

ABSTRACT

Fishing small pelagic fish in the Java Sea waters one of them is carried out by a fleet of mini purse seine. The mini purse seine fishing vessel conducted fishing expedition to surpass the vessel's area. In Pekalongan, based on recorded data the number of migrant ships is above 80%. The rest are vessels from the local Pekalongan. Interactions between groups of migrant and local vessels in the activities of fishing expeditions is the focus of research. The decision of both groups to conduct fishing, biologically will affect the biomass stocks of small pelagic fish in the waters. Economically, the strategic interaction between the two groups of fishing vessels will also affect the number of fishing trips and the profit of capture efforts. The determination of the limits of exploitation of capture biologically and economically became one of the goals of this study. This limit will trigger the onset of fishing conflict due to the seizure of resources that can be exploited. Furthermore, biological, economic, and fishing coefficient databases are used in game theory modeling as a tool to determine payoffs or returns from strategic pelagic fishing interactions between migrant and local groups. This modeling applies two scenarios, namely non-cooperative and cooperative models. The calculation of payoffs based on the game theory model can provide the best response selection for fishing interaction strategies between migrant groups and local groups. Based on the results of the game theory model it was concluded that the cooperative model provides a choice of balanced trip numbers and higher returns compared to non-cooperative models. Of course, this option can be used as a form of cooperation between migrant and local groups with government intervention as a controller to prevent fishing conflicts.

Keywords: small pelagic fish, mini purse seine, strategic interactions, game theory