INCOME ANALYSIS OF CATCHING EQUIPMENT BUSINESS REVENUE IN KAMPUNG LAUT VILLAGE, TANJUNG JABUNG TIMUR DISTRICT

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ABSTRACT

This study analyzes the income and economic feasibility of traditional fishermen operating splint fishing gear in Kampung Laut Village, Tanjung Jabung Timur Regency, Indonesia. The research was conducted from March to April 2022 using a survey-based approach. All active splint fishermen in the study area were included as respondents (n = 9), applying a census method due to the limited population size. Primary data were collected through direct interviews and field observations, while secondary data were obtained from local fisheries statistics. Income analysis was carried out by calculating total costs, total revenue, net income, and benefit–cost (B/C) ratio. In addition, a descriptive profit-sharing analysis was applied to examine income distribution between boat owners and fishermen based on locally practiced sharing schemes. The results show that the average revenue reached Rp. 785,180 per trip, with operational costs of Rp. 264,319 per trip, resulting in a net income of Rp. 520,861 per trip. The B/C ratio value of 1.97 indicates that the splint fishing business is economically feasible. These findings suggest that splint fishing gear provides a viable livelihood for traditional fishermen operating in estuarine waters.

Keywords: Belat fishing gear, Income, Kampung Laut Water's

INTRODUCTION

The capture fisheries area of Tanjung Jabung Timur Regency is a potential fishery production center consisting of Kuala Jambi District divided into Tanjung Solok and Kampung laut villages. People who work as fishermen in the sea village carry out fishing activities in the middle of the sea and also the coastal suburbs. Based on the results of a survey of fishermen found in the waters of the sea village using various kinds of fishing gear including gill net, rawai, sondong, grandma's net, bubu and splints. The fishing gear used in this study was a splinter fishing gear (Romdhon et al., 2019).

Fishermen in Kampung Laut Village are traditional fishers who depend on splint fishing gear for their livelihood, with catches providing their main income source. Fishermen's income depends on revenue from marine product catches using splint gear minus associated operational costs. Revenue arises from selling catches at current market prices. Operational costs comprise fixed costs (e.g., ship docking and net repairs) and variable costs (e.g., maintenance, outfitting, fuel, and labor) (Yulianto et al., 2024).

In Kampung Laut Village, fishing operations utilize an array of gear including splint, gill nets, rawai, grandma's nets, sondong, folding bubu, and additional types. Among them, splint gear is commonly employed by local fishermen. This gear features a 300-meter-long net supported by 125 stakes. As a passive device, the splint can harvest substantial volumes of fish across diverse species and sizes. It works by intercepting and confining fish through tidal flows and currents. Captured marine species include gulamah, mullet, tongue fish, sembilang, striped shrimp, chalk shrimp, and others, with gulamah fish comprising the predominant catch (Rosdi et al., 2021).

At present, the revenue generated, total costs incurred, net income earned, and overall profitability for fishermen using splint fishing gear in Kampung Laut Waters are unknown. Information on catches and operational costs—including fixed and variable costs—is required to calculate fishermen's income in the Kampung Laut area. Determining the income of fishermen using splint fishing gear in Kampung Laut Village, Tanjung Jabung Timur Regency, will indicate whether operating this fishing business is profitable (Sin et al., 2023).

This study aims to determine the Income of Traditional Fishermen who use Splint Fishing Gear in Kampung Laut Village, Tanjung Jabung Timur Regency.

MATERIAL AND METHOD

Study Area and Period

This research was conducted in the waters of Kampung Laut Village, Tanjung Jabung Timur Regency, Indonesia, from March to April 2022. The study area was selected purposively due to the dominance of splint fishing gear and its estuarine characteristics, which strongly influence fishing productivity.

Research Method and Sampling

The study employed a survey method. All active splint fishermen operating during the study period were included as respondents (n = 9), applying a census approach. Although the sample size is limited, it represents the total population of splint fishermen in the study area, which is acceptable for small-scale fisheries economic studies (Creswell, 2014).

Data Collection

Primary data were collected through structured interviews, direct observation, and questionnaires, covering operational costs, fishing effort, catch volume, selling prices, and profit-sharing arrangements. Secondary data included fisheries production statistics, number of fishing units, and regional fisheries profiles obtained from the local fisheries authority.

Data Analysis

The data obtained will be analyzed descriptively and presented in the form of a

table. To calculate the income of fishermen using the formula as below.

1. Total Cost

$$TC = TFC + TVC$$

Where :

TC = Total cost of fishing gear fishermen / Total cost (Rp)

TFC = Total fixed cost (Rp)

TVC = Total Variable cost (Rp)

2. Acceptance

$$TR = Q \times P$$

Where :

TR = Total receipts of fishermen of splinter fishing gear / revenue (Rp)

Q = Number of catches/ Quantitas (kg)

P = Selling Price of the catch / Price (Rp/ Kg)

3. Revenue

$$\pi = TR - TC$$

Where :

π = Fisherman's income / Profit (Rp)

TR = Total receipt of fishermen of splinter fishing gear / Total Revinue (Rp)

TC = Total cost of splinter fishing gear / Total cost (Rp)

4. Benefit Cost Ratio

$$B/C \ R = TR/TC$$

Where :

TR = Total Riveniu (Rp)

TC = Total Cost / Total cost of fishing gear splint (Rp)

Information :

B/C ratio >1 = A business worth running/profitable

B/C ratio <1 = A business is not worth running/harming

B/C ratio =1 = No profit and no loss (breakeven)

RESULTS AND DISCUSSION

General Conditions of the Research Area

The area of Tanjung Jabung Timur Regency is 508,570.50 Km^2. which consists of Kuala Jambi District with an area of 11,395.20 Km^2. Kuala Jambi Subdistrict is divided into Tanjung Solok Village and Kampung Laut Village. In the research carried out in the waters of Kampung Laut, these waters are estuarial waters which have a stratified bottom. The location of this study can be seen in the picture below.
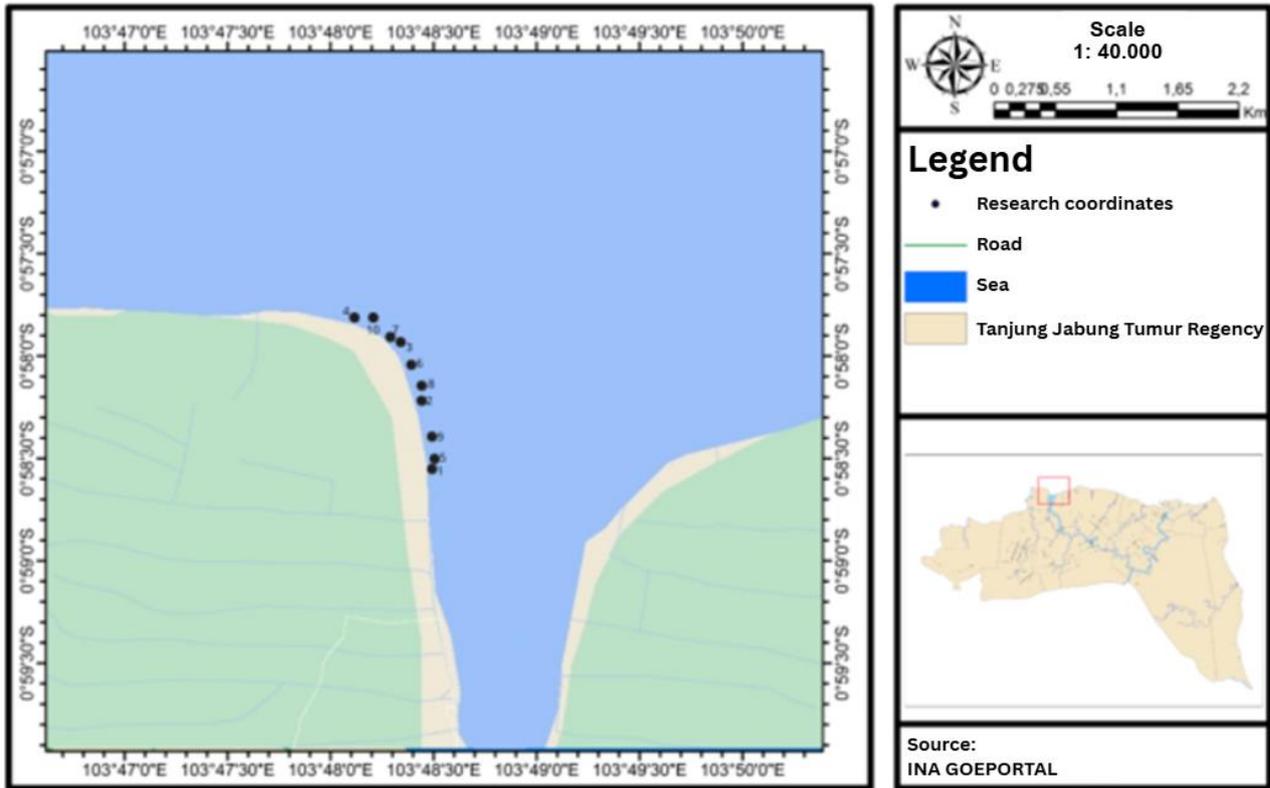
Figure 1. Growth of *Bacillus sp.* bacterial colonies.

Estuarial waters are the confluence of high salinity seawater mixed with fresh water from rivers. Estuarial waters usually have high productivity, according to Rosadi et al (2022) the waters in Kampung laut are estuarial waters that have high productivity where freshwater meets seawater. So that the catch in the sea village has abundant catches and has a high selling price. In the waters of Kampung Laut, fishermen usually carry out fishing operations in the coastal suburbs and also in the middle of the beach. There are various types of fishing gear used by fishermen in the waters of Kampung Laut including gill net, rawai, sondong, grandma's net, bubu, splint and others. The fishing gear used in this study is splints, splint fishing gear is generally operated at tidal times. Fishermen make catches determined by the timing of the tides and operations are required only once a day, The revenue generated depends on the weather and catch.

Characteristics of Responden By Age

Characteristics of respondents by age can be seen in Table1.

Table 1. Characteristics of respondents by age

No	Age	Number (people)	Percentage (%)
1	<30	5	55.56
2	30 - 40	2	22.22
3	>40	2	22.22
Sum		9	100.00

From the results of the table grouping above, it can be seen that from the group aged <30 years as many as 5 people with a percentage of 55.55 and the age group of 30-40 years as many as 2 people with a percentage of 22.22, in this case the average fisherman is still in the productive age and affects performance in generating good income in the running of the fishing business. While the smallest age group, namely the age of >40 years, is only 2 people with a percentage of 22.22. According to Ma'sud et al (2018) the age of less than 30-50 is a relatively productive age to work as a fisherman so that they are able to work optimally so as to get the maximum income. Where it can be said that the age of the respondents in the table above still has a strong physique and energy to work and is still able to participate directly in fishing, this is in line with Aida et al (2017) age is a supporting factor in achieving the success of a business activity, the age that is still productive will be easy in making decisions on the latest innovations.

Characteristics of Respondents By Education

Characteristics of respondents by education can be seen in table 2.

Table 2. Characteristics of respondents based on recent education

No	Education level	Number (people)	Percentage (%)
1	SD	2	22.22
2	SMP	4	44.44
3	SMA	3	33.33
Sum		9	100.00

Based on the table above, the last education of respondents who only graduated from elementary school was 2 people with a percentage of 22.22% of junior high school graduates as many as 4 people with a percentage of 44% and respondents who graduated from high school / equivalent, namely 3 people with a percentage of 33.33%. Education can help fishermen in increasing income with skills in fishing. Sarwono and soeroso (2011) state that having a higher level of education will be easier to recognize and analyze various realities or implications of actions in work.

Respondents Are Awere Of Experience

Characteristics of respondents based on experience can be seen in table 3.

Table 3. Characteristics of respondents by age

No	Experience (Years)	Number (people)	Percentage (%)
1	<5	0	0.00
2	6 s/d 10	5	55.56
3	>10	4	44.44
Sum		9	100.00

Based on the table above, respondents who have 6-10 years of experience are 5 people with a percentage of 55.56 experiences over 10 years totaling 4 people with a percentage of 44.44. In fishing, having experience in working can help increase income and profits. According to Nugroho (2017) The length of experience from fishermen will have an influence on a person's income in carrying out his job as a fisherman.

Respondents' Characteristics Are Aware of Side Businesses

Some splint fishermen have side businesses to make ends meet. Based on the results of interviews with fishermen who have side businesses, it can be seen in Table 4.

Table 4. Characteristics of respondents' side businesses

No	Side business	Number (People)	Percentage (%)
1	No effort	6	66,67
2	Farmer	2	22,22
3	Merchant	1	11,11
	Sum	9	100,00

Based on the table above, there are 6 belat fishermen who do not have a side business with a presentation of 66.67, which means fishermen in the waters of Kampung Laut who make this splint fishing gear the main job. Some belat fishermen who have side businesses as farmers are 2 people with a percentage of 22.22 and as traders only 1 person with a percentage of 11.11. According to Reza (2005) stated that fishermen who have a side business will help the family economy when the fisherman does not operate the splint, the fisherman has side jobs such as farming and raising livestock.

Production Analysis and Value of Splint Fishing Gear Results

Fishermen's income is the result of receipts in one sea in the waters of the Kampung Laut Tanjung Jabung Tmur Regency. Receipts in the form of fishermen's operational catches using splint fishing gear and obtained at selling prices. Based on the test results, the average acceptance of fishermen who use splint fishing gear is obtained as shown in Table 5.

Table 5. Acceptance of the catch of splint fishing gear

No	Types of fish	Average Weight/kg	Price/kg	Average Reception/trip
	Main Catch			
1	Jewfish	149.04	4,000	596,160
	Bycatch			
2	Sea Catfish	2.20	25,000	55,000
3	Mullet fish	2.05	20,000	41,000

4	Tonguefish	2.43	15,000	36,450
5	Striped shrimp	1.03	25,000	25,750
6	White Shrimp	1.16	25,000	29,000
7	Low-value mixed catch	1.82	1,000	1,820
	Discard Catch			
8	Eel	-	-	0
9	Pufferfish	-	-	0
TOTAL				785,180

From the results of the grouping of types of splint fishing gear catches, it can be seen in the table above that the total receipts are Rp. 785,180, - per day that fishermen get. This research was conducted at the end of March to the beginning of April which is the western season or transitional season I. The catch obtained is gulamah fish as the main catch of Rp. 596,160, -/trip with a bycatch in the form of nineg fish of Rp. 55,000, -/trip mullet fish of Rp. 41,000, -/trip of tongue fish of Rp. 36,450, -/ striped shrimp trip of Rp. 25.750, -/lime shrimp trip of Rp. 29.000, -/trip and beliak mata fish of Rp. 1.820, -. According to Reza et al (2015) the revenue obtained in the Western season is Rp. 5,650,000. - per month with a catch per trip of Rp.376,666. - in the Western season. According to Labania et al (2018) This is because the western season is a transitional season where the wind blows erratically which causes erratic catches, causing a decrease in catches both in quantity and quality in Anak Setatah village, Riau Province.

So, it can be concluded that the revenue produced in the waters of Kampung Laut experienced a large acceptance compared to research conducted in Anak Setatah village, Riau Province. Because the waters in Kampung Laut are estuarial waters where seawater meets with river water, this is in accordance with the opinion of Rosadi et al (2022) which states that the waters in Kampung laut are estuarial waters that usually have high productivity where freshwater meets seawater. So that the catch in the sea village has abundant catches and has a high selling price.

Belat Cost Analysis of Splint Fishing Gear

This investment cost for Belat Fishermen is used in the procurement of boats and baskets

Table 6. Investment Cost of Splint Fisheries in Kampung Laut Waters

Types of investments	Quantity/unit	Unit price	Sum
Boat	9	7,500,000	67,500,000
Fiber Box	18	325,000	5,850,000
Total			73,350,000

Based on research in the field, it is known that splint fishing gear fishermen carry out fishing operations as many as 20 times a month. The average catch amount is 160 kg. The operational costs incurred by ship owners are as follows.

Table 7. Operational Costs of Splint Fishermen

Types of fees	Average Price/day (Rp)
BBM	80,889
Snack	17,222
Cigarettes	15,000
Crew labor costs	70,000
Doking	18,750
Net repair costs	45,000
Baskets	8,458
Wooden stakes	9,000
Total	**264,319**

As shown in Table 7, the operational costs incurred by boat owners consist of fuel (Rp. 80,889 per trip), snacks (Rp. 17,222 per trip), cigarettes (Rp. 15,000 per trip), crew labor costs (Rp. 70,000 per trip), docking fees (Rp. 18,750 per trip), net repair costs (IDR 45,000 per trip), baskets (Rp. 8,458 per trip), and wooden stakes (Rp. 9,000 per trip). The crew labor cost represents the payment for one to two crew members (ABK) per fishing trip, depending on the fishing operation. All labor payments are fully covered by the boat owner or financier as part of the operational expenses.

Fishing operations using splint fishing gear are conducted as one-day fishing trips, with an average trip duration of approximately 6–8 hours, depending on tidal conditions. The relatively long fishing duration and the need to provide food and other daily necessities during the trip contribute to the level of operational costs incurred by fishermen in the waters of Kampung Laut Village.

Splint Fishing Gear Profit Sharing System

Fishermen in the waters of kampung laut are workers with a profit-sharing system. According to Fargomeli (2014), fishermen can be distinguished by: owner fishermen (juragan), cultivator fishermen (laborers/ workers) and small fishermen, traditional fishermen. After obtaining income from receipts is reduced by operational costs incurred between fishermen / nahkoda and ship owners with a system of 60:40 for those who have abk 2 (60% for boat owners and 40% for fishermen / tekong) and 70:30 for those who have abk 1 (70% for boat owners and 30% for fishermen / tekong). The shipowner bears all operational costs. This income distribution is in line with research conducted by Angelin (2021) where the distribution of proceeds with gill net fishing gear in Kampung laut village is 80:20 for crew 1 and 70:30 for crew 2. Where all operational costs incurred are borne by the ship owner. The results of the income received by fishermen/tekong can be seen in Table 8.

Table 8. Splint Fishing Gear Profit Sharing System

Income	Revenue sharing system			
Fishing gear	Financiers (60%)	Fisherman/captain (40%)	Financiers (70%)	Fisherman/captain (30%)
Splint	Abk 2		Abk 1	
785,180	471,108	314,072	549,626	235,554

It can be seen in the table above The Splint Fishermen in the waters of Kampung Laut enforce a profit sharing system after the results of fish sales are obtained. 60:40 profit sharing system (2 abk) where financiers get a share of Rp. 471,108 while fishermen/captains get a share of 40% get Rp. 314,072. Similarly, the 70:40 profit sharing system (1 ABK) gets a 70% share of the revenue of Rp. 549,626 and the fisherman/captain gets a 30% share with an income of Rp. 235,554. Where the income for the fisherman/captain is net income because all operational costs are borne by the ship owner/financier.

Net Income of Splint Fishing Gear

The income of Belat fishing gear in the waters of Kampung Laut is the total revenue reduced by the costs incurred during the fishing process or called the total cost. The study was conducted in March to April. Based on the results of interviews conducted by the income of belat fishing gear fishermen in Kampung Laut Village, you can see in the table below. The income of splint fishing gear fishermen in Kampung Laut Village can be seen in Table 9.

Table 9. Fishing Gear Fishing Revenue Splints

No	Types of fees	Average value of splints (Rp)
1	Total receipts	785,180
2	Operating costs	264,319
	Income	520,861

In the table above, it can be seen that the total receipts amounted to Rp. 785,040 and the operational costs incurred were Rp. 264,319 net income obtained using splint fishing gear in the sea village water, which was Rp. 520,861,-/trip. According to the research of Akbar et al (2015) the total receipts amounted to Rp. 533,000,-/trip and the total costs incurred were Rp. 383,000,-/trip with an average fisherman's income of Rp. 150,000/trip. If you look at the income of belat fishermen in the waters of Kampung Laut, it can be said to be quite large, because the total revenue is large and the waters in Kampung Laut have high productivity. So that the catch in the

sea village is suspected to be abundant and has a high selling price and the total costs incurred are not too much. According to Tito (2011), in other words, income is more focused, namely the result of a reduction between the amount of receipts and costs incurred. The revenue obtained should be able to cover operational costs and return capital.

Benefit Cost Ratio

The benefit–cost (B/C) ratio analysis indicates a value of 1.97, which is greater than one, demonstrating that the splint fishing operation in Kampung Laut Village is economically feasible and profitable. A B/C ratio exceeding unity implies that total revenues are able to cover operational costs and generate net economic benefits for fishermen.

This relatively high B/C ratio is closely related to the high productivity of estuarine waters, where the interaction between freshwater and seawater enhances nutrient availability and supports diverse fish resources. Similar findings have been reported in other estuarine and tidal fisheries, where passive fishing gears benefit from favorable environmental conditions and tidal dynamics (Akbar et al., 2015; Rosadi et al., 2022). Furthermore, the reliance of splint fishing gear on tidal movements allows fishermen to optimize catch efficiency with relatively

moderate operational costs, thereby improving overall economic performance.

CONCLUSION

From the results of research on the business income of splint fishing gear in Kampung Village with a profit sharing system of 60:40 (2 ABK) the owner's income received is Rp. 471,108 and the income of fishermen / nahkoda Rp. 314,072 and 70:30 (1 ABK) with the owner's income of Rp. 549,626 and the income of fishermen / nahkoda Rp. 235,554. Where all costs incurred for each purchase are borne by the ship owner including crew wages. The average receipt of splint fishing gear fishermen is Rp. 785,180,-/trip, with operational costs incurred of Rp. 264,319,-/trip so as to generate income of Rp. 520,861,-/trip with a B/C ratio of 1.97 which means that if B/C ratio>1 a business is feasible to run/profitable. The fishing business in the waters of Kampung Laut with splint fishing gear is profitable and feasible to run. The income received by fishermen who own this is quite good because it can cover the operational costs incurred by the boat owner.

SUGGESTION

Based on the research that has been carried out, researchers' suggestions need to be carried out further in-depth research in all fishing seasons regarding the income of fishing businesses with splint fishing gear in Kampung Laut village.

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