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Group Seine Operations of Philippine Flagged Vessels in High Seas Pocket 1 (HSP1)

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Tanangonan I[1]., M. Demo-os[1], J. S. Jara[1], and R.V.Ramiscal[2]

[1] National Marine Fisheries Development Center, BFAR
[2] Capture Fisheries Division, BFAR

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Isidro Tanangonan*, Marlo Demo-os* Jeric S. Jara* and Rafael V.Ramiscal**

*National Marine Fisheries Development Center
**Capture Fisheries Division, BFAR
Bureau of Fisheries and Aquatic Resource (BFAR)
PCA Bldg., Elliptical Road, Quezon City, Philippines

ABSTRACT

This paper reports the operations of Philippine group seine operations in High Seas Pocket 1 based on Observer reports in 2016. It covers thirty two (32) operational catcher vessels during the period January-June and October-December 2016. It describes catch, effort and operation (catch-per-unit-effort, species and size composition, number of catcher and support boats, number of sets and the number of days) of the fleet in high seas pocket 1.

I. Introduction

High Seas Pocket No. 1 (HSP1) was closed to purse seine fishing for 2 years effective January 1, 2010 as a result of the implementation of Conservation and Management Measure 2008-01 (CMM 2008-01) adopted by the Western and Central Pacific Fisheries Commission (WCPFC). The CMM is intended to reduce fishing mortality of bigeye and yellowfin tunas. HSP1 is bounded by the exclusive economic zones or EEZs of Federal States of Micronesia, Republic of Palau,Indonesia, and Papua New Guinea.

In March 2012, the 8th Regular Session of the WCPFC adopted CMM 2011-01 as a temporary extension of CMM 2008-01 and giving access to Philippine traditional fresh/ice chilled seining vessels operating as a group in HSP1 until February 2013. Subsequently, CMM 2012-01 provided the measures for this fleet in the high seas until February 2014 and CMM 2013-01 for 2014-2017. The measures involved several conditions including access limit to 36 catcher fishing vessels, mandatory use of automatic location communicator (ALC) and regional observer onboard.

Consequently, Fisheries Administrative Order 245 (FAO 245, 245-1, 245-2 and 245-3) was issued by the Department of Agriculture through the Bureau of Fisheries and Aquatic Resources (BFAR) to prescribe regulations and implementing guidelines on the operations of 36 fishing vessels in HSP1. In addition, Fisheries Administrative Order 240 (FAO 240) was adopted for the implementation of the National Fisheries Observer

Program (NFOP) covering high seas. Further, Fisheries Administrative Order no. 241 (FAO 241) was issued to strengthen VMS operations in the high seas.

This report was based from the reports of Observers, covering the catch of 32 vessels that were able to conduct fishing in HSP1. The fleet opted to operate only for 9 months (January-June; October-December) in adherence to paragraph 14 of CMM 2015-01.

II. Methods

A. Catch Estimation

Observers total catch estimates were derived from two methods. The main procedure was made by counting and estimating the capacity of brails as fish catch was transferred from the bunt to wells or fish holds of awaiting carriers. The other method was based on capacity and fullness of wells/fish holds. Catch rate was estimated as mT/fishing day . In general, only one set was made in one fishing day. In the brail count / capacity method, total catch was estimated using the following method :

Volume (V) = π r 2 h
Brail capacity = Volume x 80%
Where;
π = 3.14
h= Brail height
r = Brail diameter (d)/ 2

The volume of fish catch was estimated at 80% of the volume of the brail to account empty/water space. By using this method, a margin of +/- 2% error was observed (dela Cruz, 2010).

B. Catch Sampling

Spill sampling using the sampling bin specified by SPC was used as sampling protocol. The bin has a capacity of around 300-500 kilograms, depending on the size and species of fish caught. Samples were sorted according to species whenever possible and weighed to the nearest 0.1 kg. The lengths of all tunas and mackerel scad from the sample were measured to nearest cm (fork length for tuna and large pelagic species and total length for mackerel scad).

The large size tunas, billfish and other species that were separated as brails were emptied into the wells. These were weighed and measured separately.

C. Species identification

Species identification was done by Observers based on available identification guides. Special attention was given on the distinctive characteristics of small size yellowfin and bigeye tunas.

D. Analysis

Data were analyzed using descriptive presentation of data using Microsoft Excel to illustrate a general status of operation in HSP1. These include species composition, Effort, CPUE and length frequency.

Information on the number of days the vessels stayed at HSP1 was based VMS data on time/date of entry and exit from HSP1.

III. Results

A. Catch and fishing effort

The group seine fleets that were able to fish in HSP1 in 2016 were composed of 29 purse seine and 3 ringnet catcher vessels. The fleet opted to operate only 9 months (January-June; October-December) in accordance to paragraph 14 of CMM 2015-01.

Overall, the 32 vessels spent a total of 7,205 days in HSP1 and actual 2,643 fishing days, or just about one (1) fishing day for every 2.7 days spent by each vessel in the HSP1. FAO 245 which provides regulation and guidelines for the operation of Philippine group seine operation set the annual catch limit not to exceed an equivalent of 9,846 fishing days for the 36 vessels, or corresponding to 273.5 fishing days per vessel.

In addition, of the total 2,643 fishing days, only 2,501 sets were successful or an efficiency rate of 95%. Unsuccessful fishing days were attributed to damaged gear, machinery malfunction, unfavourable sea condition and other factors which resulted to no catch to be retained whole weight.

Table 1. Summary of catch and effort of Philippine group seine operation in HSP1, 2016

Month	No. of Catchers	Days @ HSP1	Fishing days	Set/HSP1 days	Total catch (t)	Catch rate (t/set)	Catch rate (t/HSP1 day)
JAN	27	837	229	3.66	2,395	10.46	2.86
FEB	26	749	227	3.30	2,286	10.07	3.05
MAR	27	878	353	2.20	3,344	9.47	4.30
APR	27	788	312	2.53	2,401	7.69	3.05
MAY	28	871	168	5.18	1,199	7.13	1.38
JUN	27	674	210	3.21	895	4.26	1.33
SEP	1*	27					
OCT	28	783	352	2.22	4,325	12.29	5.52
NOV	29	808	412	1.96	4,423	10.73	5.47
DEC	30	890	380	2.34	3,157	8.31	3.55
TOTAL	**32**	**7,205**	**2,643**	**2.73**	**24,424**	9.24	3.39

*free school fishing

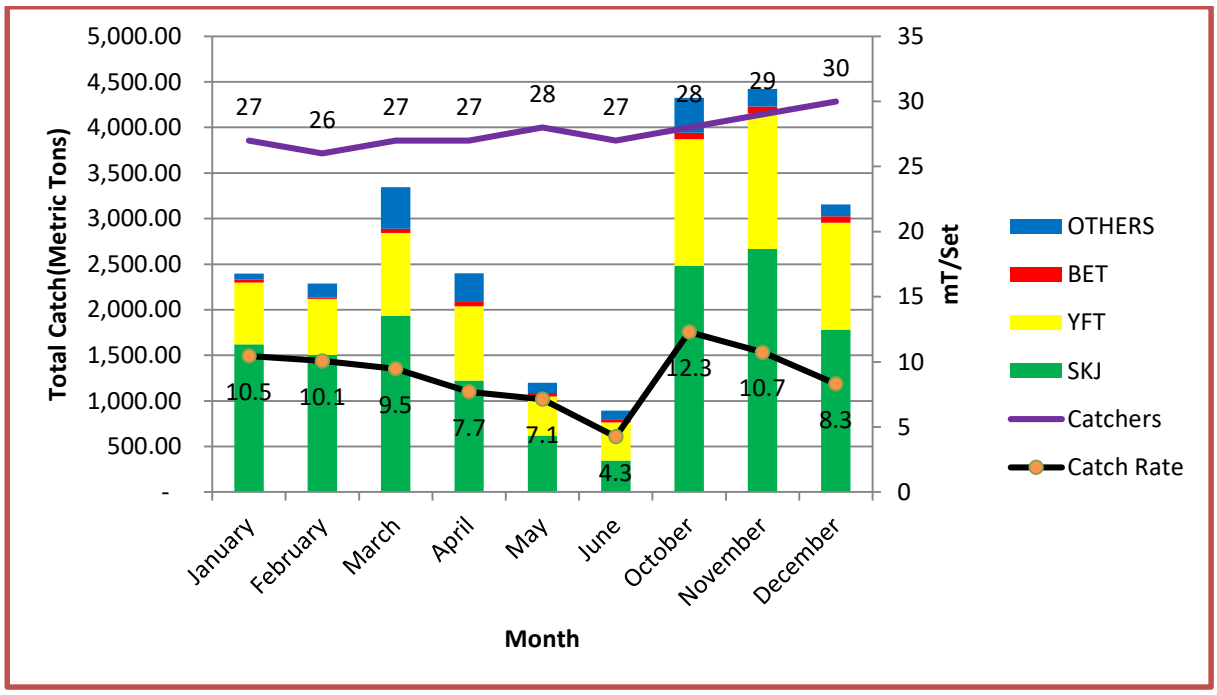

Figure 1. Catch and effort of Philippine group seine operations in HSP1, 2016

B. Catch and species composition

A total of 24,424 tons of fish was caught in HSP1 for 2016, translating to a catch-per-unit effort of 9.24 tons/vessel/fishing day or 3.39 tons/vessel/day in HSP1. The bulk of the catch was composed of skipjack (58.04%) and yellowfin (32.38%). Bigeye was at 1.77% while the remaining 7.80% was comprised of other species including mackerel scad, kawakawa, frigate and bullet tuna, bigeye scad, dolphin fish and triggerfish (Table 2, Fig. 1).

Sharks and other species of special interest were also occasionally caught during the operation, including 106 sharks, 16 dolphins, 2 sea turtles and 3 giant manta ray.

Table 2. Catch of major species by month

Month	SKJ	YFT	BET	OTHERS	TOTAL
JAN	1,620.01	677.20	31.84	65.82	2,394.87
FEB	1,502.92	614.92	14.56	153.93	2,286.34
MAR	1,933.57	908.73	44.68	457.12	3,344.10
APR	1,223.91	815.04	57.38	304.32	2,400.66
MAY	618.91	427.95	38.65	113.14	1,198.65
JUN	345.41	418.53	26.33	105.11	895.38
OCT	1,480.17	1,390.34	72.39	382.92	4,325.83
NOV	2,668.19	1,483.91	78.29	191.50	4,421.90
DEC	1,782.84	1,172.63	69.16	131.78	3,156.41
TOTAL	**14,175.93**	**7,909.26**	**433.30**	**1,905.64**	**24,424.13**

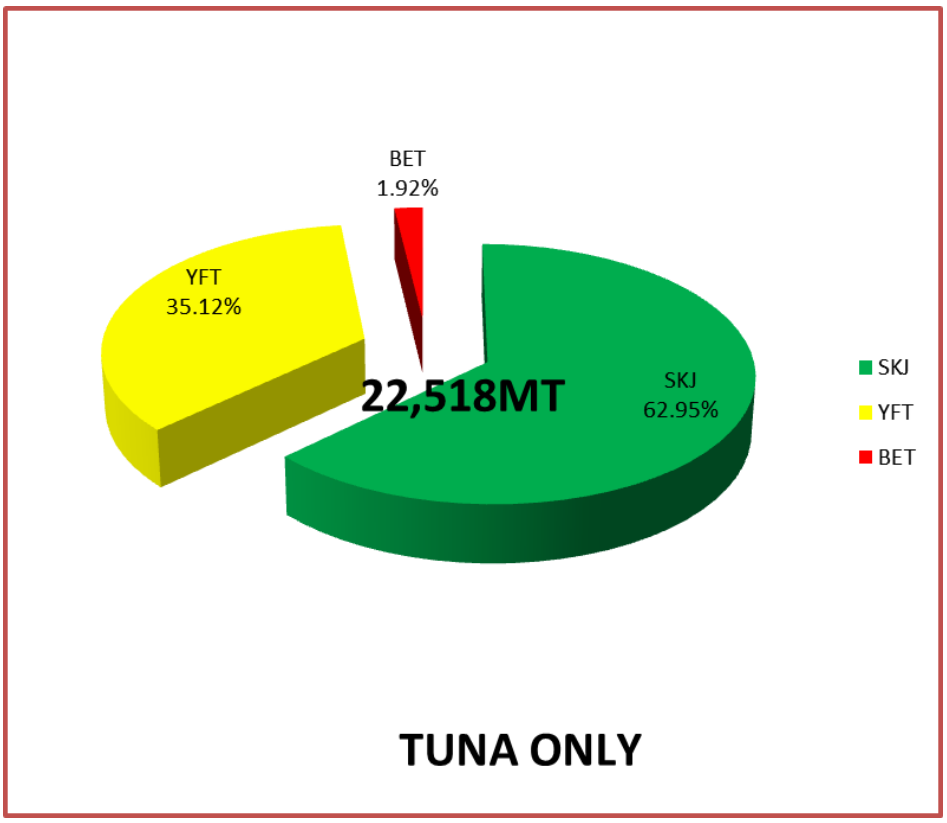

Figure 2. Catch composition of Philippine group seine in HSP1, 2016

C. Size composition

Table 3 illustrates the length frequency of SKJ, YFT and BET indicating average length of 37 cm, 42 cm and 43 cm respectively. All species shows- an upward trend starting from March to June and October to December. Skipjack tuna indicated a modal peaks at 30 (Fig 3, Table 3) while Yellowfin Tuna and Bigeye Tuna on the other hand form modes at 40 and 43 cm respectively. The average size of the YFT and SKJ was smallest at under 37 and 33 cm in March respectively while BET found to be smallest in October (Fig 4).

Table 3. Average length of SKJ, YFT, BET and MSD caught in HSP1

Species	SKJ	YFT	BET	MSD
n	368,514	164,204	8,071	131,403
Ave (cm)	**37.30**	**41.59**	**43.09**	**25.24**
Min (cm)	12	14	18	10
Max (cm)	84	141	120	55
Mode(cm)	30	40	43	23

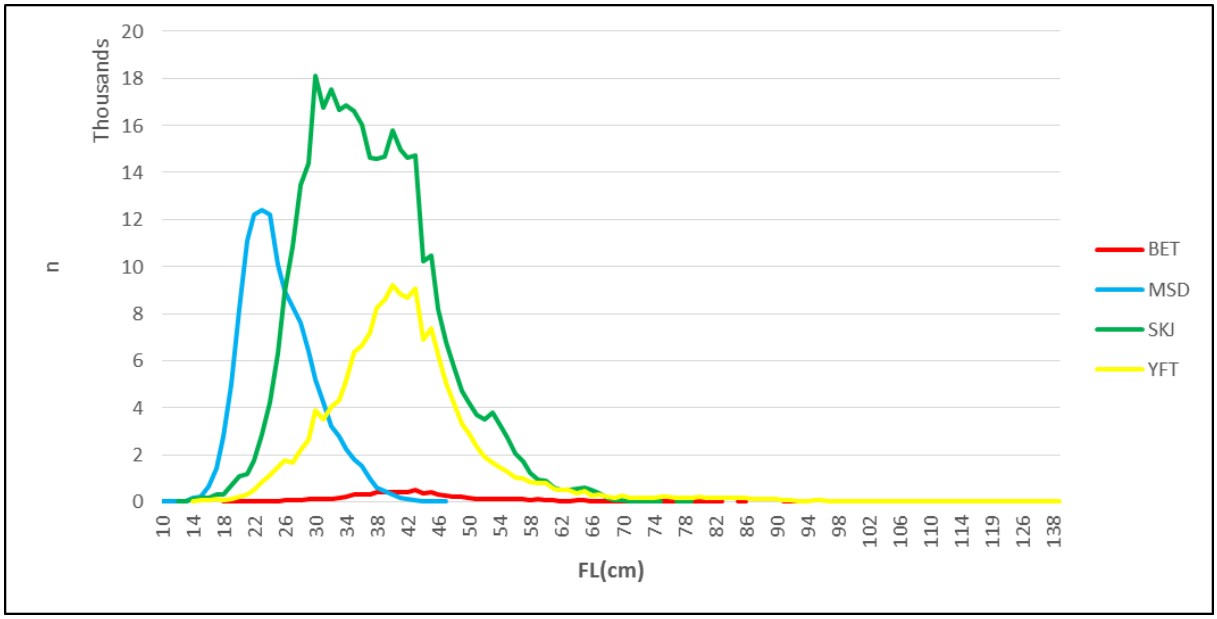

Figure 3. Size composition of SKJ, YFT, BET and MSD caught in HSP1

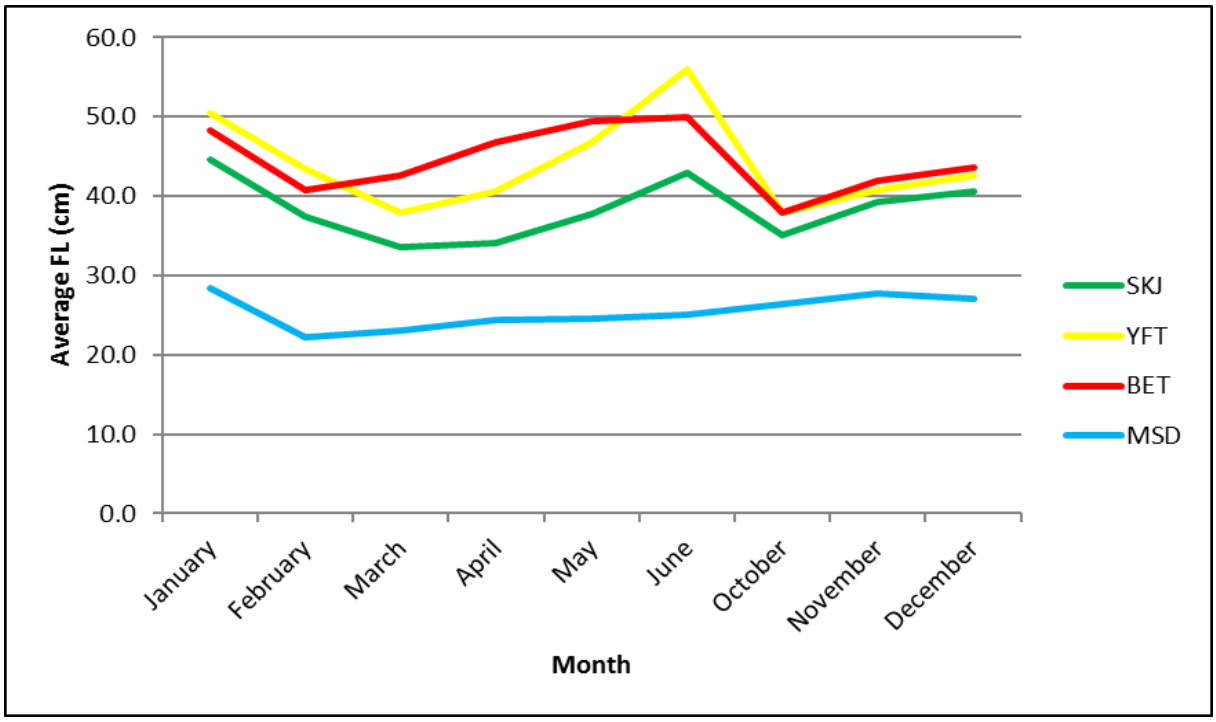

Figure 4. Average size of SKJ, YFT, BET and MSD caught in HSP1

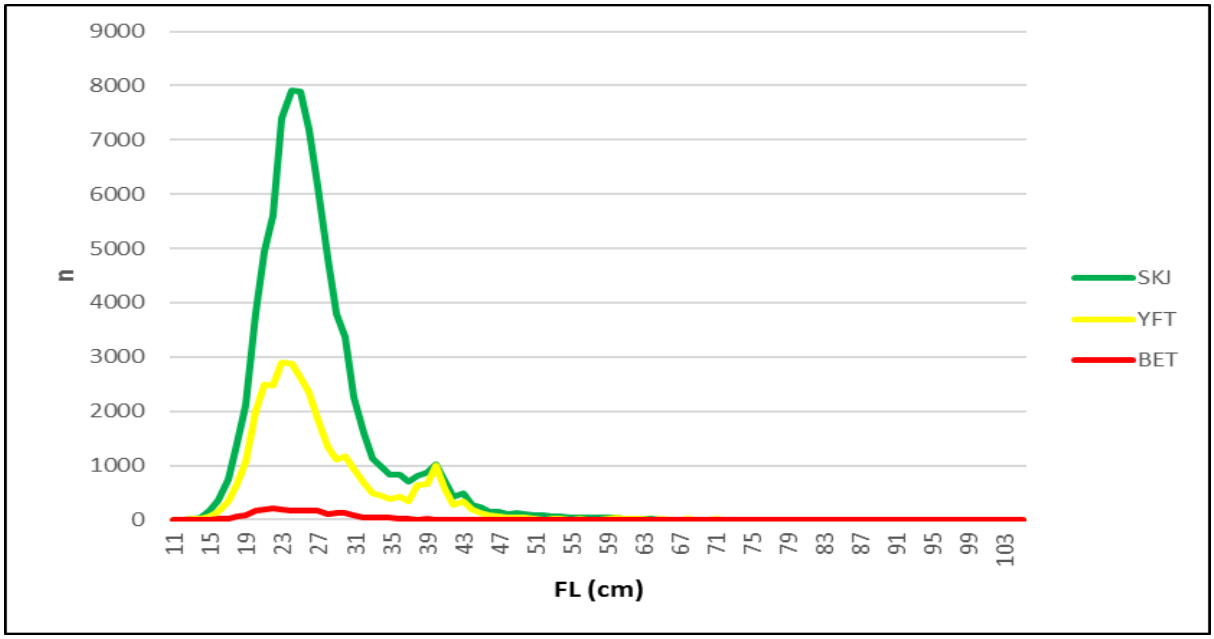

Figure 3. Size composition of SKJ, YFT, BET and MSD caught in Philippine EEZ (NSAP data, 2016)

In contrast with fish caught within Philippine EEZ during the same period, the lengths for the 3 tuna species were relatively smaller with modal lengths at 22-40 cm and average lengths of 26.59 cm, 27.21 cm and 25.56 cm respectively (Fig 5, Table 4).

Table 4. Range and size of SKJ, YFT, BET and MSD caught in Philippine EEZ (NSAP data, 2016)

Species	SKJ	YFT	BET
n	82,170	33,567	2,273
Ave (cm)	26.59	27.21	25.56
Min (cm)	11	11	14
Max (cm)	76	105	68
Mode (cm	24, 40	23, 40	22

Table 5. Comparative Summary of HSP1 and Philippine EEZ Catch in 2016

Species	HSP1 Catch Composition(%)	PHIL EEZ Catch Composition(%)*	HSP1 Average Size (cm)	PHIL EEZ Average Size (cm)**
SKJ	58.04	37.82	37.30	26.59
YFT	32.38	23.68	41.59	27.21
BET	1.77	4.04	43.09	25.26
MSD(OTHERS)	7.80	34.46	25.24	

*based on observer estimate during FAD Closure **NSAP data

IV. Summary / Recommendations

1. The catch in 2016 of the Philippine group seine fleet in HSP1 totaled to 24,424 tons of which 22,518 mt were SKJ, YFT and BET or comprised about 16% of the production of these tuna species that were caught within Philippine EEZ.

2. The average catch was catch-per-unit effort of 9.24 tons/vessel/fishing day or 3.39 tons/vessel/day in HSP1.

3. The average length of SKJ, YFT and BET caught in HSP1 were relatively bigger than tunas caught from Philippine EEZ.

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