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Pilot Test of MARLIN (Electronic Logsheet) Operation in High Seas Pocket 1

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ABSTRACT

MARLIN/Electronic Logsheet terminal designed to record and transmit daily logsheet data electronically was installed to all Philippine Flagged Fishing Vessels Licensed to Operate in HSP1. This paper presents the current status of reporting in terms of the data gathered, frequency of reporting and its reporting processes. Eighteen (18) out of twenty-two (22) vessels operating in HSP1 was able to transmit data for 2013 and twenty nine (30) out of thirty-five (35) fishing vessels for 2014. Data reported is similar with the normal logsheet which includes, vessels departure date and time, position, daily activity, catch species and amount, carrier name and fish hold number used.

E-reporting approach can timely provide information that can be advantageous in generating data for immediate for evaluation. However, there is still a need to capacitate the Boat Captains/Officers in performing electronic catch reporting to sustain effective electronic data recording and its reliability.

I. Introduction

The Western and Central Pacific Fisheries Commission, the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean has the objective to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks of the Convention Area. From the start of the WCPFC Convention entered into force, scientific data has been the primary source of information in the formulation of Conservation and Management Measures. To achieve this, different data gathering scheme has been taken into force to ensure reliable data reported in the Commission such as Vessel Monitoring System, Fisheries Observer Program and Logsheet data.

Before the implementation of VMS and Regional Observer Program, logsheet has been the primary source of data from vessels operating in the area. However, because of the distance of the fishing ground to port these data arrive weeks or months after the last data has been recorded.

To ensure timely submission of data, Secretariat of the Pacific Community (SPC) initiated the e-reporting and monitoring and conducted trial test to selected fishing vessel in the region. This includes eTUNALOG system, Observer on-board data and Longline E-Monitoring Trials.

Philippines, on the other hand conducted a pilot test and has integrated the e-reporting through a two-way Vessel Monitoring System to the 36 Philippine flagged catcher vessels operating in HSP1. The VMS provider through the guidance of BFAR, has developed an Electronic Logsheet program using a multifunction terminal device called MARLIN attached to the vessel's monitoring system. The device is capable of sending email, daily activity log, fishing area, species caught and fish amount and also detects typhoons and weather conditions.

This paper will describe the current status of reporting in terms of the data gathered, frequency of reporting and its reporting processes. It also suggests some improvements and capacity building initiatives to further strengthen the data quality.

II. Methodology

The MARLIN is an electronic logbook terminal attached to vessel's monitoring system. It was designed to report just like the usual logsheet required by the Commission. In preparation for this, representative from the VMS provider conducted several hands on training on MARLIN to key personnel involved in the project such as BFAR staff and Fishing Operators in General Santos City. Follow-up trainings was also conducted to Fisheries Observers and Boat captains prior to their departure to HSP1. This will ensure that proper data reporting will be carried out.

The pilot test started on the departure of the first batch of catcher vessels during the send-off ceremony on October 24 2013. Out of 22 catcher vessels that was able to operate in 2013, 18 vessels was able to transmit data.

Fig. 1. Installation and trial operation of MARLIN onboard catcher vessel.

Data is transmitted once a day which includes date, time, position, activity code. For activity code 1 or set activity, additional data is to be recorded which includes start and end of set, species caught, quantity, fate, fishhold number and carrier name used. For other activity data transmission is on the midday.

Transmitted data is processed and can be accessed in the web-based application. Each vessel activity is generated and can be exported in Microsoft Excel format. Catch reporting is also generated in excel format which is automatically presented in charts and graphs based on the criteria selected.

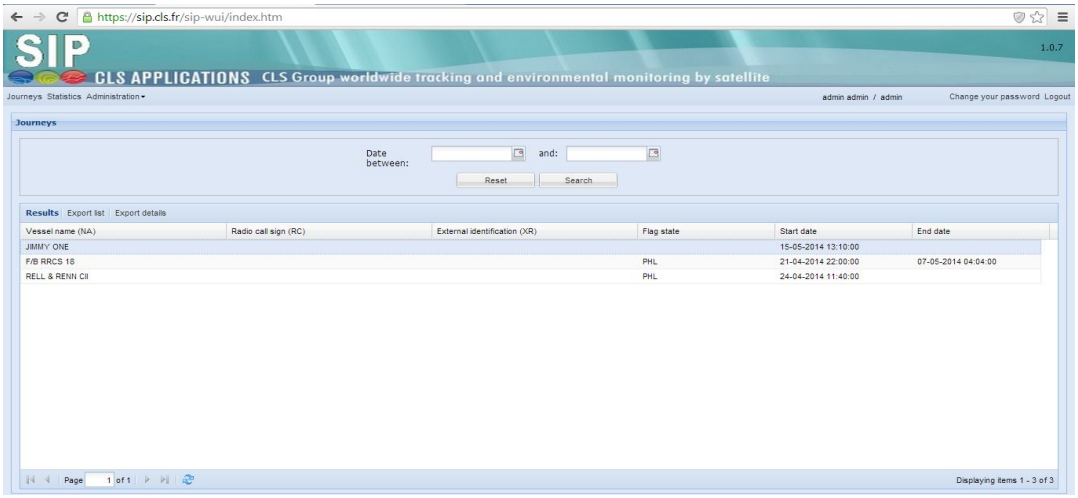

Fig. 2. Web-based application where MARLIN data is generated.

Data transmitted were consolidated in reported in terms of number of sets made, catch rate and species composition.

III. Results and Discussion

From the start of operation from November to December 2013, 18 out of 22 operational catcher vessels were able to transmit electronic data. The other 4 vessels have malfunctioned and repair and replacement will cost enough time and cost for travel since the vessels were already in the fishing ground. In 2014, a total of 30 out 35 catchers operating were able to transmit data.

Table 1. Summary of Transmitted Catch Data in 2013 and 2014.

Month	No. Vessels Reporting	SKJ(t)	YFT(t)	BET(t)	MSD(t)	OTHERS(t)	Total(t)
Nov 2013	**18**	1044.9	122.1	12.2	11.4	9.1	1199.7
Dec 2013	**18**	1190.4	185	5.2	8.1	21.2	1409.9
Total for 2013		**2235.3**	**307.1**	**17.4**	**19.5**	**30.3**	**2609.6**
%		**85.66%**	**11.77%**	**0.67%**	**0.75%**	**1.16%**	
Jan 2014	**23**	1368.6	211.2	33.4	44.3	30.6	1688.1
Feb 2014	**22**	1435.4	380.3	49.4	34.3	26.1	1925.5
Mar 2014	**25**	1951.9	369.4	39.6	38.5	64.5	2463.9
Apr 2014	**26**	2407.4	387.3	46.2	65.7	86	2992.6
May 2014	**28**	3469.8	422.8	494.1	793.4	176.8	5356.9
Jun 2014	**24**	2446.8	302.3	22.7	30.5	115.3	2917.6
Total for 2014		**13079.9**	**2073.3**	**685.4**	**1006.7**	**499.3**	**17344.6**
%		**75.41%**	**11.95%**	**3.95%**	**5.80%**	**2.88%**	
Grand Total		**15315.2**	**2380.4**	**702.8**	**1026.2**	**529.6**	**19954.2**
%		**76.75%**	**11.93%**	**3.52%**	**5.14%**	**2.65%**	

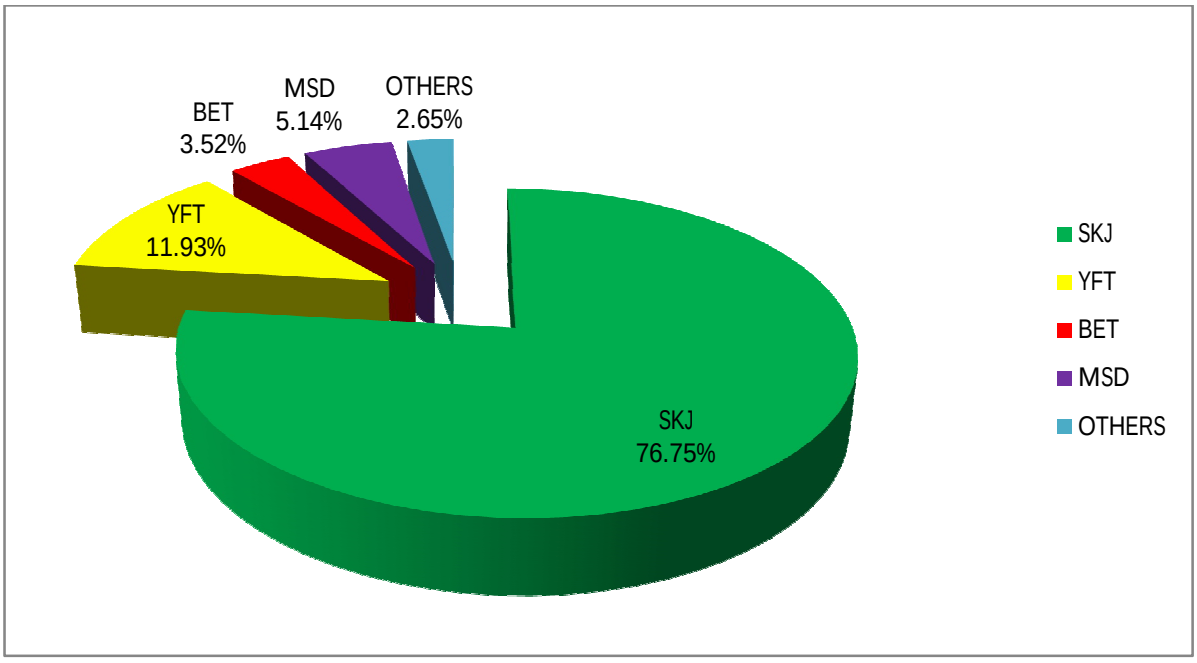

Fig. 3. Species Composition reported from November 2013-June 2014.

Data from reporting vessels shows a total catch of 19,954 MT. Majority of species caught is skipjack tuna at 76.75% followed by Yellowfin tuna at 11.93%, Mackerel Scad at 5.14%, Bigeye Tuna at 3.52% and Other Species at 2.65%. Data also shows decrease in composition of Skipjack Tuna from 2013(85.66%) to 2014(75.41%) while the Bigeye and Mackerel Scad increases from 0.67% to 3.95% and 0.75% to 5.80% respectively. Yellowfin tuna almost remain 11%.

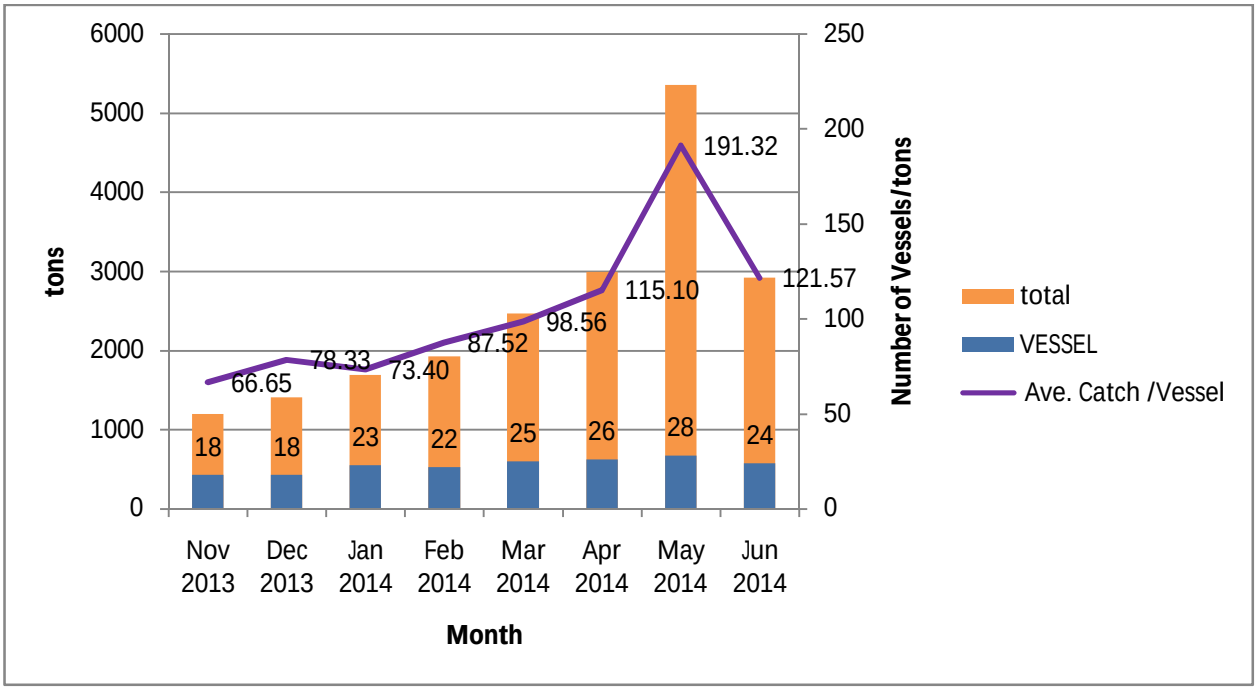

Fig. 4. Total Catch per month and total number of vessels operating

Average catch per month shows highest catch in May with 191.32 MT and lowest in November with 66.65 MT per catcher. Peak operation is also seen in May with 28 catchers operating and reporting. Decreasing catch from May to June is cause by some vessels exited early from HSP1.

IV. Conclusion and Recommendation

Pilot test in of MARLIN has been effective in ensuring timely reporting of logsheet data. Catch data were reported at desired timeline and consolidated immediately. Success rate of reporting is above 80 percent based on number of vessels able to report over the total number of vessels operating.

Some field that needs improvement is to empower boat captains and fisheries observer to eliminate human errors in reporting. Installation and repair of the MARLIN device is also need to be taught to a designated person onboard the vessel incase problems arise while at sea.

Data reported in this paper is still to be verified and cross-check with other data source such as Fisheries Observer data and Logsheet data submitted by the concerned fishing company.