National Report of Chinese Taipei to SPRFMO Scientific Working Group on the Squid Jigging Fishery in the South Pacific Ocean

1. Description of Fishery

Our squid jiggers started exploring jumbo flying squid (*Dosisiaiis gigas*) in the waters off Peru in 1992. However, as the taste of jumbo flying squid appeared to be sour, its commercial value was low for processing, and there was no fishing activity after the exploratory operation. Poor catch of Argentine shortfin squid (*Illex Argentinus*) in the Southwest Atlantic Ocean in 2000 and 2001 triggered 18 jiggers to restart seasonal fishing in the Southeast Pacific Ocean (SEPO) in 2002 after the *Illex* fishing season in the Southwest Atlantic Ocean which runs from June to September, is over. The number of fishing vessel reached an historical high of 29 in 2004, decreasing to a level below 20 after 2004 and maintaining at 13 from 2007 to 2009. In 2010, the number of active vessel increased by 7 to 20. (Figure1).

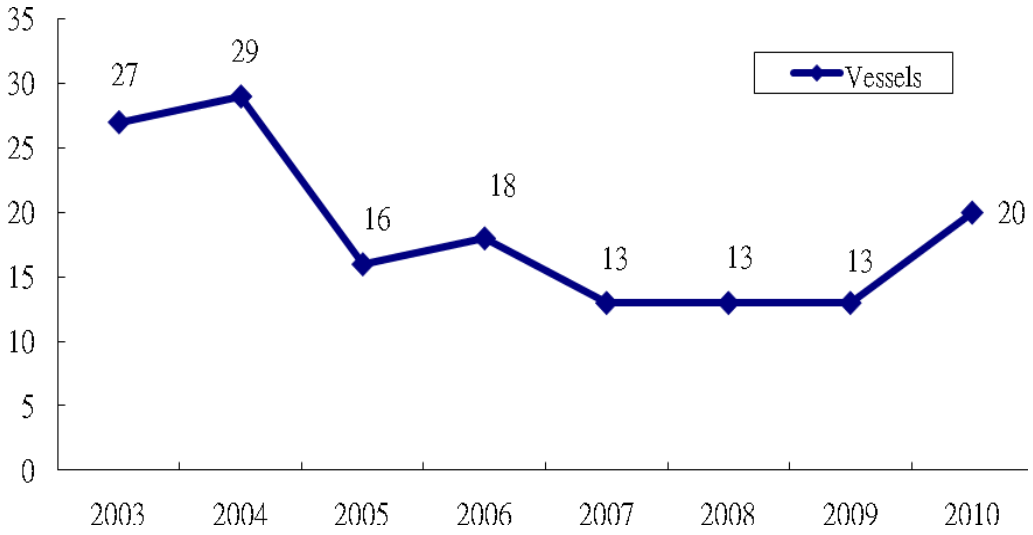

Figure 1. Numbers of active squid jigger operating in SEPO from 2003 to 2010.

Figure2 shows the fishing days deployed by month by our fleet in 2010, and it was noted that there was a very significant increase in May for some fishing vessels shifting from Southwest Atlantic Ocean after *illex* fishing season.

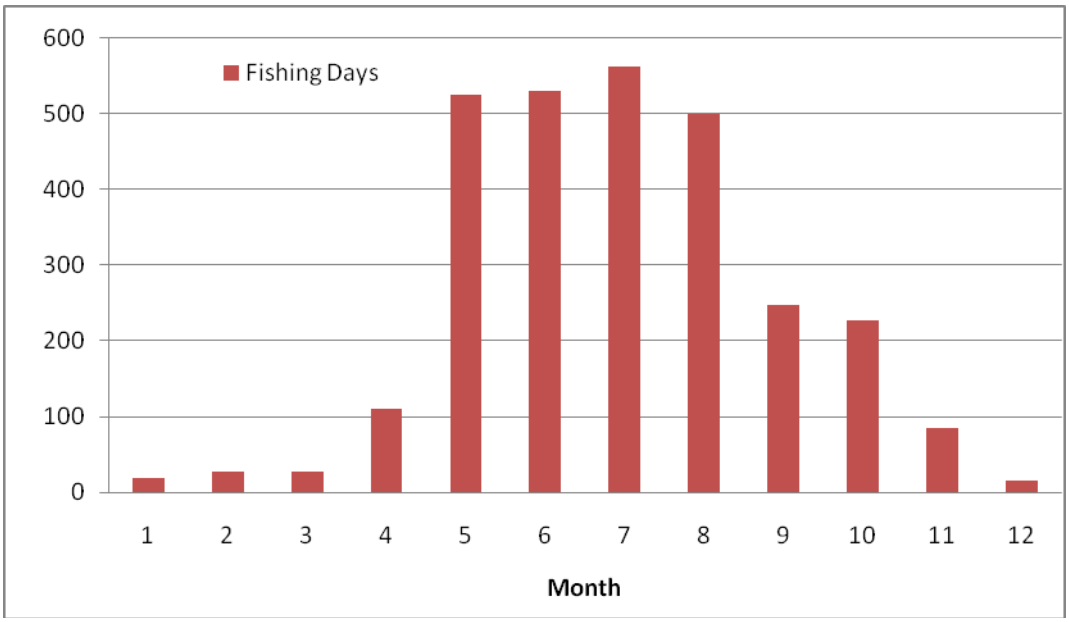

Figure 2. Monthly fishing days of our fleet deployed in SEPO in 2010.

Beginning in 2007, some fishing vessels changed their fishing patterns and started operating in this area all year round without fishing grounds shift. In 2009 and 2010, there was only 1 vessel starting operation in SEPO form January for industry anticipating good catch of *Illex* in the South and West Atlantic Ocean, and the pattern can therefore be noted that other vessels tended to start shifting fishing grounds from April during these 2 years. (Figure 3).

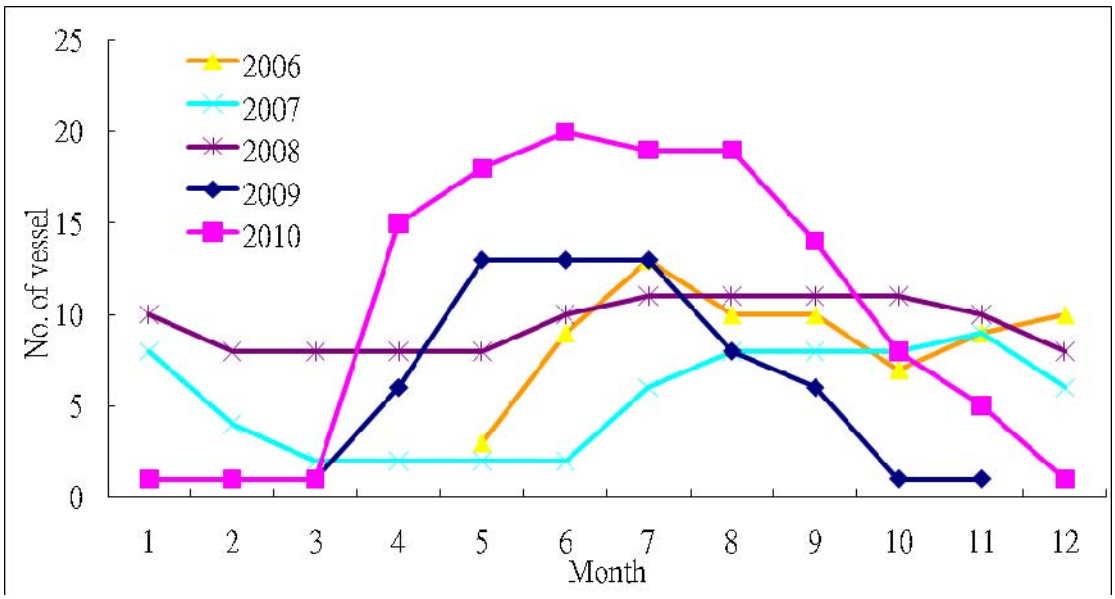

Figure 3. The monthly number of squid jigger operating in SEPO between 2006 and 2010

2. Catch, Effort and CPUE Summaries

Table1 summarizes information on the number of vessel, fishing days and catch of the fishery from 2006 to 2010. It was observed an increase of catch with the increases of fishing vessels and fishing days.

Table 1. Nominal effort and catch statistics from 2006 to 2010

Year	2006	2007	2008	2009	2010
No. of vessel	18	13	13	13	20
Fishing days	1,572	1,393	2,744	1,403	2874
Catch (tons)	18,349	14,750	31,161	12,319	29,206

The nominal CPUE trend from 2006 to 2010 is illustrated in Figure 4. It shows a fluctuated annual nominal CPUE between 8.8 tons/day and 11.7 tons/day. The nominal CPUE reached the lowest in 2009 but slightly increased by 1.4 tons/day in 2010 form 2009.

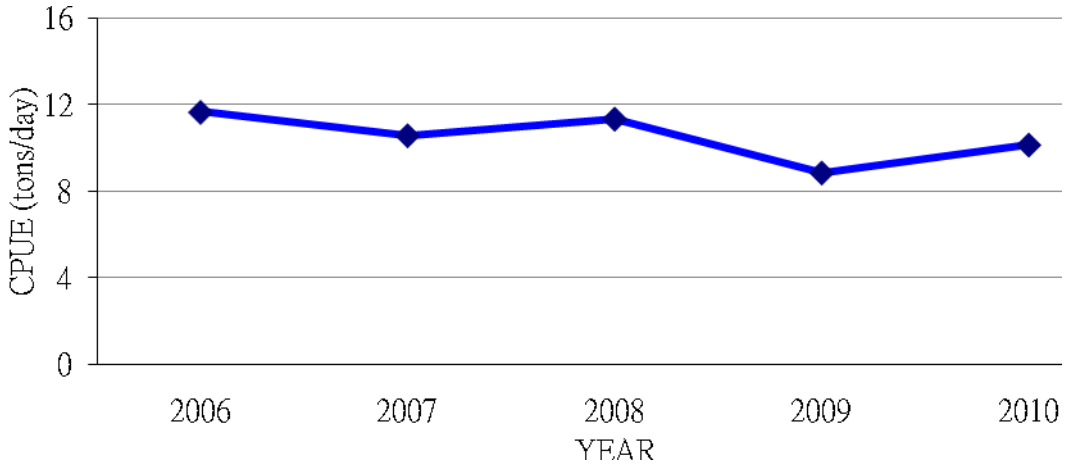

Figure 4. Nominal CPUE trend from 2006 to 2010

From the logbook collected, there was no information on bycatch. Since squid jigging is of high selectivity, it's believed that the bycatch in the fishery is very low.

Figure 5 shows the distribution of annual fishing efforts from 2005 to 2010. The major fishing area was located in area around 76°W – 84°W / 5°S – 15°S with some fishing activities extended to the area around 30°S-40°S. It was also observed that some fishing activities were conducted in the EEZ of Peru from 2007 by one squid jigger under fishing license issued by the Peruvian government.

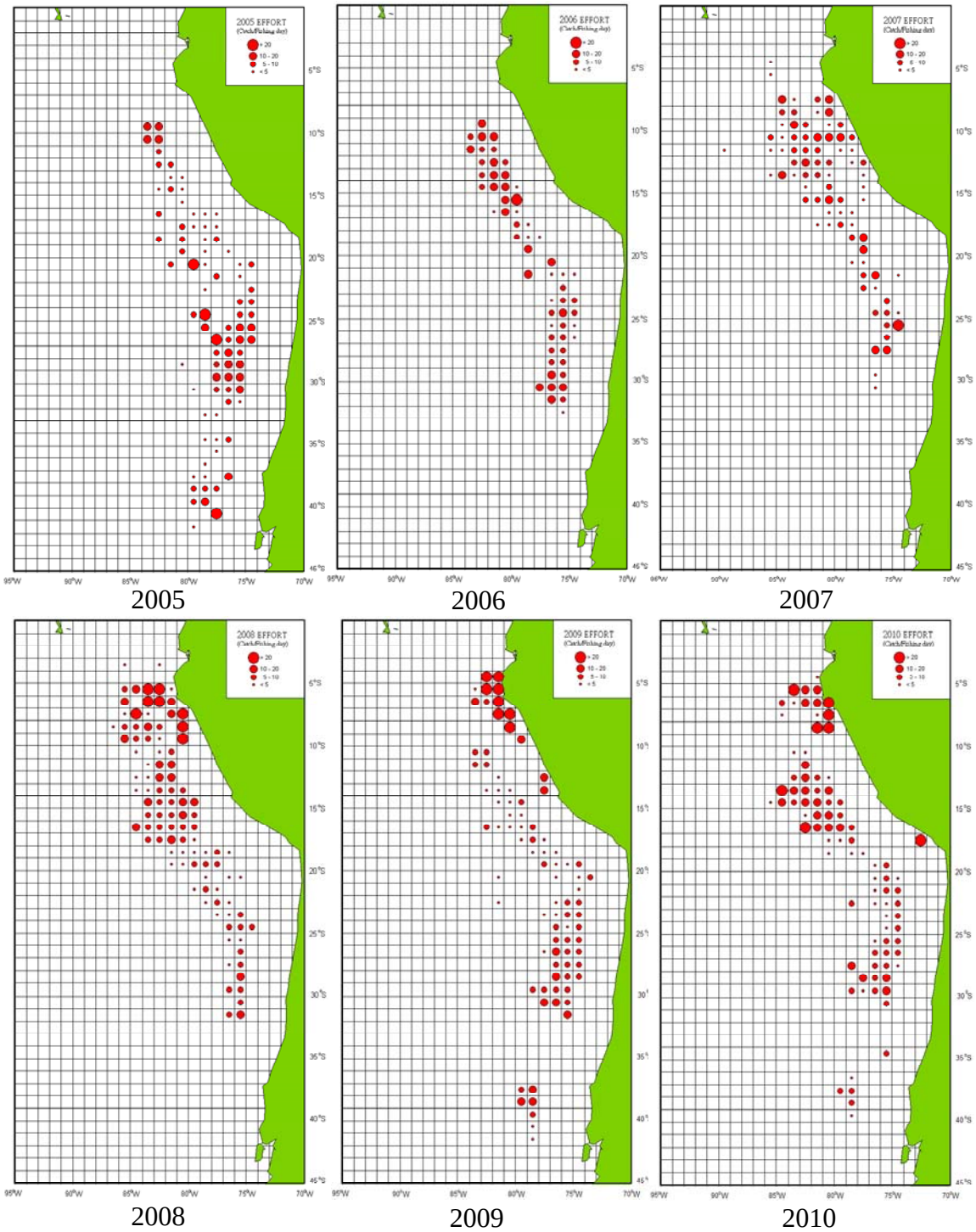

Figure 5. Fishing effort distributions from 2005 to 2010

3. Fishery Data Collection and Research Activities

3.1 Logbook system

The logbook coverage rate is 100%. From 2007, all squid jiggers were required to report their catch in a timely manner through e-logbook system.

3.2 Transshipment declaration

According to the existing regulation, all fishing vessels are required to report the amount of catch for transshipment based on their catch report before transshipment operation. These records will be compiled into the catch of individual vessel and cross check with the logbook data.

3.3 Research

Research on the effectiveness of environmental factors on the population size of jumbo flying squid was conducted. In recent years, we have conducted research programs on the conversion factors of different processing products, CPUE standardization, and stock assessment of jumbo flying squid..

4. Biological Sampling and Length/Age Composition of Catches

The data of size composition are collected from logbook data. Columns are designed in logbook to record the number of boxes containing fish of different round weights (<1kg, 1~2kg, >2kg), as well as columns to record the number of boxes containing processed products (head, tube, wing).

5. Summary of Observer and Port Sampling Program

So far, we have not implemented any observer or port sampling program on our squid jiggers.

6. Implementation of Management Recommendations

In compliance with the interim measure on data collection, we had modified the logbook and e-logbook format according to Standard for Squid Jigging Fishing Activity Data under Annex 4 of SPRFMO Standards for the Collection, Reporting, Verification and Exchange of Data.