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The Impact of the Implementation of the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia on the Traffic Volume of Lobster (Panulirus Spp.) in Gorontalo Province

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Abstract

Impacts of Implementation Regulation of The Ministry of Marine Affairs and Fisheries No. 1/Permen-Kp/2015 to Lobster Traffic Volume in Gorontalo Province. The implementation of the Permen NO. 1/PERMEN-KP/2015 with the aim to protect, preserve, and utilize crustacean resources. This study aimed to analize impact of implementation Permen NO. 1/PERMEN-KP/2015 to lobster traffic volume in Gorontalo Province. The research result that highest of lobster traffic volume on 2012 and lowest on 2016. There was a significant difference ($p < 0.05$) between lobster traffic volume before and after implementation of Permen KP NO. 1/PERMEN-KP/2015. Implementation of Permen KP NO. 1/PERMEN-KP/2015 turned positive impact to lobster because provides a lobster opportunity to regenerate.

Introduction

Lobster is one of the leading fishery commodities that is widely exploited because it has high economic value (Saptanto, 2013; Ernawati et al., 2014; Miswar et al., 2016) and is marketed both nationally and internationally as an export commodity (Boesono et al., 2011; Kembaren et al., 2016; Wahyudin et al., 2016; Zaenuddin & Putri, 2017) whose utilization rate is already greater than the total allowable catch so that stocks have decreased in various Indonesian marine waters (Djasmani et al., 2012 ; Hargiyatno et al., 2013; Nurfiarini et al., 2016) one of which is in the waters of Gorontalo.

The high intensity of uncontrolled fishing causes the average size of the lobster caught to be smaller (Bakhtiar et al., 2013; Hargiyatno et al., 2013; Pranata et al., 2017), and a decrease in production (Triyanti & Yusuf, 2015; Triarso & Wibowo, 2016) and their condition is prone to overfishing (Bakhtiar et al., 2013; Ernawati et al., 2014), so that in 2015 the government through the Ministry of Maritime Affairs and Fisheries issued a Ministerial Regulation (Permen) KP NO. 1/PERMEN-KP/2015 with the aim of protecting the existence and availability of economically important crustaceans, one of which is lobster (Balitbang KKP 2015; Nurfiarini et al., 2016). Stipulation of KP Ministerial Decree NO. 1/PERMEN-KP/2015 certainly has a positive impact on lobster resources.

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Research related to the impact caused by the stipulation of Permen KP NO. 1/PERMEN-KP/2015 is still very little done by researchers including Triarso & Wibowo (2016) in Central Java, Syafitrianto & Makmun (2017) and Zamrud et al., (2017) in Central Sulawesi. The results of research that has been carried out by previous researchers show that Permen KP NO. 1/PERMEN-KP/2015 had a positive impact on increasing the stock of crustacean resources.

To find out the impact of the stipulation of Permen KP NO. 1/PERMEN-KP/2015 on lobster, it is necessary to provide the latest data on lobster traffic volume. Through this paper, it is hoped that the volume of lobster shipments in Gorontalo Province can be known and recorded properly. The purpose of this study was to analyze the impact of the implementation of Ministerial Regulation NO. 1/PERMEN-KP/2015 on the volume of lobster shipping traffic in Gorontalo Province.

Methods

This study uses time series data on lobsters that have been trafficked for 8 (eight) years (2009-2016). The data were obtained from the Fish Quarantine, Quality Control, and Safety of Fishery Products (SKIPM) Class I Gorontalo Station. The method of analysis is done descriptively which is presented through graphs that have been processed in the MS program. Excel. To find out the relationship between lobster delivery traffic volume and delivery time, it was analyzed using regression analysis.

Comparison of lobster traffic volume before and after the stipulation of Permen KP NO. 1/PERMEN-KP/2015 uses data on lobster traffic volume before (2013-2014) and after (2015-2016) the stipulation of regulations and then a t-test is carried out (Zar, 2010) as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S1^2}{n_1}} + \sqrt{\frac{S2^2}{n_2}}}$$

where the average sample 1, the average sample 2, 2 is sample variance 1, 2 is sample variance 2, n1 = sample number 1, and n2 is the sample number 2

Results and Discussion

After simplifying the data for 8 (eight) years, the lobster traffic volume is obtained as shown in Figure 1. The traffic volume of lobster shipping out of Gorontalo Province was highest in 2012 (39,182 fish) and the lowest in 2016 (17,254 fish).

The results of the analysis between the volume of lobster delivery traffic and delivery time for eight years (2009-2016 period) showed a significant relationship ($p < 0.05$) in the form of a regression with a coefficient of determination (R2=0,860) with equations:

$$Y = -6E + 09 + 6E + 06x - 1418{,}1x^2$$

Where Y is the volume of lobster shipping traffic and X is the year of shipment. The results of this analysis indicate that the traffic volume of lobster shipments out of the Gorontalo Province has decreased drastically. The results of the t-test analysis showed that there was a significant difference ($p<0.05$) between the lobster traffic volume before and after the stipulation of Permen KP NO. 1/PERMEN-KP/2015.

In 2009 the traffic volume of shipping lobsters was 25,602 fish, increased to 36,534 fish in 2010 and decreased slightly in 2011 to 35,727 fish and reached its peak in 2012 of 39,182 tails then decreased drastically in 2015 (19,592 fish) and 2016 (17,254 tails). tail) after the stipulation of Permen KP NO. 1/PERMEN-KP/2015.

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The average trend of lobster delivery traffic volume every month from the year before and after the stipulation of Permen KP NO. 1/PERMEN-KP/2015 is presented in Figure 2.

Figure 2 shows prior to the stipulation of Permen KP NO. 1/PERMEN-KP/2015 the peak of lobster shipments occurred in April and May with an average shipping volume of 4,073 and 4,092 fish each month and the lowest was in August with an average shipping volume of 2,033 fish. Meanwhile, after the stipulation of Permen KP NO. 1/PERMEN-KP/2015 the peak of lobster shipments occurred in January (2,217 fish) and the lowest in July (1,134 fish).

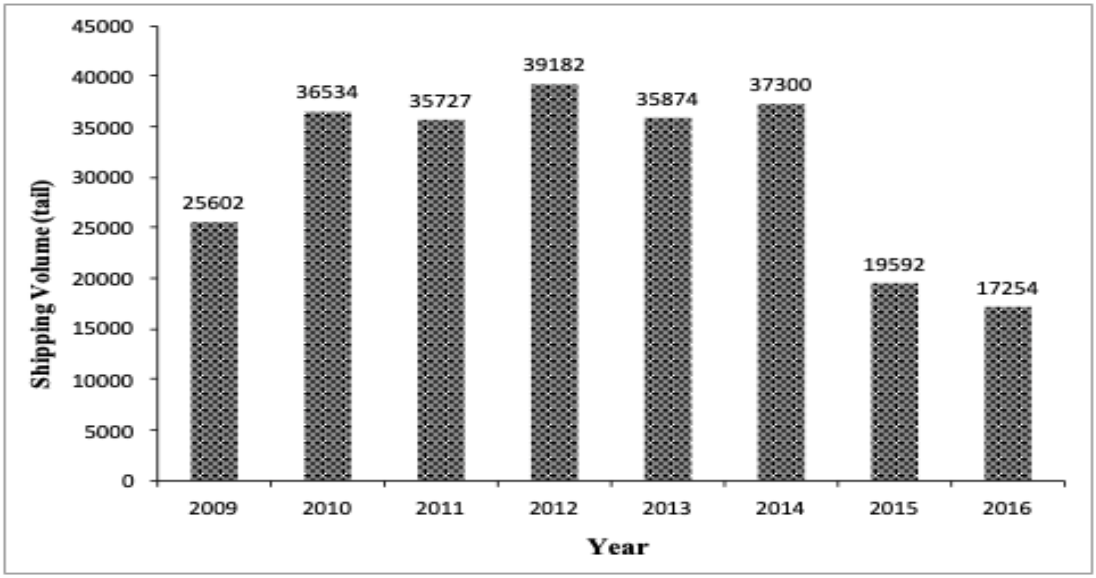

Figure 1. Lobster shipment volume period 2009 - 2016 Gorontalo Province

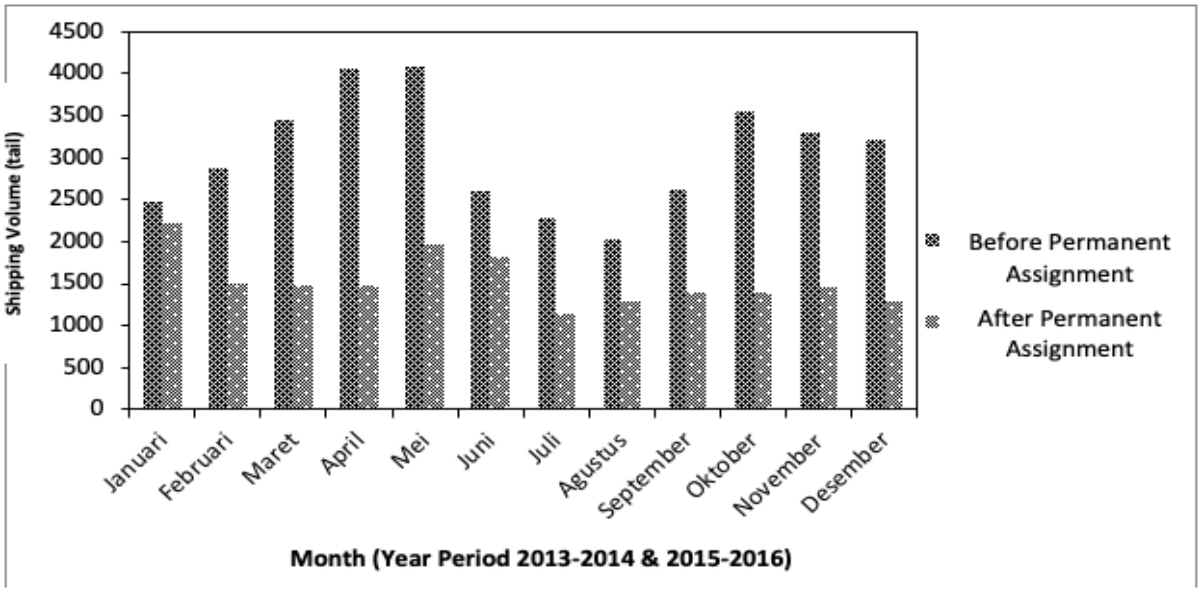

Figure 2. Difference in lobster delivery traffic volume every month before and after the establishment of Permen KP NO. 1/PERMEN-KP/2015

The average percentage decrease in traffic volume after the regulation is set is 50% (1,514 birds) per month.

The decrease in lobster traffic volume after the enactment of Ministerial Regulation KP NO. 1/PERMEN-KP/2015 caused by several factors, namely fishermen who were previously not

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limited by lobster catching criteria, after the stipulation of this regulation it is no longer allowed to catch egg-laying lobsters, lobsters with sizes below 8 cm, and strengthening the role of Gorontalo SKIPM Class I in product supervision. fisheries as a follow-up to the issuance of Permen KP NO. 1/PERMEN-KP/2015.

In the short term Permen KP NO. 1/PERMEN-KP/2015 will be very detrimental to fishermen because the catch is decreasing and automatically affects the amount of income. This does not only have a direct impact on fishermen but also has an impact on the entire production process involving various stakeholders including business actors (Balitbang KKP 2015; Syafitrianto & Makmun, 2017). However, in the long term this policy will not harm fishermen because the implementation of this regulation will provide opportunities for lobsters to spawn before being caught which is useful for maintaining the sustainability of lobster populations and stocks (Boesono et al., 2011; Djasmani et al., 2012; Ernawati et al., 2014).

One example of the successful application of size restrictions and prohibition on the capture of egg-laying crustaceans occurred in the crab fishery in Puget Sound. Dungeness crab fishing licenses have not been issued since 1980, and in 22 years only 181 fishermen held 250 licenses. This strict regulation and supervision has brought back the population of these resources in the present time (Fujaya, 2015).

Based on the results of research from BALITBANG-KKP, it is stated that if Permen KP NO. 1/PERMEN-KP/2015 revoked, it will result in a value of regulatory costs that are greater than the value of the benefits received. This is due to the large costs that must be provided by the government to conserve or restore lobster resources. Meanwhile, if this regulation is maintained, it will have an impact in the medium and long term for the welfare of fishermen, cultivators, collectors and all lobster business actors (Balitbang KKP, 2015)

Conclusion

The decrease in lobster traffic volume was caused by fishermen who were previously not limited by lobster catching criteria, after the KP Decree NO. 1/PERMEN-KP/2015 is no longer allowed to catch egg-laying lobsters and those under 8 cm in size.

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