

Production Cost Analysis of Small-Scale Fisheries at Bojongsalawe Pangandaran, Indonesia

Nora Akbarsyah¹, Rega Permana², Sheila Zallesa³

^{1,2} Perikanan K. Pangandaran, Faculty of Fisheries and Marine Sciences, Universitas Padjadjaran ³ Marine Sciences, Faculty of Fisheries and Marine Sciences, Universitas Padjadjaran

ABSTRACT

The purpose of the analysis carried out by the authors is to get an overview of the business analysis of fishing activities at TPI Bojongsalawe Pangandaran. The research method was carried out by surveys and direct interviews with fishermen in Bojongsalawe. Based on the results of a study on the analysis of small-scale fisheries in Nusawiru, the R/C value is 1.45, the time required to return all investment costs incurred is 1 year 6 months, the ROI (Return on Investment) value is 65%, so that This small-scale fishery business is feasible and can be continued.

Keywords: *Bojongsalawe, Fishermen, Small Scale, Business, Indonesia*

1. Introduction

Bojong Salawe is one area that has potential in marine capture fisheries. The Bojong Salawe Fish Auction Place (TPI) located in Karangjaladri Village, Parigi District, Pangandaran Regency is one of the TPI that provides a fairly large retribution, with catches reaching 183,841.10 Kg and a Raman value of Rp. 5,353,383,400.00 in 2021. TPI Bojongsalawe is known to have approximately 50 vessels operating with a uniform size of 2-3 GT. The fishing gear used varies, usually according to the type and size of the fish. The fishing gear used includes sirang nets (1.5 and 2 inches), gillnet nets, rampus nets and basic longline nets.

We need to know that fishing activities are influenced by income and operational costs. A large number of catches will affect profits, but operational costs must be taken into account. Therefore, in this article, we will discuss productivity analysis and cost analysis from TPI Bojongsalawe to find out total revenues, expenses, total profits, investment costs, revenue cost ratio, payback period, return on investment (ROI), and other detailed matters. which involves the calculation of business analysis.

2. Research Methods

Location and Time of Data

Collection Data collection were carried out by going directly to the field, by interviewing fishermen, and the management of the Bojongsalawe Pangandaran Fish Auction Place (TPI) located in the Kondangjajar area, Pangandaran Regency. Time of data collection with interviews conducted in June 2022.

Analysis of Productivity and Production Costs

Total Cost Total Cost

(Total Cost) is the total cost incurred during the production process, both fixed and variable costs.

Investment

Costs Investment costs are initial costs incurred when running a business, namely in the first year of business, where the amount is relatively large and cannot be exhausted in one production period.

Production

Costs Fixed

Costs Fixed Costs are fixed costs that do not change due to the influence of the amount of production, these costs consist of taxes and equipment depreciation costs, and others, (Darmawan, MR, & Rahim, MA, 2019) .

Variable Costs

Variable costs are costs that vary according to the amount of production. These costs consist of the cost of raw materials, labor and others. This fee is in the form of cash which is actually paid, in Darmawan, MR, & Rahim, MA (2019).

Depreciation Cost

According to Hery (2014: 138), "Depreciation is a periodic and systematic allocation of the cost of assets during different periods that benefit from the use of the assets concerned". According to Syahyunan (2013: 232) in order to be able to calculate the exact amount of depreciation that must be allocated in a certain period, there are 3 factors that must be considered, namely:

- The acquisition price is all costs related to the procurement of the activity
- Residual value or residual value of a fixed asset which is depreciated is an estimate of the value of assets
- . The useful life or economic life is the period of use of fixed assets which is expected by the company to be influenced by the way of maintenance, other policies determined by the management.

The formula for depreciation expense is:

$$\text{Initial cost} - \text{Residual price}$$

Total Revenue (TR)

Total Revenue (TR) is the merchant's revenue from the sale, Total Revenue (TR) is the result of the number of outputs multiplied by the selling price of the product's output.

Analysis

Cost

According to Suratiah (2015) to calculate the total cost (*Total Cost*) is obtained by adding up the fixed costs (*Fixed Cost*) and variable costs (*Variable Cost*) with the formula:

$$TC = FC + VC$$

Where:

TC = *Total Cost* (Total Cost)

FC = *Fixed Cost* (Fixed Cost)

VC = *Variable Coast* (Variable Cost)

Profit

According to Suratiah (2015) income is the difference between revenue (TR) and total cost (TC) and is expressed by the formula:

$$I = TR - TC$$

Where:

I = *Income* (income)

TR = *Total Revenue* (Total Revenue)

TC = *Total Cost* (Total Cost)

Profit itself can be interpreted if the income is worth greater than the initial capital issued.

Benefit Cost Ratio

B/C is the value or benefit obtained from each unit of the cost incurred. Where B/C is obtained by dividing the total revenue by the total expenditure. Kadariah and Gray (1987), stated that to determine the level of efficiency of a business, parameters can be used, namely by measuring the amount of income divided by the amount of expenditure, where:

$$B/C = \text{Total Revenue} : \text{Total Cost}$$

With the criteria:

B/C > 1: Efficient

B/ C = 1: Break

B/C < 1: Inefficient

Payback Period

Payback period is the period of return on investment that will be paid through profits earned by a business. The faster the payback time, the better to work on it. The formula used according to Pasaribu (2005) is

$$PP = I/Bt$$

Where:

I = Total Investment

Bt = Net benefit on average each year

Return of Investment

Return Of Investment (ROI) is the ratio of profit to investment. ROI is useful for showing the ability of an investment to generate profit. ROI (*Return of Investment*) is to determine the rate of return on investment from the benefits (income) received by the owner, calculated by the formula;

$$ROI = \text{Benefit/Investment} \times 100\%$$

Profit is obtained from the difference between total revenue and investment. The higher the ROI percentage value, the higher the success of the investment invested.

Investment Costs

costs are the initial costs incurred when running a business, namely in the first year of business, where the amount is relatively large and cannot be exhausted in one production period.

3. DISCUSSION

Investment Costs

In fishing activities, costs or financial feasibility are needed for operations so that fishing activities develop. According to Hanley and Spash (1993) and Wudianto (2001), financial feasibility is very important to ensure whether or not a particular fishery business can be continued in the future. Investment costs are costs incurred to obtain fixed assets that will be used by the company to carry out its business activities. Investment costs can also be referred to as capital which is an important factor in fisheries business capture, investment capital is also the main means for smooth production.

The capital required for fishing business in the survey conducted at the fish auction place (TPI) in the Bojong Salawe area, the results were obtained for components of investment costs such as ships and machines measuring 2 GT, for fishing nets there are five types of nets such as Sirang nets (Pukat beach), for the netting (coastal trawl) consists of two sizes, namely the 1.5 inch net and the 2 inch sirang net, then there are Gill nets, Rampus nets (trammel nets), and Basic Rawai nets. Another component that is included in the investment costs at a fish auction place (TPI) in Bojong Salawe is a fish storage area that is useful for storing fish while still being fished at sea.

The total investment cost in TPI Bojong Salawe according to a survey conducted is around Rp. 61,680,000. Of the total investment costs, it is divided into six components, namely:

- For investment costs for 2-3 GT vessels and engines around Rp 46,000,000
- For investment costs for sirang nets around Rp 5,280,000
- For Gillnet investment costs around Rp 4,400,000
- For Rampus investment costs around Rp 1,500,000
- For basic longline investment costs around IDR 4,000,000
- For fish storage investment costs around IDR 500,000

For fishing gear costs consisting of Sirang nets, Gillnet, Rampus and Basic Longlines it takes around IDR 15,180,000 for the period of use which is 1 year of use . The total cost of the ship, engine and storage area is around Rp. 46,500,000 for a period of 2 years.

Production Costs

Production costs consist of two points, namely depreciation, and maintenance.

Depreciation Cost

is accounting in allocating the cost assets to be an expense in a systematic and rational manner during the period of benefiting from the use of these assets. There are three methods to calculate depreciation expense, among others: the straight-line method, decreasing change method, and the special depreciation method.

According to interview data conducted at the bojong salawe Fish Auction Place, the depreciation costs at the TPI are:

1. Ships and engines with a total cost of Rp. 10,250,000 within a period of use for a period of two years .
2. Fishing gear with a total cost of Rp. 14,180,000 in the period of use of each fishing gear one year.
3. Fish storage area with a total cost of IDR 225,000 for two years of use.

Depreciation costs are closely related to the residual price of goods. The residual price is the value of a fixed asset at the end of its useful life. As a general consideration, the longer the life of an asset, the lower its salvage value. Each item has a different residual price. The residual price for each item includes:

1. Two-year-old boats and engines have a residual price of IDR 25,500,000
2. Fishing gear with an age of one year each has a residual price of IDR 1,000,000
3. A two-year-old fish storage area has a residual price of IDR 50,000

Maintenance

Costs Maintenance costs are costs that are often incurred on a regular basis by companies. Maintenance costs are costs that must be incurred to maintain fixed assets so that they remain in good condition from time to time, so they can be used when needed. The costs incurred for the maintenance of fixed assets do not directly increase the value of the fixed assets in question. The purpose of this maintenance fee is to keep business assets in optimal condition during use. Based on data obtained from interviews by one of the informants at TPI Bojong Salawe, maintenance cost data obtained, namely:

1. Ship maintenance costs with a total of IDR 200,000 within 5 years, and in one year doing ship maintenance such as repairing ship leaks of IDR 40,000 for one time repair.
2. Ship engine maintenance costs with a total of IDR 3,000,000 per year.
3. The cost of maintaining fishing gear with a total of IDR 3,600,000 per year.

According to Mulyadi (2009), variable costs are costs whose amount changes in proportion to changes in the volume of activity. Meanwhile, according to Garrison (2006), variable costs are costs whose amount changes proportionally to changes in activity levels. According to the data received from the survey results at TPI Bojong Salawe, the data included in the variable costs are:

1. Fuel (Pertalite)
For a one-time departure for a ship with a size of 2 GT in Bojong Salawe, the total fuel cost is Rp. 114,000. In one month, the trip was carried out 26 times, costing Rp. 2,964,000 while in one year the total cost was Rp. 35,586,000.
2. Ice Cubes
Ice cubes are used to preserve fish that have been caught. In one departure, you only spend Rp. 20,000, so that in one month the costs incurred are Rp. 520,000, while in one year the total cost is Rp. 6,240,000.
3. Other Supplies

The cost of these supplies includes the cost of food, drinks, or other needs for crew members such as cigarettes. In one departure, the total cost incurred is Rp. 150,000. Thus, in one month the total cost incurred is Rp. 3,900,000 and in one year the total cost reaches Rp. 46,800,000.

From the detailed explanation of the costs incurred above, it can be seen that the total variable costs within 1 year are Rp. 88,608,000.

TOTAL REVENUE

Total Revenue is the total amount of all revenue obtained from the selling price, the price per unit, multiplied by the sales volume. This means that the higher the sales volume, the higher the income. Economists generally have the assumption that the ultimate goal of the company's activities is to achieve maximum profit. In other words, the company tries to maximize the difference between what is sacrificed to obtain inputs (total costs) and the amount received from goods and services or produced (total revenues). Profit is the total revenue (Total Revenue / TR) minus the total cost (Total Cost / TC).

$$= TR - TC.$$

Revenue or income is all income earned from a business during a period that is calculated from the sale or re-assessment. In capture fisheries production at TPI Bojongsalawe, what is meant by production is the production of captured fish in several types of fish. Revenue from the acquisition of captured fish production is the multiplication of the number of fish production, which is multiplied by the price per unit of fish.

INCOME ANALYSIS

1. Total Revenue (Rp)

Total revenue is the result of the fishing business minus the cost of crew wages. From the catch and production data at TPI Bojong Salawe, the total revenue was Rp. 128,481,202. This value includes the total income minus the wages of crew members as much as 40%.

2. Total Cost (Rp)

The total cost is a component of the cost obtained from the total variable costs used in 1 year of fishing at TPI Bojong Salawe. Total variable costs are costs incurred in one catch excluding investment costs and production costs for 1 year of operation. This cost includes the cost of purchasing fuel (pentalite), ice, and other necessities. So that the value of the total cost of Rp. 88,608,000.

3. Profit (Rp)

Profit is the result of the difference between the total income and the total cost used in one year of fishing. Salawe is as follows, the profit earned by TPI Bojong Salawe for 1 year is Rp. 40,145,550. This value is obtained from the reduction of total revenue, which is Rp. 128,753,550 minus the total expenses of Rp. 88,608,000.

4. Revenue Cost Ratio

Revenue Cost Ratio is a ratio or comparison of the cost of revenue with the total cost of expenditure. The total revenue cost ratio shows the gross income received for every rupiah spent on production. From the data we obtained, the value of the revenue cost ratio is 1.45. Where this number shows the value of the revenue cost ratio > 1 which indicates that the business is profitable and feasible to continue. It can also be interpreted that for every 1 rupiah of costs incurred for production, an income of 1.45 times will be obtained.

5. Payback Period

Payback Period (PP) is an analysis used to determine the payback period for the initial investment cost. The faster the return on investment of a business, the better the business pattern because the smoother the turnover of capital. Based on the results of the analysis by calculating net cash investment divided by annual net cash inflows, it shows that the value of PP in the fishery production business in Bojong Salawe is 1.54. This value indicates that the fishing business in Bojong Salawe can return the business capital after a period of 1 year and 6 months, this means that the rate of return on capital in the business is relatively fast because the payback period is less than 3 years.

6. Return of Investment

Analysis Return of Investment (ROI) is the value used to determine the profits obtained by fishermen from each amount of money invested in a certain period of time. This value can be used to determine the efficiency of the use of capital. The higher the ROI percentage value, the higher the success of the investment invested. The formula used to calculate ROI is:

$$ROI = \text{the investment return} \times 100\%$$

results of the ROI analysis on the fishery production business in Bojong Salawe that our group did, the ROI value was 65%. Which means that for 1 year the fishery production business in Bojong Salawe can return the initial investment cost when starting the business for 65 times. In another sense, every rupiah invested for investment capital can provide a profit of Rp. 0.65.

7. **Investment**

Investment is the most important thing in a business, large or small capital affects the business to be run. The principle of economics is to get the maximum profit with a small capital. The amount of capital used in the fishing business in Bojong Salawe in 1 year is Rp. 128,753,550. The largest investment component lies in the purchase of ships and engines, which is Rp. 46,000,000. While the smallest investment component lies in the purchase of fish storage, which is Rp. 500,000.

4. CONCLUSIONS

Based on the results of a study on the analysis of small-scale fisheries in Nusawiru, the R/C value was 1.45, the time required to return all investment costs incurred was 1 year 6 months, the ROI (Return on Investment) value was 65% so that this small-scale fishery business is feasible and can be continued.

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