

CHANGES TO THE RED SNAPPER FISHERIES IN THE ARAFURA SEA FISHERIES MANAGEMENT AREA

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Received November 26-2008; Received in revised form April 16-2009; Accepted May 18-2009

ABSTRACT

Red snappers are target species and exploited by industrial fisheries off the Bottom longline, trap and as by product of fish net in Arafura Sea. This study proposed to identify effect of industrial fishing on red snapper fishery; on size and catch composition. Data used in this study were catch data of bottom longline and trap landed in October-December 2004; landing data of the bottom longline and trap in 2005-2007, fish net catch data landed in Merauke. Information on day trips, number of vessel, number of fishing gears was gathered from fishing port Tenau, Kupang, Fisheries District of Probolinggo, and interviews to the captain and crew of bottom longline. Changes in the fishery of red snapper is define by comparing present fishery to those off ACIAR/RCCF Red Snapper research collaboration 1999-2002. Results of the study showed changes in the vessel size, gear size and number, and trip duration in red snapper fishery. The fishing vessels sized of bottom longline changes from higher than 70 GT to lower than 50 GT. Hook size from no.4-5 shift to 5-8. Day at sea decline from approximately 3-4 months per trip to aproximaly one month per trip. In total number of trip decrease from 3-4 trips per year decline to 4-6 trips per year. The catch composition of red snapper, *L. malabaricus* was decline from 47% in 2005 to 24.3% in 2007 of the total catch. Deep sea snapper, *Pristipomoides multidentis* was caught 16.1% in 2005 increased to 36% in 2007. The length at firts capture of *L. malabaricus* decreased from 50.7 cm in 2001 to 41 cm in 2007.

KEYWORDS: red snapper, catch composition, size structure, bottom longline, trap, fish net, Arafura Sea

INTRODUCTION

Red snappers species are belong to the family Lutjanidae. The fresh fish are easy to recognise from their colour, started from jellow to reddish, bright red, dark red to brownish. The family of Lutjanidae consisted of 9 genera, which include *Lutjanus*, *Pristipomoides*, *Pinjalo*, *Aphareus*, *Etelis*, *Aprion*, *Symphorus*, *Symphorichthys*, and *Macolor* (Allen, 1985). Except for the last genus with only one species called *Macolor niger* which is black in colour, other genera having several colour pattern from bright reddish, yellowish/greenish to dark brownish. In most part of the Indonesian waters the first two genera provide the most dominant catch.

The term red snapper or '*kakap merah*' in the field seem to be applied only to the genera *Lutjanus* and *Pinjalo*. Mc Pherson *et al.* (1992) categorized three species of snapper as the red snapper; i.e. red emperor (*L. sebae*), Scarlet sea perch (*L. malabaricus*) and Saddletail sea perch (*L. erythropterus*). Other genera such as *Pristipomoides*, *Aphareus*, *Etelis*, *Aprion*, *Symphorus*, *Symphorichthys*, and *Macolor* are never considered as red snapper even though the colour is bright reddish, such as *Etelis carbunculus*. Goldband snapper, (*Pristipomoides* sp.) or deep-water snapper with its popular name as *kurisi bali* that by some

fishers called as *anggoli*, is likely come from the Singapore market name as *angkoh li*.

Most of Lutjanids fish especially the large size provide the most economically important fish. Of the lutjanid fish, the species *Lutjanus malabaricus*, *L. erythropterus*, *L. bohar*, *L. argentimaculatus*, *L. monostigma*, *L. timorensis*, *L. gibbus*, *L. lemniscatus*, *L. Sebae*, and *Pinjalo pinjalo* provide the common red snapper found in the Indonesian. In Kupang and Sape, scarlet snapper, *L. malabaricus* found matured at 41,3 cm TL and red emperor, *L. sebae* (Andamari *et al.*, 2004). The length at 50% maturity of *L. malabaricus*, *L. sebae*, *L. erythropterus* was reported from the Great Barrier Reef at 54.8, 57.6, and 48.6 cm in SL each, respectively (McPherson *et al.*, 1992, McPherson & Squire, 1992).

Lutjanids are key species in the coral reef ecosystems (Parish, 1987) and major resources for tropical fisheries. They are exploited by industrial line fisheries for local and export market in Indonesia, Australia and Caribbean (Clark & Loyd, 2002; Mendoza & Larez, 1996; Badrudin *et al.*, 2004; Nuraini, 2007). Exploitation by artisanal fisheries directed on them with moderate and heavy fishing pressure being both selective and powerfull active gears in reefs (Herianti & Djamal 1993; Munro, 1967) and seagrass beds.