Financial analysis of coral trout grouper (*Plectropomus leopardus*) in Gusung Island, Selayar archipelago regency

Sajriawati¹, A Amir¹, S Elviana¹ and A R Kadir²

¹Department of Management of Aquatic Resource, Faculty of Agriculture, Universitas Musamus, Merauke, Indonesia
²Faculty of Economic and Business, Universitas Hasanuddin, South Sulawesi, Indonesia

Email: sajriawati_msp@unmus.ac.id

Abstract. This research was conducted from January until April 2016, located on Gusung Island, Selayar Archipelago Regency. The research aimed to analyze the income of fishermen coral trout grouper (*Plectropomus leopardus*) in the research area. The study used a survey method with quantitative data analysis. The results of the study found that revenue of fishing rod higher than traps, the total cost of fishing rod higher than traps, but the profit of traps higher than a fishing rod. Revenue from fishing rod equal to IDR 45,000,000 and revenue from trap equal to IDR 36,000,000. Total cost from fishing rod equal to IDR 23,931,000 and total cost from trap equal to IDR 7,056,000. Profit from fishing rod equal to IDR 21,069,000 and profit from trap equal to IDR 28,944,000.

1. Introduction

Coral trout grouper is a species of grouper that is currently appreciated quite high and the market demand is also high both domestic and international. This fish is especially desirable for the consumption of large restaurants inside and outside the country. Coral trout grouper fish are usually exported in living conditions to some countries such as Singapore, Japan, Hongkong, Taiwan, Malaysia, and the United States. In eastern Indonesia, the most sought-after fish to trade in living conditions is the type of snapper and grouper [1].

The international market demand for grouper tends to increase, providing great opportunities for Indonesia to improve its catch [2]. Grouper fish are found in all the warm tropical and subtropical waters that are closely related to the base of the waters and are mostly found in the Coral waters.

One of the areas in South Sulawesi that has the potential of coral reefs in the seawater region of Selayar Archipelago Regency. Selayar Islands has a coral reef area of about 4,400 ha, which is scattered in several places. One of its flagship commodities is the coral trout grouper[3].

Coral trout grouper is one of the mainstay commodity in Selayar Archipelago Regency. It is supported by potential coral reefs that are about 4,400 ha, which is scattered in several places. Coral trout grouper has high economic value with the export market opportunity which was prospective to be developed especially for the grouper life. Meanwhile, according to Directorate General of Aquaculture, the reason why doing grouper cultivation activities because the grouper is an export commodity that is very popular. The demand for grouper annually has increased [4].
Research on the economic study of Grouper fish has also been done in Indonesia. For example, the analysis of the tiger grouper and the duck grouper in the floating nets in Indonesia [5]. There is also research on the analysis of grouper fish market share in Bonetambu Island, Makassar [6], marketing analysis of grouper fish (Epinephelinae) in the market with the city of Manado [7] and analysis of the revenue and marketing strategy of fishing grouper (Epinephelus tauvina) in district Serdang Bedagai [8]. Based on the explanation above, it is important to do a study about financial analysis of coral trout grouper (Plectropomus leopardus) in Gusung Island, Selayar Archipelago Regency.

2. Methods
This research was conducted from January until April 2016, located in Gusung Islands, Selayar Archipelago Regency. A sampling of fishermen or respondents based on the principle of representation in accordance with the opinion of Black and Champion [9] which states that the percentage of samples determined as respondents is at least 1/10 or 10% of the fishing population. So that the number of respondents was 32 fishermen of fishing rod and 29 fishermen of a trap. Retrieval of data by interview method using questionnaires with structured questions. The method of data analysis is quantitative analysis using the following mathematical formulas:

\[ Y = TR - TC \]

Description:
- \( Y \) = Profit (IDR)
- \( TR \) = Total Revenue (IDR)
- \( TC \) = Total Cost (Fixed cost + Variable cost) (IDR)

3. Result and discussion
The financial analysis of a fisheries business is very important to assess the extent of the benefits that can be obtained in carrying out fishery business activities. In financial analysis can be grouped into several fixed costs, variable costs, total cost, gross income (revenue) and net income (profit). The following is a comparison of financial analysis from fishing rod and trap.

Table 1 shows data on the financial analysis fishing rod of coral trout grouper, namely the average investment costs is IDR 9,770,000 per year, maintenance costs are taken from the value of 10% investment of IDR 977,000, depreciation costs of IDR 1,954,000, variable cost of IDR 21,000,000, so that the total cost to be issued in a year is approximately IDR 23,931,000. The average sales earned in a year is IDR 45,000,000, so the net income or profit earned is IDR 21,069,000 per year.

| No | Item                  | Sum (IDR)  | Total (IDR) |
|----|-----------------------|------------|-------------|
| 1  | Maintenance costs     | 977,000    | -           |
| 2  | Depreciation costs    | 1,954,000  | -           |
| 3  | Variable costs        | 21,000,000 | -           |
| 4  | Total Cost            | -          | 23,931,000  |
| 5  | Sales @IDR300.000/kg  | 150        | 45,000,000  |
| 6  | Profit                | -          | 21,069,000  |

Table 2 shows data on the financial analysis trap of coral trout grouper, namely the average investment costs is IDR 10,077,000 per year, maintenance costs are taken from the value of 10% investment of IDR 1,077,000, depreciation costs of IDR 2,154,000, variable cost of IDR 3,825,000, so that the total cost to be issued in a year is approximately IDR 7,056,000. The average sales earned in a year is IDR 36,000,000, so the net income or profit earned is IDR 28,944,000 per year.
Table 2. Financial Analysis Traps of Coral Trout Grouper

| No | Item                  | Sum (IDR) | Total (IDR) |
|----|-----------------------|-----------|-------------|
| 1  | Investment costs      | 1,077,000 | -           |
| 2  | Depreciation costs    | 2,154,000 | -           |
| 3  | Variabel costs        | 3,825,000 | -           |
| 4  | Total Cost            | -         | 7,056,000   |
| 5  | Sales IDR 300,000/kg  | 120       | 36,000,000  |
| 6  | Profit                | -         | 28,944,000  |

The financial analysis comparison between fishing rods and trap of coral trout grouper can be seen on the following bar chart:

Figure 1. Chart financial analysis comparison between fishing rods and trap of coral trout grouper

Based on the chart on Figure 1 above, it can be seen that the most total allocation of fixed costs and variable costs between fishing rod and trap is the fishing rod. The greatest revenue was obtained by fishing rods amounting to IDR 45,000,000, while trap amounting to IDR 36,000,000. In terms of the most profit is trap, namely IDR 28,944,000, while the profit fishing rod only IDR 21,069,000.

4. Conclusion
The results of the study found that, revenue of fishing rod higher than traps, total cost of fishing rod higher than traps, but profit of traps higher than fishing rod. Revenue from fishing rod equal to IDR 45,000,000 and revenue from trap equal to IDR 36,000,000. Total cost from fishing rod equal to IDR 23,931,000 and total cost from trap equal to IDR 7,056,000. Profit from fishing rod equal to IDR 21,069,000 and profit from trap equal to IDR 28,944,000.

References
[1] Bailey M and Sumaila U R 2015 Destructive fishing and fisheries enforcement in eastern Indonesia Mar. Ecol. Prog. Ser. 530 195–211
[2] K. M G H K 2001 Usaha pembesaran ikan kerapu di tambak (Universiti Malaysia Sabah)
[3] Cohen D M, Inada T, Iwamoto T, Scialabba N and Whitehead P J P 1990 FAO species catalogue: vol. 10 gadiform fishes of the world (order gadiformes), an annotated and illustrated catalogue of Cods. Hakes, grenadiers and other gadiform fishes known to date (FAO.)
[4] Rifai U 2013 Mengenal Ikan Kerapu dan Teknik Budidayanya di KJA (ambon: Kementerian
Kelautan dan Perikanan)

[5] Afero F, Miao S and Perez A A 2010 Economic analysis of tiger grouper Epinephelus fuscoguttatus and humpback grouper Cromileptes altivelis commercial cage culture in Indonesia Aquac. Int. 18 725–39

[6] Arfah K A 2017 Analisis Potensi Pasar Ikan Kerapu Di Pulau Bonetambu Kecamatan Ujung Tanah Kelurahan Barrang Caddi Kota Makassar Gema Kampus 12 50–65

[7] Wallong M C, Pontoh O and Rarung L K 2015 Analisis Pemasaran Ikan Kerapu (Epinephelinae) di Pasar Bersehati Kota Manado AKULTURASI (Jurnal Ilm. Agrobisnis Perikanan) 3

[8] Lubis R T, Ginting R and Salmiah S 2013 Analisis Pendapatan dan Strategi Pemasaran Ikan Kerapu Tangkap (Ephinephelus Tauvina) di Kabupaten Serdang Bedagai J. Agric. Agribus. Socioecon. 2

[9] Black J A, Champion D J, Koeswara E, Salam D and Ruzhendi A 1992 Metode dan masalah penelitian sosial (PT Eresco)