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DYNAMICS AND CPUE OF FISHING TOOLS IN CONSERVATION AREA CATCH FISHERIES MANAGEMENT AROUND THE BATANG BUNGO RIVER, BUNGO DISTRICT, JAMBI PROVINCE

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ABSTRACT

CPUE (Catch per Unit Effort) of fishing gear needs to be studied and analyzed for the sustainability of capture fisheries along the Batang Bungo River in the future. The research was conducted from April to May 2022. The purpose of the study was to see the dynamics and calculate the CPUE value of fishing gear along the Batang Bungo River, Bungo Regency, Jambi Province. The research method used is the survey method, determining the research location using purposive sampling method. Research results Fishing gear in the Batang Bungo River Conservation Area consists of seven types of fishing gear, namely: gill nets, traps, Tekalak, Sukam, stocking net, Tajur fishing rods, fishing rods, pulleys and shoots. Identification of fishing gear shows that fishing gear in the Batang Bungo River conservation area has five groups, namely fishing gear, gill nets, traps, fishing gear and fishing gear, and fall fishing gear. The fishing gear that dominates more than 50% is from the fishing line group by 55%, followed by gillnet (17%), traps (15%), falling fishing gear (9%) and grappling and injury (4%).

Keywords: CPUE, Management, Capture fisheries, Conservation

I. INTRODUCTION

Capture fisheries management is currently faced with several situations such as over-exploitation, the operation of fishing gears that damage the environment (destructive fishing gears), restoration and shifts in habitat quality, pollution, the entry of foreign species (native species) and global climate shifts (climate change) [1]. Fishing gear in conservation areas along The Batang Bungo river is still relatively traditional and the types are sufficiently diverse. Of the total fishing gear, there are some that are still functioning and some are no longer functioning and some are experiencing innovation in their form and use. One way to manage capture fisheries by regulating and limiting the number of fishing gear in the waters. That way the level of exploitation can be reduced. But to make it happen is not easy, because everything needs a process and attention from all fishery stakeholders. The fishing gear used is always adapted to the natural conditions of the environment where the fish are located, so that not all-fishing gear is found in all areas. Based on the various types of fishing gear, it can be shown that fishing is a main job or a side job. In people whose main job is fishing, there is a culture related to their fishing gear, which is related to the issue of belief in the power of God who gives life and hope of safety while working to find fish. The fishing gear is still sustainable until now, because innovation is carried out in its manufacture so that it is in accordance with the needs of the user community [2].

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The dynamics of fishing gear are closely related to competition, so each fishing gear has a different production level and CPUE value, according to the ability of the fishing gear to catch fish. With this dynamic, fishermen have many choices in exploiting their resources, but need regulation and management. So that there is no over-exploitation. So the CPUE of fishing gear needs to be studied and analyzed for future fisheries management and sustainability. The purpose of this study is to see the dynamics and calculate the CPUE value of fishing gear along the Batang Bungo River, Bungo Regency, Jambi Province

2. RESEARCH METHOD

Time and Place

The research method used is a survey method. The research was conducted from April to May 2022. The method of using the research station was purposive sampling. The research was carried out at three observation stations in the Batang Bungo River conservation area, namely: Station I in the conservation area, namely in Dusun Laman Panjang, Bhatin III Hulu District. Station II is located in the Lubuk Manik reservation area, Rantau Pandan, Rantau Pandan District. Station III is located downstream of Muko-muko Bhatin VII, Dusun Tebat District, the distance from station I to station II is ± 11 km and the distance from station II to station III is ± 9 km.

Data Analysis

This study uses descriptive qualitative data analysis based on primary and secondary data. While the analysis of CPUE value (Catch/Unit Effort) is the productivity of fishing gear in the area conservation along the Batang Bungo River, which is calculated using the formula [3]:

CPUE= Catch/Effort

Information:

Catch (C) : Total Catch (kg)
Effort (E) : Total Catching Effort (Day/Trip)

3. RESULT AND DISCUSSION

Dynamics of Fishing Equipment Type

The fishing gear in the Batang Bungo River conservation area consists of seven types of fishing gear, namely: gill nets, traps, telaklak, sukam, stocking nets, tajur fishing rods, fishing rods, pulley fishing rods and guns. [4]. The number per type of fishing gear in Batang Bungo River in the last five years has been dominated by pulley fishing gear, which has a total of 296 units, followed by sharp rods 244 units, gill nets 212 units, traps 159 units, fishing rods 156 units, stocking nets 111 units, shoot 55 units, tackle 15 units and Sukam 14 units. The development of the number of fishing gear along the Batang Bungo River per five years can be seen (Figure 1).

The results of the identification of fishing gear showed that the fishing gear in the Batang Bungo River conservation area had five groups, namely hook and lines, gillnets, traps, grappling and wounding, and falling gears. These results indicate that the distribution or dynamics of the fishing gear used by fishermen in the Batang Bungo River conservation area is quite varied. The fishing gear that dominates more than 50% is hook and line group of 55%, followed by gillnet (17%), traps (15%), falling gears (9%) and grappling and wounding (4%). This is the same as the results of research [5] in the Alai River, Tebo Regency, it was found that the fishing gear type (hook) was very identical with the dominant appearance with the percentage (75%) followed by the type of trap (18%) and the type of net (7%). Production, Trip and Number of fishing gear.

The production of fish catches at three stations along the waters of the Batang Bungo River has fluctuated in the last 5 years. In Rantau Pandan Village 2017 there was an increase of 5 tons/year then it

decreased in 2019 and rose again in 2020 to reach 6 tons/year. Likewise, in Laman Panjang Village, there was an increase in production in 2017 by 5 tons / year and drastically decreased in 2018 and 2019 by 2 tons / year, and again increased in 2020 by 5 tons / year. Finally, in Tebat village, there was an increase from 2017-2019 with a peak in 2019 of 1.5 tons/year, but it decreased again in 2020. The production of the catch at the three stations is presented in full in (Figure 2).

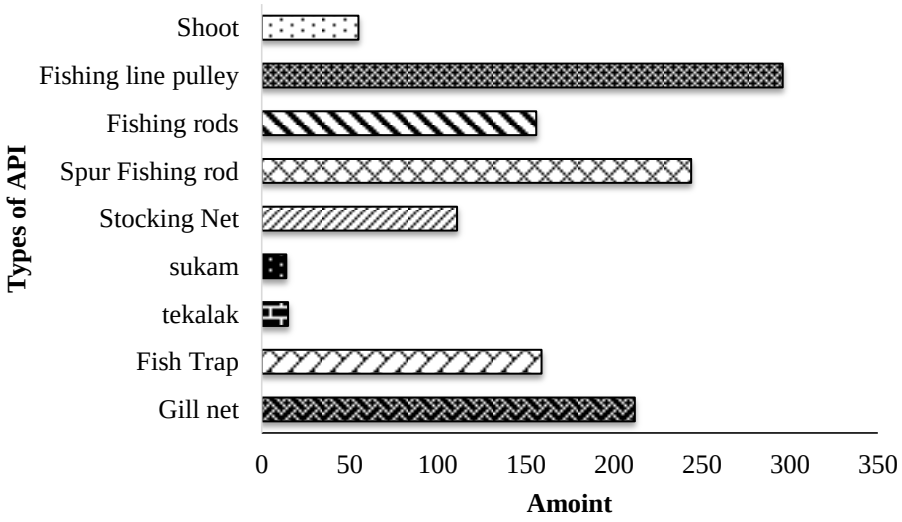

Figure 1. Number of Fishing Equipment Types along the Batang Bungo River 2016-2020

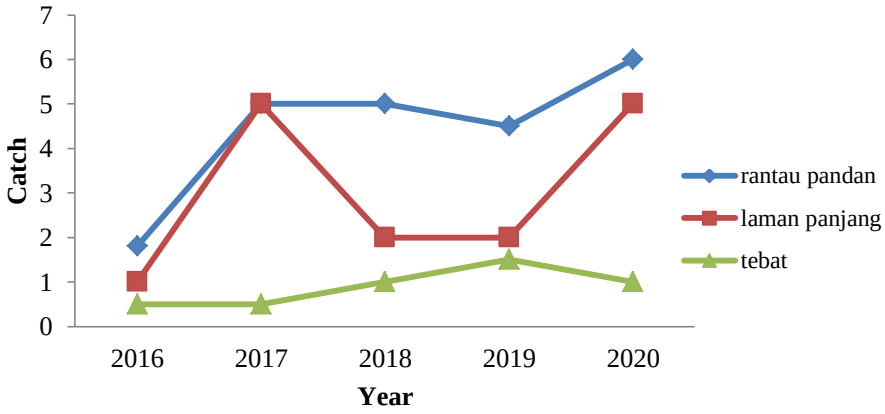

Figure 2. Catch Production at Three Sampling Stations

The production of the catch is influenced by many factors, one of which is the number of trips, the number of catches and the number of fishing gear which can later be calculated using the CPUE value. Tajur fishing gear has the highest number of trips in the last 5 years, while shooting gear has the lowest trips in the last 5 years. The number of trips greatly affects the CPUE value so that too many trips can also make a capture operation ineffective and a waste of time, the impact can be over-exploited if not controlled. The number of fishing gear at the three observation stations shows that the fishing gear is experiencing a declining trend but in Tebat Village the number of fishing gear is quite stable (consistent). The highest number is in Tebat Village with an average of 240 units of fishing gear in the last 5 years, while the lowest number is in Rantau Pandan Village of 69 units in the last 5

years. More clearly can be seen in (Figure 3) and (Figure 4).

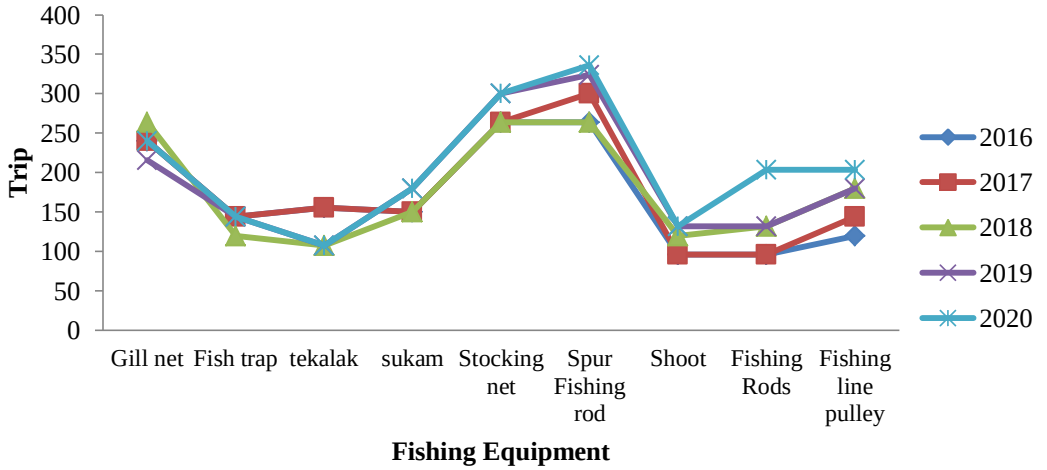

Figure 3. Number of Fishing Equipment Trips in Batang Bungo River Waters

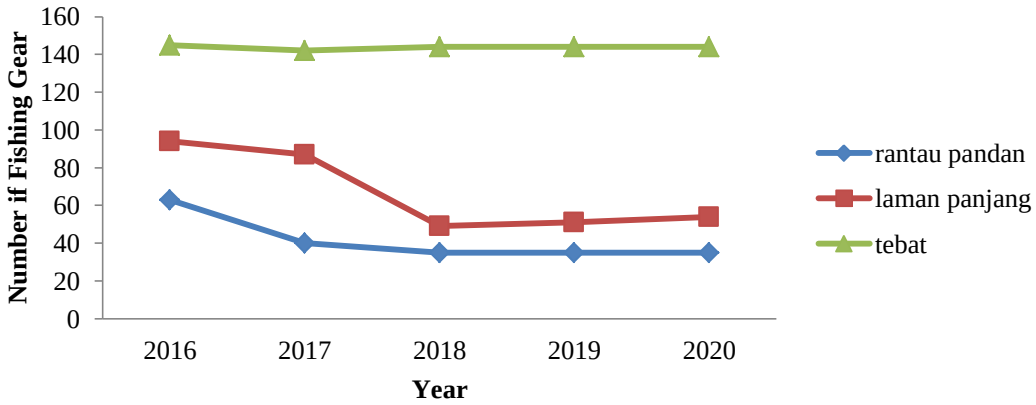

Figure 4. Number of Fishing Equipment in Batang Bungo River at Three Stations

Catch Per Unit Effort (CPUE)

The CPUE value is still widely used for estimating fish abundance, although it has a bias value. CPUE can be a misleading abundance index if incorrectly inputting data in the analysis. The results [6] show that a suitable model for the alternative abundance index is based on the proportion of fishing effort on land, and is adjusted for all cases where disturbance occurs between fishing gear. CPUE value of fishing gear in Batang Bungo River fluctuated, this was caused by several factors, namely: high effort, uncertain seasons (climate change), high market demand for fish and increasingly narrow fishing areas and polluted waters. Tekalak fishing gear has the highest CPUE value in the last 5 years, peaking in 2020 at 0.11 tons/trip, this is thought to be due to the use of tekalak fishing gear is still rarely used by the public. So that catching effort is not as big as other fishing gear, besides that, the total production has increased compared to the previous year. The lowest value of CPUE is gill net fishing gear at 0.01 tons/year in the last 5 years. This can happen because the number of trips for gill net fishing gear has an upward trend in the last 5 years, so even though the total production data has increased, the CPUE value remains low. [7-9] explains that the CPUE value is inversely proportional to the effort Value, where each additional effort will reduce the catch per unit of effort (CPUE). This is because the resources will tend to decrease if the fishing effort continues to increase. According to [10], high fishing effort or has

exceeded the optimum effort/effort can lead to an indication that fish resources are starting to grow experiencing high fishing pressure [11]. Added [12] that the evaluation of the CPUE trend for mangrove crabs in the Caeté estuary is declining, but there is no evidence that the Caeté crab population is overfished, despite de facto open access exploitation for more than 30 years. The key to this is that fishermen and consumers selectively catch large male crabs and local fishing techniques are key factors in preventing overfishing of the Caeté crab population to date. The CPUE value of fishing gear in the waters of the Batang Bungo River can be seen more clearly in (Figure 5).

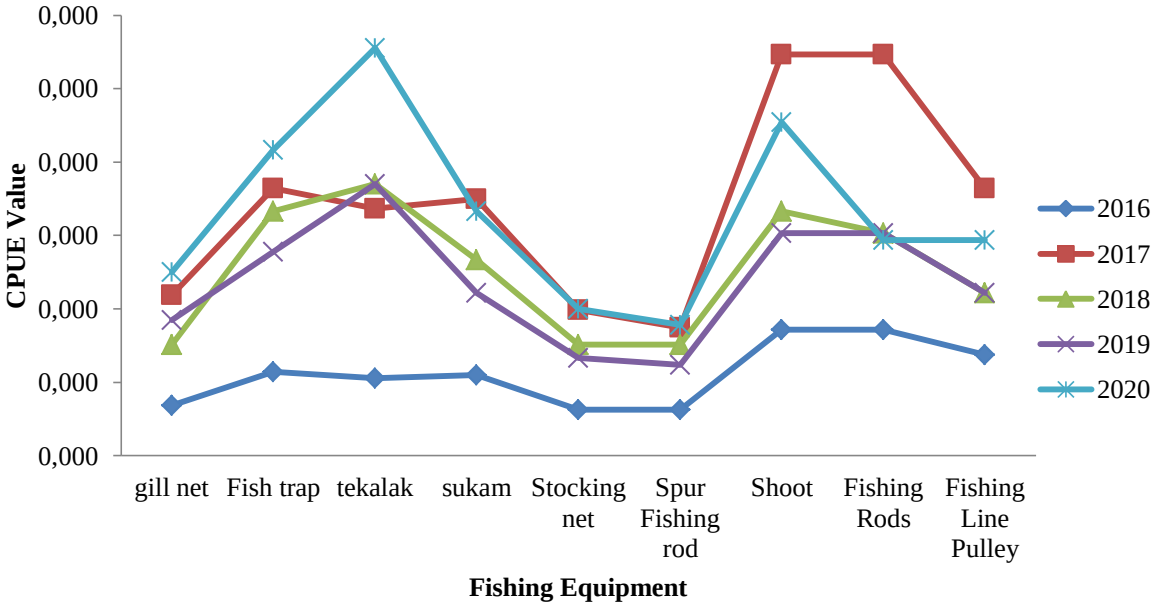

Figure 5. CPUE Value /Year of Fishing Gear in Batang Bungo River

4. CONCLUSION

In this study, it can be concluded that there are seven types of fishing gear in the Lubuk Larangan conservation area along the Batang Bungo River and five groups. The most common types of fishing gear are pulley fishing rods, while the dominant fishing gear group is hook and line by 55%. The results of the catch per unit effort (CPUE) analysis found that the tekalak fishing gear has the highest value of 0.11 Tons /trip and the lowest for gill nets is 0.01 tons/year. Management and inventory of fishing gear in the Lubuk Larangan conservation area along the Batang Bungo River is very important, considering that water conditions are increasingly being degraded and exploitation levels continue to increase, making it difficult to catch fish. The impact is poverty and social conflict.

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