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Productivity Analysis of Mini Purse Seine in PPI Pulolampes
Brebes, Central Java, Indonesia

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Abstract

Fish Landing Base (PPI) Pulolampes is one of fishing base mini purse seine in Brebes Regency, Central Java Province. Many fishers in Brebes more choosing mini purse seine to fishing than other. The problem is about productivity level of this fishing gear. Therefore, the purpose of this study was to analyze many factors which influence weight total catch of mini purse seine and analyzed the productivities. The method applied is case studies. Sampling method used are simple random sampling. Sampling size determined using Slovin formula and obtained 40 vessels as a sample. The data was analyzed using productivity analysis and factors that influenced catch of mini purse seine using SPSS 22 includes basic assumption test and multiple regression analysis. A hypothesis testing consists of normality, multicollinearity, autocorrelation and heterokedastisitas test. Productivity analysis of mini purse seine by gross tonnage (GT) obtained the value - average levels of productivity of 1.56. Based on F test is known that all independent variable can influence dependent variable significantly (R^2 95.30 %, $\alpha < 0.05$). T test analysis obtained results that it is only a variable number of trips (X5) that significantly influence the amount of production by the equation $Y = 4.431 + 1.061X5$, if there is an addition of a number of arrests trip by 1 % with assuming that all variables are fixed, there will be additional fisheries production amounted to 1.061 %.

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1. Introduction

Jaring lingkar (purse seine) is a fishing nets which are assembled and used to catch schooling fishes by circling, so the fish can not escape either from the side or from below (Wahyono, 2003). According BBPPI (2008), *pukat cincin mini* (mini purse seine) has a length of less than 300 m. Thrive in shallow waters (Java Sea, Malacca Strait, waters east Aceh) or along coastal waters in general (coastal fisheries). According to BSN (2010), the length of the purse seine for small pelagic fish target is less than 400 m.

Fish Landing Base (PPI – *Pangkalan Pendaratan Ikan*) Pulolampes located in the Pulogading village at coordinates 06°51'10.01 "latitude and 108°56'56.44" longitude in the subdistrict of Bulakamba, Central Java, Indonesia. According to the Department of Marine and Fisheries in Brebes (2011), the number of fishermen in the PPI Pulolampes in 2011 as many as 1 327 people, while the number of ships as many as 260 units, ie as many as 141 units of motor boats and outboard motors 119 units. Number of mini purse seine fishing gear in PPI Pulolampes 68 units, 1 unit of *arad*, 28 units of *koncong*, 1 unit of *cantrang*, and 2 units of anchovies net. Fish production each year in PPI Pulolampes, both the type and amount of catch, are diverse. In 2014 the number of fishery production amounted to 842 728 kg with a production value of IDR 4 561 802 200 (PPI Pulolampes, 2015).

Productivity can be defined as a combination (compound) of production and activity, wherein the production power is the cause, and the Productivity measures the result of production power. Production power means increased strength, from every element of the production (Ravianto, 1996). According to Minister of Marine and Fishery No. 61 / KEPMEN-KP / 2014, the productivity of fishing boat, have been assigned per Gross tonnage (GT) per year based on the calculation of the number of fish caught per vessel within one year divided by the amount of gross tonnage (GT) the ship concerned.

Based on the fisheries potential in PPI Pulolampes, both from the number of the fleet and the amount of production of mini purse seine, the authors are interested in doing research on the fishing gear. This study was conducted in March 2015 that aims to analyze the factors affecting the total weight of the catch and productivity of mini purse seine in PPI Pulolampes Brebes, Central Java.

2. Methodology

The material used in this study is a fishing unit using mini purse seine in PPI Pulolampes Brebes. As for the fishing unit studied was catching unit on mini purse seine which land their catch for one year (January 2014 to December 2014) in the PPI Pulolampes Brebes.

The method used is descriptive method survey is a case study. The cases in this study is about productivity mini purse seine, with allegations of some production factors such as size or tonnage (GT), engine power of the vessel (HP), length of nets (m), the number of ship crew (person) and the number of fishing trips (day). Descriptive survey study is a study that intends to conduct the inspections and measurements of the certain symptoms that focus on solving the problems at the present time. In the studies, the basic theory began to be required but not used as a basis to determine the measurement criteria of the symptoms observed and measured (Abdurahmat, 2007).

The sampling technique in this study are randomly (simple random sampling). The number or size of the sample population of this study was determined by using a formula Slovin and obtained a total sample of 40 vessels. Data collected by observation, interview, literature study and documentation. Data analysis is performed as follows:

2.1. Analysis of productivity

According to the decision of the Minister of Marine and Fishery No. 61 / KEPMEN-KP / 2014, the productivity of fishing vessels defined per gross tonnage (GT) per year based on the calculation of the number of fish caught per vessel within one (1) year divided by the amount of gross tonnage (GT) ship concerned. The formula used is as follows:

$$\bullet \text{ Productivity by GT of Vessel (ton per GT)} = \frac{\Sigma \text{ Production}}{\Sigma \text{ Vessel Tonnage}} \quad (1)$$

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