

Analysis of the Balance of Income and Expenditure of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency

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Abstract

This research aims to determine the balance of income and expenditure of fishing households in Tatombuli Village, Bonegunu District, North Buton Regency. The population in this study were all fishermen in Tatombuli Village, Bonegunu District, North Buton Regency, totaling 42 people. The sample was determined using the census technique, namely taking the entire population as a sample. The data was analyzed quantitatively using income, household consumption expenditure and savings function. The results of the research show that (1) The average income of fishermen in Tatombuli Village from fishing is IDR26,561,080/year, (2) The average household consumption expenditure of fishermen in Tatombuli Village is IDR20,145,738/year, which includes food expenditure amounting to IDR13,814,881/year and non-food expenditure amounting to IDR6,330,857/year, and (3) Household economic balance, namely surplus or income greater than consumption expenditure with savings of IDR6.415,342/year, which means that the household Fishermen are able to finance all household expenses from the income they earn.

Keywords: Balance; Fisherman; Income and Expenditures.

INTRODUCTION

Fisheries have great potential to become a leading sector in Indonesia given its geographical condition as an archipelago with abundant fisheries resources, which should have a positive impact on coastal communities, especially fishermen (Ridha, 2017). Fishermen, whose lives depend on marine products through fishing or cultivation, generally live in coastal areas that are the transition between land and sea (Bado and Zulkifli, 2020). However, the lives

of fishing communities are characterized by the dynamics of marine resources that require high mobility to obtain maximum catches, as well as large business risks that often place them in uncertainty and poverty, especially for traditional fishers (Bado and Zulkifli, 2020). The causes of this poverty include limited capital, technology, market access, and participation in resource management, plus social factors such as poor education, health, and infrastructure, as well as natural challenges such as bad weather and environmental degradation (Silooy, 2017). The fluctuating and speculative nature of fishers' income also exacerbates this condition, unlike other professions that are more stable in terms of profit planning, thus affecting their food and non-food consumption (Rahim and Diah, 2016).

Household income strongly influences consumption levels, where an increase in income is usually followed by an increase in consumption expenditure, although it is not always measured by the amount of consumption, but rather by the total money spent (Maipita and Indra, 2014). For fishing communities, consumption patterns are more oriented towards fulfilling basic needs because their income depends on fish catches, which are often only enough for daily needs, while the remaining income is used for education, clothing, or home improvements (Hardianti et al., 2021). The low welfare level of fishers, especially traditional fishers, is a major challenge in the development of the fisheries subsector, including efforts to improve the welfare of coastal communities (Ruswanty, 2019). Although fisheries resources have great potential to improve the standard of living of fishermen, the reality is that many fishermen still experience economic difficulties due to low catches that are unable to increase their income (Bado and Zulkifli, 2020).

North Buton Regency, with Buranga as its capital, is one of the regencies in Southeast Sulawesi Province whose territory includes parts of the northern Buton Island, as well as small islands scattered around the area. The coastal waters of North Buton Regency are directly connected to the Banda Sea. This area is the fishing zone for fishermen in North Buton. Fisheries production in North Buton is divided into capture fisheries and aquaculture (BPS North Buton Regency, 2022). Capture fisheries production in North Buton Regency by subdistrict can be seen in Table 1.

**Table1 Capture Fisheries Production by Subdistrict and Subsector (Tons)
in North Buton Regency, 2021**

District	Marine Fisheries	Public Waters	Total
Bonegunu	550,47	-	550,47
Kambowa	287,20	-	287,20

Wakorumba North	311,89	-	311,89
Kulisusu	1.689,86	-	1.689,86
Kulisusu West	216,53	-	216,53
North Kulisusus	846,49	-	846,49
North Buton	3.902,43	-	3.902,43

Source : (BPS North Buton Regency, 2022)

Based on Table 1, it is known that in 2021 Bonegunu Sub-district is the sub-district whose capture fisheries production is the third largest producer in North Buton Regency after Kulisusu and North Kulisusu Sub-districts, namely with a total capture fish production of 550.47 tons.

Tatombuli Village, located in Bonegunu Sub-district, North Buton District, has a population of 333 people with 86 households (KK), where most of the residents work as capture fishermen, while others work as construction workers, farmers, craftsmen, drivers, traders, or migrate to the city. Of the total population, there are 42 fishermen who utilize fisheries and marine potential as a source of livelihood, albeit with simple fishing gear such as fishing rods and nets. The fishing method using nets is done by spreading them out at low tide and taking the fish that stick, while fishing rods are considered cheaper and easier to make. However, fishermen's income is uncertain as it depends on natural conditions, with the west season increasing catches and income, while the east season decreases it. Other issues include limited capital and equipment, which affect catch and income. The income level of these fishermen has a direct impact on household consumption, both food and non-food, in line with the opinion of Pangerapan et al. (2018), that the level of consumption is determined by the size of income. When income increases, consumption also increases, and vice versa, when income decreases, consumption needs are difficult to meet.

Erratic income and many needs make fishermen do various ways so that their needs can still be met, especially for food consumption. Based on the existing problems, it is necessary to conduct research on the balance of income and expenditure of fishermen in Tatombuli Village, Bonegunu District, North Buton Regency.

METHOD

The population in this study were all fishermen in Tatombuli Village, Bonegunu District, North Buton Regency, totaling 42 people. Sampling by means of a census, namely taking all samples if the population is less than 50 people (Rianse and Abdi, 2008). The sample in this study was all the population taken as a source of data as many as 42 people

Data collection techniques were carried out by observation, interview, and documentation. The data were analyzed quantitatively using the income formula, household consumption expenditure and savings function formula. The data analysis method used in this research is as follows:

1. Income, according to Soekartawi (1988), to determine the amount of fishermen's income in this study the formula is used:

$$I = TR - TC \dots\dots\dots(1)$$

Description:

I = *Income*

TR = *Total Revenue*

TC = *Total Cost*

2. Fishermen's expenditure uses the household consumption expenditure equation model approach (Sajogyo, 1997), namely :

$$C_t = C_a + C_b \dots\dots\dots(2)$$

Description:

C_t = Total Household Expenditure (IDR)

C_a = Expenditure on Food (IDR)

C_b = Expenditure on Non-Food (IDR)

3. The balance of income and expenditure of fishermen, the formula to determine the balance of income and expenditure of fishermen in this study used the savings function formula (Sukirno, 2000), namely:

$$S = Y - C_t \dots\dots\dots(3)$$

Description:

S = Household Savings

Y = Income

C_t = Total Household Expenditure

The balance of fishermen's income and expenditure occurs when the amount of fishermen's income is equal to household consumption expenditure or savings equal to zero, while the condition where income is greater than household consumption expenditure is called surplus or households can save.

RESULTS AND DISCUSSION

Fishermen's Income Analysis

Production costs are defined as all production factors sacrificed in the production process. Production costs referred to in this study are costs incurred by fishermen in the process of fishing activities consisting of fixed costs and variable costs.

Table 2 Average Fixed Costs of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency in 2022

No.	Description	Cost (Rp/Year)
1	Boat depreciation	619.416
2	Depreciation of ketinting engine	613.293
3	Flashlight depreciation	348.095
4	Net depreciation	219.259
5	Depreciation of fishing tackle	158.666
6	Depreciation of ice flask	53.333
7	Ice box depreciation	44.264
8	Machete depreciation	10.833
Total		1.838.920

Table 2 shows that the highest fixed cost incurred by fishermen during fishing in one year is boat depreciation of Rp619,416/year. The depreciation cost of the equipment used in this study is calculated by means of the acquisition price of each item used by fishermen to go to sea and then divided by the economic life of the item. The price of goods affects the depreciation value of the goods used by fishermen. When the price of the goods used is expensive, the cost of repairs for damage to these goods is also expensive so that fishermen's expenses also increase. The lowest tool depreciation cost is a machete, besides the lowest price compared to other items, it also has the longest lifespan.

Table 3 Average Variable Costs of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency in 2022

No.	Description	Cost (Rp/Year)
1	BBM	3.578.571
2	Ice Cubes	1.422.857
Total		5.001.429

Table 3 shows that the variable costs incurred by fishermen in Tatombuli Village during fishing in one year, the highest is the type of fuel with an average of Rp3,578,571/year. Variable costs incurred by fishermen in Tatombuli Village are costs that are used once in fishing activities. Fuel purchases are used by fishermen as fuel for ketinting engines in one fishing trip. The cost of purchasing fuel is relatively low because the distance between the beach and the fishing location is quite close, so it does not consume much fuel. The purchase of ice cubes is used by fishermen to preserve the fish they catch so that it stays fresh until the time of sale.

Table 4 Total Average Cost of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency in 2022

No.	Cost Component	Total (Rp/Year)
1.	Fixed Cost	1.838.920
2.	Variable Cost	5.001.429
Total Cost		6.840.349

Table 4 shows that the average total costs incurred by fishermen in Tatombuli Village during fishing in one year were the highest, namely in variable costs of Rp5,001,429. Production costs also determine the high and low income in addition to the amount of catch and the price of the catch. Production costs are all costs incurred during the production process, in this case the production of fish caught by fishermen. Total costs consist of fixed costs which are the cost of depreciation of the equipment used by fishermen, which does not run out in one fishing trip and variable costs consisting of the cost of purchasing fuel and ice cubes that will be used up by fishermen in one fishing trip.

Table 5 Average Revenue of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency

No.	Type of Fish	Catch (Kg/year)	Selling Price (Rp/kg)	Average Value (IDR/year)
1	Baronang	445	20.000	8.897.778
2	Katamba	409	20.000	8.188.571
3	Grouper	328	25.000	8.197.059
4	Tawasa	284	30.000	8.533.333
5	Red Snapper	273	25.000	6.816.000
6	Bobara	253	25.000	6.327.273

Average Revenue		33.401.429
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The most common type of fish caught in Tatombuli Village is baronang fish, reaching 445 kg/year, sold for Rp20,000/kg with an average income of Rp8,897,778/year. The amount of catch is influenced by weather and capital, which affects the availability of fishing gear. Good weather and additional gear such as nets increase catch and revenue, while poor conditions decrease both. Individual fishermen in this village use traditional gear such as nets and longlines, fishing 18-20 days per month on a tide-dependent schedule. Some of the catch is self-consumed, while fresh fish is sold, and poor fish is processed into dried fish.

Table 6 Average Income of Fishermen in Tatombuli Village, Bonegunu District, North Buton Regency

No.	Description	Average (IDR)
1	Revenue (TR)	33.401.429
2	Total Cost (TC)	6.840.349
Revenue		26.561.080

The average income of fishermen in Tatombuli Village reaches Rp26,561,080 per year, which is entirely sourced from fishing activities. Income is an important aspect of fisher families' welfare, although it depends on natural conditions. To supplement their income, family members, including children, help with fishing activities during school holidays. The seasonal and uncertain nature of fishermen's income affects household consumption patterns, both food and non-food, which are often inadequate due to weather and natural conditions (Hardianti et al., 2021). Income levels also reflect socioeconomic status and affect consumption, as stated by Pangerapan et al. (2018), that an increase in income is in line with an increase in consumption, and vice versa.

Fishermen's Expenses

Every household is inseparable from consumption behavior both to meet primary and secondary needs in household survival (Hardianti *et al.*, 2021). Household expenditure is the expenditure on goods and services by households for consumption purposes.

Table 7 Average Consumption Expenditure of Fishermen Households in Tatombuli Village, Bonegunu Sub-District, North Buton District

No.	Expenditure Type	Amount (Rp)	Average (IDR)
1	Food Consumption	580.225.000	13.814.881
2	Non-Food Consumption	265.896.000	6.330.857
Total		846.121.000	20.145.738

Consumption expenditure of fisher households in Tatombuli Village is greater for food needs than non-food needs. From an average income of Rp13,814,881 per year, the majority is allocated for basic needs such as rice, side dishes (especially catches such as fish), vegetables, and beverages. The diet of fishermen includes three meals a day with the staple food being rice, sometimes replaced by cassava. Side dishes are usually taken from unsold catches, while consumption of vegetables and seasonal fruits tends to be rare. Beverages such as coffee and tea are consumed almost every day, while cigarettes are a routine need for most fishers.

Non-food consumption includes education (school clothes, books, tuition), health (simple medicines), electricity and water, and daily necessities such as soap and toothpaste. Expenditures on clothing and household goods/services tend to be incurred only on certain occasions, such as holidays. Other expenses include fuel purchases and monthly land tax payments. Limited income causes fishermen's consumption patterns to focus more on basic needs, with non-food expenditures made sparingly and only for essential needs.

Fishermen's Income and Expenditure Balance

The balance of income and expenditure of fishermen households will occur if the amount of income earned and the amount of expenditure for household consumption is equal or savings equal to zero. Analysis of the economic balance of fisher households in Tatombuli Village can be seen in the following table.

Table 8 Balance of Income and Expenditure of Fishermen Households in Tatombuli Village, Bonegunu Subdistrict, North Buton Regency

No.	Description	Value (IDR/year)	Value (Rp/month)
1	Fishermen's household income	26.561.080	2.213.416
2	Household consumption expenditure	20.145.738	1.678.811
3	Fisherman's savings	6.415.342	534.605
Description		Surplus	



Based on Table 8, the average income of fishermen in Tatombuli Village is Rp26,561,080 per year with an average household consumption expenditure of Rp20,145,738 per year. The difference between income and expenditure shows a surplus of Rp6,415,342 per year, or approximately Rp534,605 per month. The fishermen's income, which averaged Rp2,213,416 per month, falls into the medium income category according to BPS (Rp1,500,000-Rp2,500,000 per month), but is still below the North Buton minimum wage of Rp2,758,984.54. Despite the low income, fisher households are able to fulfill their food and non-food needs from fishing. Household consumption is prioritized on basic needs, with the purchase of non-essential items avoided. This income surplus allows fishermen to set aside some of their income for savings for future urgent needs.

Consumption and savings have an opposite relationship, where an increase in consumption tends to lead to a smaller increase in savings, because households must choose priorities between consumption and savings (Arimawan & Suwendra, 2022). In the context of a fishing family with an uncertain income, it is important to regulate consumption so that the remaining income can be saved, so that consumption patterns are still fulfilled even when income falls. The level of welfare is often linked to income, where high income allows for better fulfillment of needs than low income, becoming a bridge to welfare (Deaton, 2016). Bleys and Whitby (2015) state that an increase in average income can improve welfare, while consumption patterns are an important indicator in reflecting welfare and the success of economic development (Amanaturrohim & Widodo, 2016). Households with low welfare tend to prioritize food consumption, while prosperous families allocate more for non-food needs (Deaton, 2016). This emphasizes the importance of good consumption management in supporting the improvement of household welfare.

Income is an important factor affecting welfare, including the welfare of fisher households in Tatombuli Village, which is still low because the income level of fishermen is below the North Buton MSE. Arimawan and Suwendra (2022) mentioned that an increase in income can improve the welfare of fishing families, while a decrease in income will reduce welfare. Wahbi et al. (2020) also emphasized that income is the main element in achieving welfare, supported by Triana et al. (2020), who stated that welfare can be measured by the level of income received. Household consumption expenditure, both for food and non-food items, reflects household welfare (Anggalisa & Marwan, 2023). A shift in expenditure from food to non-food items is often an indicator of improved welfare, as it shows that basic needs have been met (Suwarta, 2023). However, in Tatombuli Village, the consumption expenditure of fisher households still prioritizes food needs, such as rice as the staple food and side dishes from the





fish catch. When the catch decreases, side dishes are replaced with vegetables or eggs, while meat consumption is rarely done due to the high price. According to Deaton (2016), families with low welfare tend to have a greater proportion of expenditure on food than non-food items. Based on this expenditure pattern, the welfare of fisher households in Tatombuli Village is still relatively low.

Income and consumption patterns play an important role in family welfare. By increasing the amount of income and managing consumption patterns wisely, the level of needs will be met properly, which will have implications for the level of family welfare. In line with the opinion of Amanaturrohim and Widodo (2016), which states that the level of family welfare will be able to be achieved if there is a high level of income and good consumption patterns, because both are the key to fulfilling the level of needs. And supported by the results of research by Alhudhori and Amali (2020), which states that together income and consumption have a positive effect on the welfare of oil palm sharecropper families. Thus, unequal income and consumption expenditure will have a negative impact on welfare levels (Bleys & Whitby, 2015).

CONCLUSION

Based on the research results obtained, it can be concluded that the average income of fishermen in Tatombuli Village is included in the medium income group, which is IDR 26,561,080/year from fishing.

The average expenditure of fishermen in Tatombuli Village is Rp20,145,738/year, which includes food consumption expenditure of Rp13,814,881/year and non-food expenditure of Rp6,330,857/year.

The balance of income and expenditure of fishermen is a positive balance or surplus, namely income is greater than the consumption expenditure of fishermen with savings of Rp6,415,342/year, which means that fishermen households are able to finance all needs for household expenses from the income earned.

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