’s monthly catch report, logsheets and observer reports (if available). The information on the transhipment of Korean fleets in 2015 is summarized in Table 6.

9. Research activities covering target and non-target species

Korea has been carrying out a sea trial to mitigate bycatch of seabird in the Korean tuna longline fisheries with BirdLife International since 2013, and is conducting a project for developing FAD to the extent possible minimize the capture of small bigeye and yellowfin and to reduce the entanglement of sharks, marine turtle, etc.