

**SIZE STRUCTURE OF SKIPJACK (*Katsuwonus pelamis* - Linnaeus 1758)  
IN FMA 573****Ririk Kartika Sulistyaningsih<sup>1)</sup> dan Arief Wujdi<sup>1)</sup>**<sup>1)</sup>Peneliti pada Loka Penelitian Perikanan Tuna, Benoa-Bali**ABSTRACT**

*Small scale tuna fisheries in Indonesia are dominated by hand lines, trolling lines and purse seine. The aim of this research was to provide the size structure of skipjack in FMA 573 waters as dominant commodity large pelagic species. The data analyzed were collected by enumerator on 7 (seven) fish landing site in FMA 573. Data collection was conducted during a period of January 2013 to December 2013. The result shown in this research, the maximum length of skipjack was 104 cmFL and the minimum length was 20 cmFL found in Kupang, East Nusa Tenggara. Common to 41 cmFL length found in Labuhan Lombok, West Nusa Tenggara with total amount 1,220 specimens. In the present study, length at first capture (Lc) of skipjack caught in FMA 573 was 42.9 cmFL. In conclusion assumed that skipjack caught in FMA 573 was matured.*

*Keywords : Skipjack, catch, size, FMA 573*

**INTRODUCTION**

Small scale tuna fisheries in Indonesia are dominated by hand lines, trolling lines and purse seine. The fleets are made from wood with size not more than 10 GT (Proctor, *et al.*, 2003; Gillett, 2011). Based on FAO International Standard Statistical Classification of Fishing Gear (ISSCFG), hand lines and trolling lines were belonging to the group 'hooks and lines' (Nedelec & Prado, 1990). Skipjack fishing activity in FMA 573 mostly used trolling lines and purse seine (Setiawan, *et al.*, 2013).

Skipjack behavior was liked to gather around the FADs as FADs is a gathering place of plankton and other small fish (RITF, 2013). Skipjack and the juvenile tunas sometimes were being a dominant catches for small scale fishing

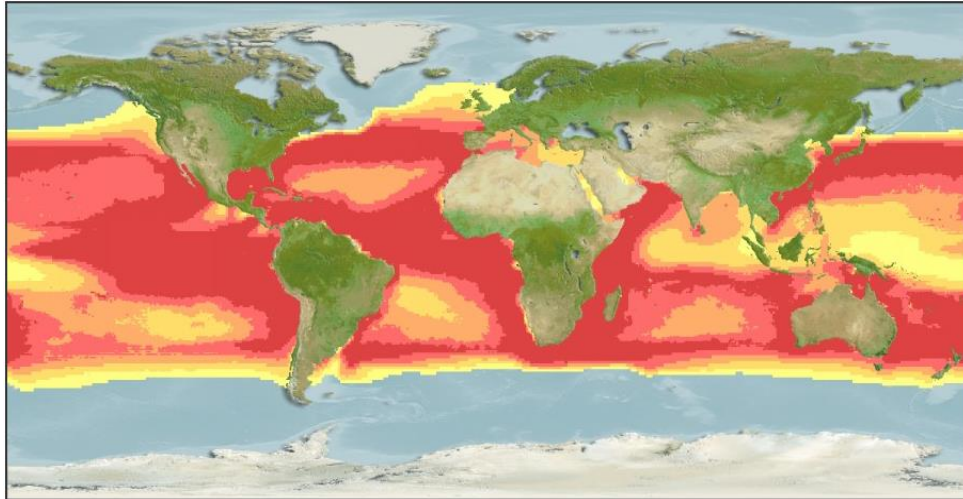
fleets in Sendang Biru, East Java (Nurdin & Nugraha, 2008). Skipjack also dominated in the catch composition in Palabuhanratu, West Java (Mertha, *et al.*, 2006).

Catches in the Indian Ocean have proved disappointing, with vessels reporting very poor catches and local canneries short on inventories. The skipjack price has increased to EUR 1 150 per ton. This situation has caused skipjack prices to rise to EUR 1 075 and EUR 2 120 per ton. Consequently, in the European market, skipjack price strengthened (EUR 1 150 per ton) (Globefish, 2014).

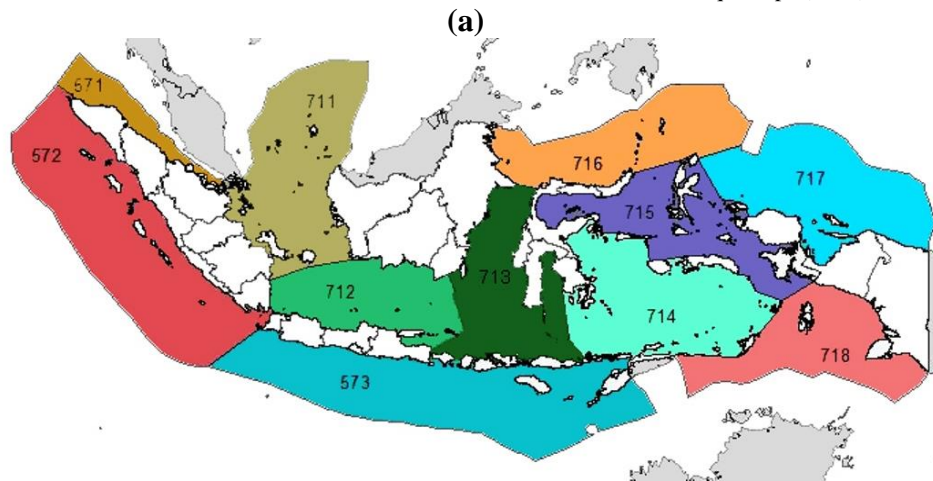
The aim of this research was to provide the size structure of skipjack in FMA 573 waters as dominant commodity large pelagic species.

## **MATERIAL AND METHOD**

The data analyzed were collected by enumerator on 7 (seven) fish landing site in FMA 573 (Figure 1(b)). Data collection was conducted during a period of January 2013 to December 2013. Specimens were measured to the nearest 1.0 cm fork length (FL). However, for data analysis purposes, the length frequency data were pooled into groups with 3 cm length intervals.



Source : Aquamaps (2014)



Source : AEFM – Indonesia (2014)

Figure 1(a). Skipjack distribution map.  
 (b). Indonesian Fisheries Management Area.

## RESULT

- *Fishing Gear*

Hand lines may be use with or without pole or root. This category includes the jigging lines, operated by hand and used on small boats. For fishing in deep waters the lines are usually operated using reels. The bait used may be natural or artificial. Hand lines can be worked mechanically, using powered reels or drums.

Tolling lines are simple lines provided with natural or artificial bait and trailed near the surface or at certain depth by a vessel. Several lines are usually towed at the same time by using outriggers (Nedelec & Prado, 1990). In the present study, skipjack fishing activity in FMA 573 mostly used hand lines (Figure 2).

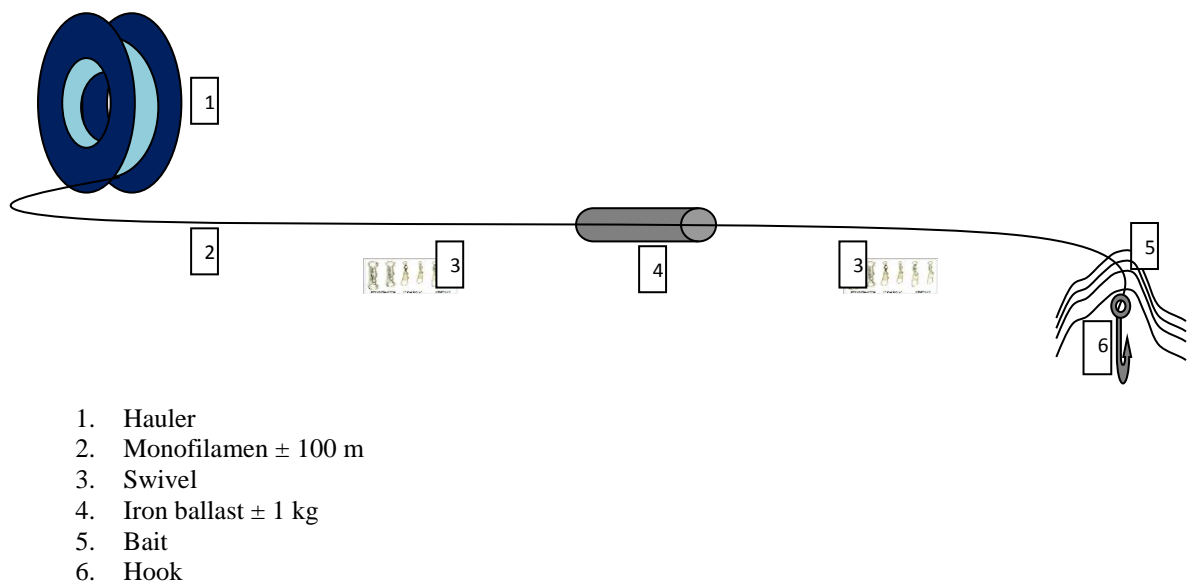


Figure 2. Technical specification of hand lines based in FMA 573

- *Size Structure*

Size structure of skipjack in 7 (seven) fish landing site in FMA 573 ranging from 20 – 110 cm, captured during January to December 2013. A total 12,142 measured specimens of skipjack were examined with fork length (FL). Length frequency for kawakawa pooled into groups with 3 cm length intervals (Figure 3).

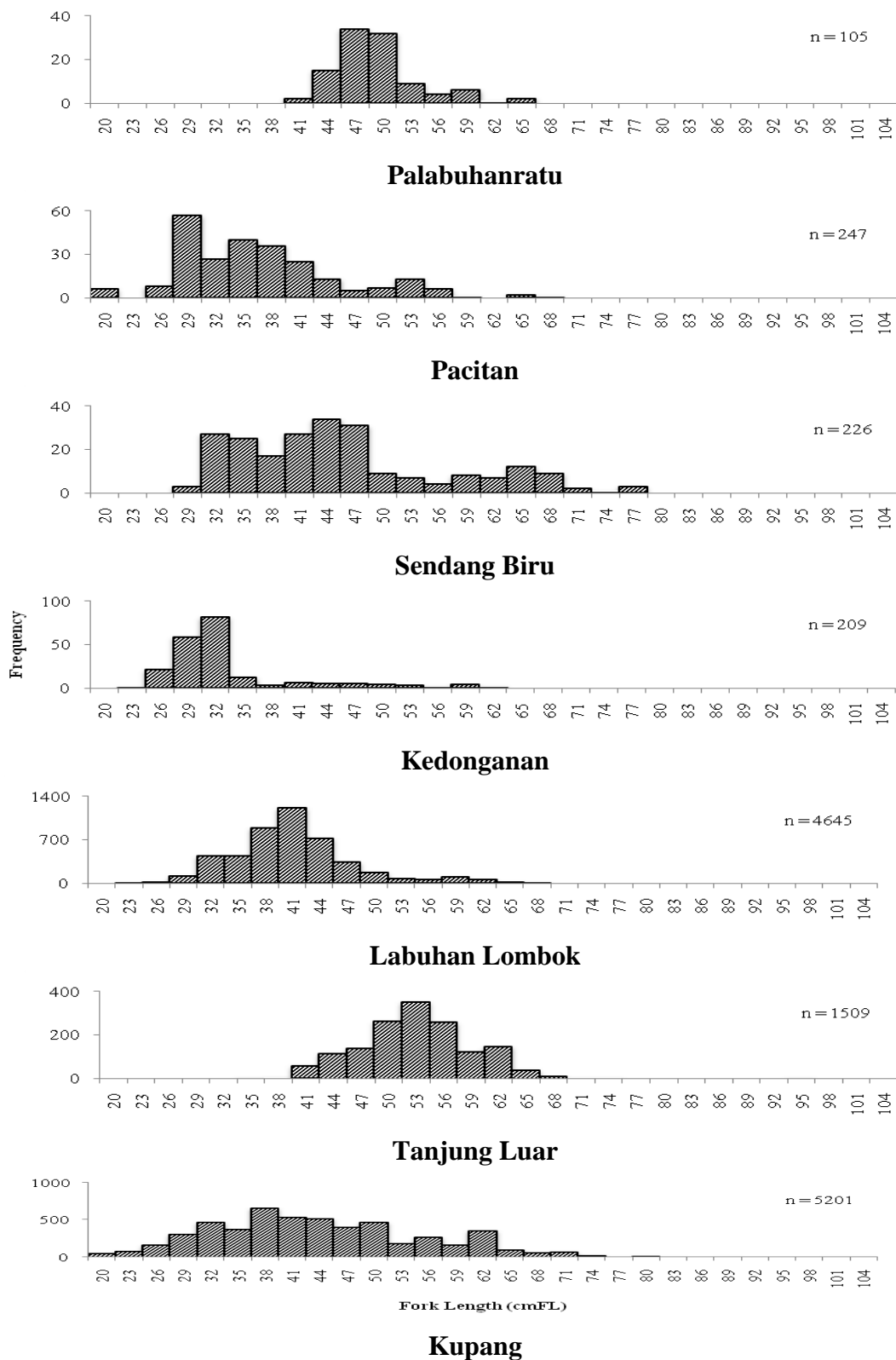


Figure 3. Size distribution of skipjack catches in FMA 573 in 2013.

- *Length at first capture*

A total 12,142 measured specimens of skipjack were analyzed with Microsoft Excel and the result shown the length at first capture of skipjack in the present study was 42.9 cmFL (Figure 4).

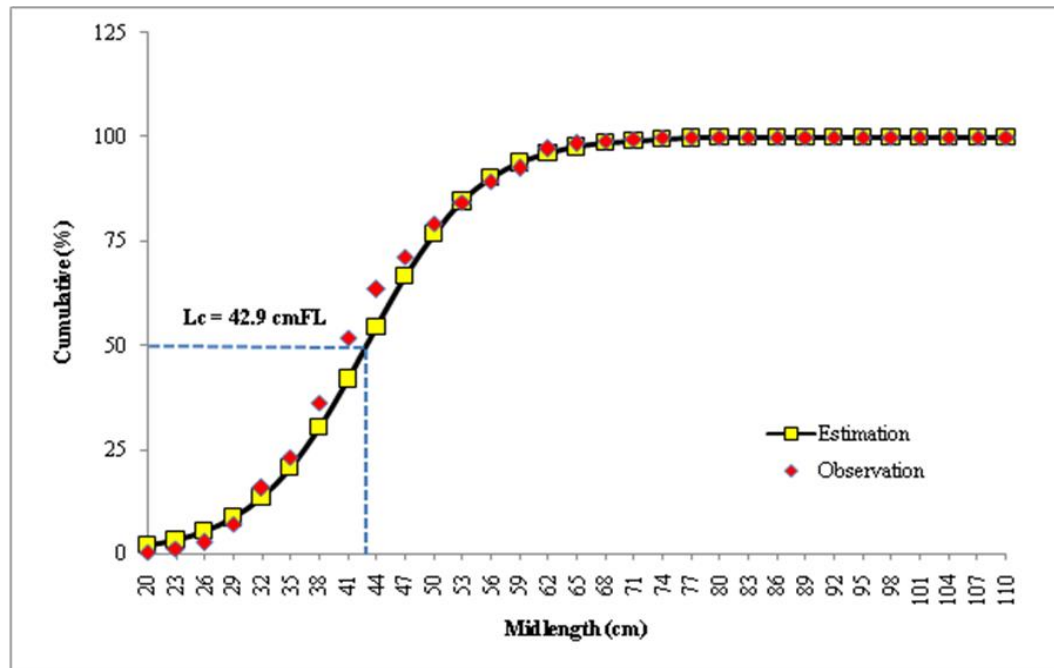


Figure 4. Length at first capture of skipjack catches in FMA 573 in 2013.

## DISCUSSION

Skipjack maximum fork length is about 108 cm, common to 80 cm fork length. Fork length at first maturity is about 45 cm (FAO, 2014). The result shown in this research, the maximum length of skipjack was 104 cmFL and the minimum length was 20 cmFL found in Kupang, East Nusa Tenggara. Common to 41 cmFL length found in Labuhan Lombok, West Nusa Tenggara with total amount 1,220 specimens. Nugraha, *et al.*, (2010), mentioned that maximum length of skipjack

was 78 cmFL in Banda Sea. Nurdin *et al.*, (2012) obtain the size of skipjack was more than 40 cmFL in Prigi, East Java with total amount 52%. From those previous research, assumed that skipjack caught in FMA 573 still proper to catch.

Estimating length at first captured ( $L_c$ ) is used as one of the considerations in the management of fisheries resources. It is assume that if the size of the fish caught on yet had time to mature or have not time to do recruitment, the fishery resources of the fish will tend to become extinct (RIMF, 2004). In the present study, length at first capture ( $L_c$ ) of skipjack caught in FMA 573 was 42.9 cmFL (Figure 4) was indicated lower than the research before. According to Nugraha & Rahmat (2008) research in Bitung, North Sulawesi, length at first capture of skipjack was 49.3 cmFL.

According to Nugraha *et al.* (2010), in Tulehu (Ambon) was 40.9 cmFL. Nikijuluw (2009,) stated that in the Indian Ocean length at maturity ( $L_m$ ) of skipjack ranged between 41-43 cmFL. Assuming that skipjack caught in FMA 573 was matured with size 42.9 cmFL.

## CONCLUSION

1. The maximum length of skipjack was 104 cmFL and the minimum length was 20 cmFL found in Kupang, East Nusa Tenggara. Common to 41 cmFL length found in Labuhan Lombok, West Nusa Tenggara with total amount 1,220 specimens;
2. Length at first capture ( $L_c$ ) of skipjack caught in FMA 573 was 42.9 cmFL, assumed that skipjack caught in FMA 573 was matured.

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