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## Comparison between the wage and profit-sharing systems to the portion of fishermen in fishing business in Kulon Progo Regency

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# Comparison between the wage and profit-sharing systems to the portion of fishermen in fishing business in Kulon Progo Regency

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**Abstract.** Fishermen's income is basically obtained from wages for their efforts. However, the portion is depends on the systems set out in the prevailing agreement based on consensus or mutual agreement. Comparison between the systems is intriguing to be studied. This study aims to determine the implementation of profit-sharing system and the wage system applied on gill net fisheries business in Trisik Beach of Kulon Progo, Yogyakarta, Indonesia, to determine the break even point (BEP) that is applied as a limitation in determining the implementation of the profit-sharing system and to compare the wage system obtained by fishermen labors and ship owners with the existing fisherman wage in Yogyakarta area. The methods used in this study included case study, sampling, data collection and analysis. The results of this study indicate that the income received by fisherman labors is Rp2,284,000 per month and Rp10,420 per hour, fisherman captain income is Rp6,602,000 per month and Rp300,420 per day or Rp37,552 per hour. However, for employees in the company, they earn Rp1,144,812 per month and Rp38,160 per day and Rp4,770 per hour. The profit-sharing system in gill net monofilament business in Trisik Beach is more advantageous, compared to the wage system in the area.

**Keywords:** Kulon Progo, profit-sharing, wage

## 1. Introduction

One of the main targets that must be pursued in the field of fisheries development is to improve the standard of living and welfare of fishermen and aquaculturist by increasing their income [1-3]. In this case, the government as the policy maker has determined appropriate technology and mechanism of equipment to improve fishing yields and aquaculture production [4, 5]. Issuance of Law No. 16 of 1964 concerning Fishery Products Sharing is a step from the government in regulating the distribution of fishery products that in the fishing business is expected to result in a fair distribution between the owner of the fishing unit and the fishermen labor [6].

There has been no technical guidance on the implementation of the Law of Fishery Products Sharing, both from the central government and regional governments, resulting in a variety of profit-sharing systems implemented in fishing grounds. Therefore, the income of fishermen is also estimated to vary due to the varied wage and profit-sharing systems [7, 8].

With the various wage systems and profit-sharing systems, it is necessary to conduct a research on the effect of the difference in the results of profit-sharing system on the level of fishermen's income and



compared it to the existing wage system in the area of Trisik Beach in Banaran Village, Galur District, Kulon Progo Regency, Yogyakarta Province, Indonesia.

## **2. Materials and Methods**

### *2.1. Research time and place*

Data collection in this study was carried out in August to November 2015 at Trisik Beach in Kulon Progo Regency. In this study, the case is the implementation of the profit-sharing system and wage system carried out by capture fisheries business owners who use gill net monofilament and fishermen, compared to the standard wage system to fishermen in Yogyakarta area. The size of the sample taken was 30 units from 37 fishing vessels using the gill net monofilament located in Trisik Beach, Kulon Progo Regency. Of each ship unit taken as a sample, one fisherman as a respondent was chosen. All owners of ships taken as samples were supporting respondents. Respondents as samples were taken to obtain actual information in relation to the implementation of the system.

### *2.2. Data analysis*

The data needed in this study are classified into two groups, namely primary data and secondary data. Primary data is taken from all respondents who had been determined which is the main problem that will be discussed in this study [9]. The data taken are about the costs of running a business per trip per unit of net income and the income earned from each party that organizes the production from August to November 2015. Primary data collection is done by conducting structured observations and interviews with a list of questions that have been prepared. Whereas for secondary data, they were taken from Office of Local Fishery Auction in Trisik, Banaran Village, Galur District and Yogyakarta Province Fisheries Office. All the data that was collected and analyzed to describe the conditions of the data. A data analysis method used in this research is descriptive method, i.e. the method which focuses on solving actual problems of the collected data by preparation, classification and interpretation into sentences. The data was retrieved by using detailed questionnaire for the appointed respondents by purposive sampling, where a fisherman who would be sampled ought to use a gill net as the capturing tool. Questionnaires conducted in a closed method, i.e. the researchers asked a list of questions in the questionnaire related to the implementation of the wage system and profit-sharing system of catches and all their problems, at the same time trying to provide suggestions for solutions.

## **3. Results and Discussion**

### *3.1. Development of production of catches at local fishery auction of Trisik*

Production of landed catches at Local Fishery Auction in Trisik is the result of local or local boats [10]. Whereas boats from outside Trisik area do not land at Local Fishery Auction in Trisik. However, the production of catches landed has increased in quantity. Then the development of catch production in Local Fishery Auction in Trisik is expected to continue to increase over time. The increase in production of catches is due to the increasing number of vessels in Local Fishery Auction in Trisik itself.

### *3.2. Fisheries in local fishery auction of Trisik*

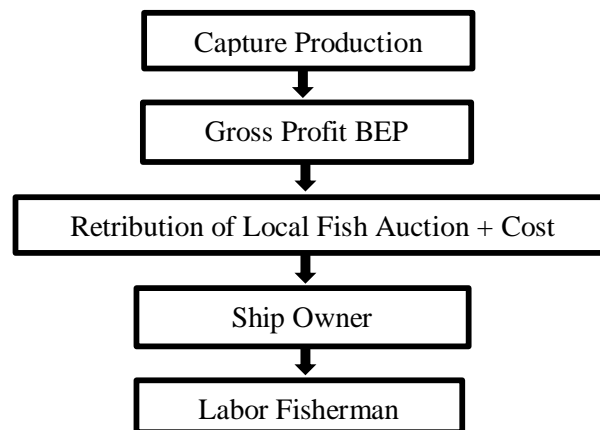
Trisik area is an area that is directly adjacent to the Indonesian Ocean [11]. Trisik beach is sandy, some of the land in the form of sand is planted with food crops and partly as sand mining sites. The population of Trisik is largely dependent on fisheries or catches from the sea. There are 150 families in Trisik area, most of them are fishermen.

The existing facilities in Local Fishery Auction of Trisik are still traditional, because there are still fish landing sites with traditional ships with a one-day trip. According to the ownership of fisheries production facilities, it is divided into two, which are 37 owner fishermen and 72 labor fishermen. Fish search vessels operating in Trisik area are in the form of temple motorboats, amounted to 37 boats. The type of fishing gear used is only one type, which is gill net monofilament. The net needed is only 30 pieces, with each piece having a length of 30 m and 4 m. Mesh size is 2-5 inches and made of filament yarn material.

Long fishing trip (one trip) takes one day. The ships will depart at 5:00 a.m. to 6:00 a.m. and return home at 12:00 p.m. to 2:00 p.m. on the same day. The number of labor fisherman from the capture using gill nett unit consisted of 3 people, which are 1 captain and 2 crew members. The existence of a labor fisherman as a regular crew depends on the ship captain. The captain has the authority to accept a fisherman to work on his ship. The average age of fishermen is 31-40 years old (59 people), and 49 of them have a work period of more than 7 years.

### 3.3. Implementation of profit-sharing system

Gill net ships, like other fishing vessels in Trisik, are traditional ships. Its operational capability is still influenced by sea weather, so the results obtained are uncertain [12]. The production sharing of catches is carried out with two types of systems, namely profit-sharing based on the percentage of net income and by means of daily wages (named locally “*ketep*”). The provision of daily wages is applicable if the value of catch production is equal to the minimum gross amount that must be obtained. The minimum gross value determined by ship owners as Break Even Point (BEP) worth Rp2,500,000. The amount of wages value given by ship owners is calculated based on the number of days of labor fishermen in carrying out fishing operations at sea, where one daily wage is set at Rp25,000. The mechanism for the provision of wages system that applies in Trisik can be seen in figure 1.



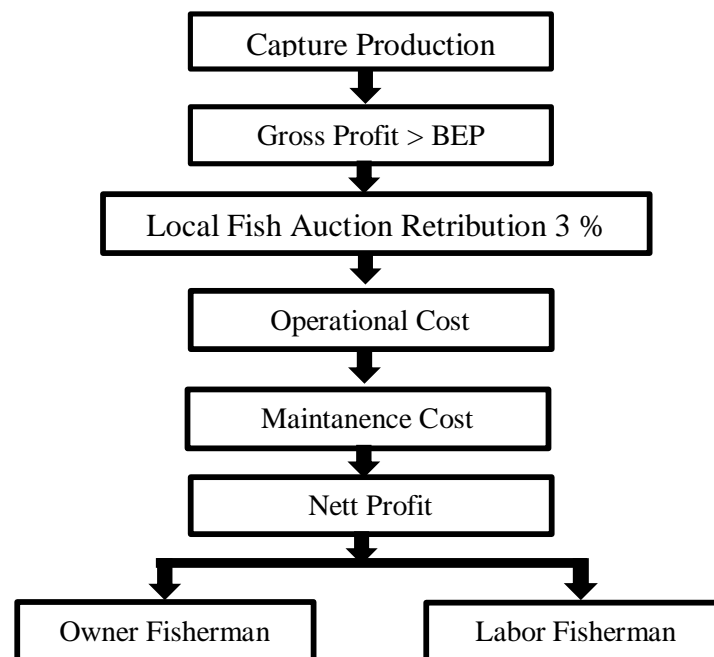
**Figure 1.** Wages system mechanism scheme in gill net fisheries business.

From the scheme, it can be seen that after the gross cost is reduced by the fish auction retribution, the remaining money is entirely the right of the owner fisherman, while the portion that becomes the fisherman's rights will be given by the owner fisherman based on wages.

At the time of the gross profit value > BEP that has been determined, then the distribution of the production of the catch will be carried out using a profit-sharing system with the following scheme at figure 2.

The scheme can be explained as follows:

1. The gillnet capture unit that has been auctioning from the catch will get gross amount, which is the production value that is produced every single catch operation;
2. The catching unit at the time of the auction the catch will pay a retribution fee of 3% of the gross value obtained;
3. The total amount of Number 2 will be deducted again for the operational costs of the business, which are of a different size for each trip;
4. The total amount of Number 3 will be deducted again for the cost of maintenance the capture unit, which amounts to Rp50,000 from the gross value;
5. The total amount of all of the above deductions is a net amount which is the portion that will be received by the fishermen, which is 50% for fishermen who own business units and 50% for fishermen as labor fishermen. Of the 50% share for labor fishermen, it will be divided again for labor fishermen 1 by 25% and labor fishermen 2 by 25%.



**Figure 2.** Scheme of a profit-sharing system on gill net fisheries business.

### 3.4. Operational and maintenance costs

Operational costs in the gill net fishery business are all of expenditures used to purchase materials and equipment. Each of the fishing gear business trips includes 15 liters of gasoline (Rp105,000) and other costs for food and other expenses (Rp70,500), while the cost of fishing business maintenance with gill net represents all costs incurred to maintain machinery, boats and fishing gear so that they can be maintained to the maximum extent possible. The amount of maintenance costs is 10% of the gross profit value after the products are marketed. If every 1 year there is still a rest amount of the maintenance costs, the business owner will distribute it 50% to the labor fishermen and 50% to the ship owners fisherman.

### 3.5. Fisherman revenue

Based on the result of this study, the income of fishermen labor is formed by two rules in taking business results, namely the profit-sharing system and by giving wages [13]. According to local customs and the agreement of the payment to the fishermen, the labor fisherman is paid with a profit-sharing system or by giving wages based on the gross amount of the sale of the catch production.

Based on the result of this study, there is a joint agreement between the owner of the ship and fishermen labor in Trisik, after gross profit value has known by calculating the comparison between capital and operational cost with selling value of the fish captured the amount of the gross profit is determined as the break even point (BEP) value of Rp250,000, then the portion for labor fishermen is done by giving wage system, but if the gross profit more than BEP, then the portion for fishermen labor is done on the basis of a profit-sharing system.

Then, also based on the results of this study, from the mathematically calculated BEP values, it can be seen that the average BEP value per trip per ship in gill net fisheries business is Rp230,880. This value is calculated based on the average total cost spent per ship per trip and the production volume produced by the business unit for each trip.

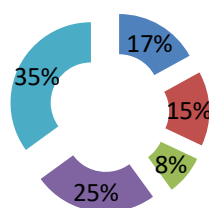
The meeting point between total cost and the market value is the BEP, which is the cost and selling value of Rp230,880 and the production volume of 4 kg. The selling value below BEP is a loss area and

above the BEP point is a profit area. Almost all increases in total expenditure costs are followed by increases in catch production, but these increases cannot determine the increase in the production of catches by a certain amount by increasing the variable costs of the total expenditure. Thus, variable costs are not the only dominant factor in determining the amount of catch.

The fishing business is not a production process that can be determined by the amount of production, that only determined by the amount of variable costs, but is a production process whose production results are also determined by natural factors and fisherman expertise. Because the catch production cannot be determined by simply determining the amount of the operating costs of the business, the BEP value will vary according to changes in average production and operating costs incurred. Thus, the BEP value of Rp530,330 not a fixed value, but will change according to these changes, so that the agreement of the fishermen in determining the BEP value of Rp500,000 is not something that is considered to break the rules or harm one of the parties that do business, because the value is also calculated based on the average operating costs of the business needed to be able to make one time of fishing effort.

### 3.6. Fisherman revenue on the basis of profit-sharing system and wage system

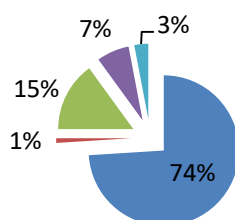
The profit-sharing system is a system that regulates the method of distributing the sale of catching products between the ship owner and the labor fisherman after deducted for production costs and other expenses. The magnitude of the proportion of each part to the gross profit > BEP can be seen in the figure 3.



**Figure 3.** Percent amount of each cost and wages to the gross profit > BEP, ■ maintenance costs, ■ operational costs, ■ retribution of fish auction, ■ fisherman labor, ■ fisherman as ship owner.

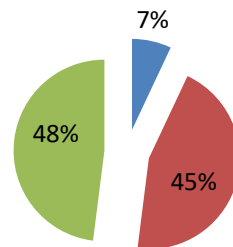
In figure 3, it is explained that the total share received by the ship owner and labor fisherman is the net profit value which is the final yield of the gill net business production after previously reduced by all of costs sharing elements in the production process.

At the time of distribution of production to the fishermen, the cultivator must be done by giving *ketep*, so there is no more calculation regarding the pieces that become a burden in the implementation of the production process. After deducting the TPI retribution fee, all gross remaining values from the sale of catch production belong to the business unit owner. All expenditures for the cost of carrying out the production process, including the provision of wages to fishermen, are regulated by the fishermen. The average amount of delivery costs per trip and the proportion to the gross security value < BEP can be seen in figure 4.



**Figure 4.** Percent amount of each cost and wages to the gross profit < BEP ■ operational cost, ■ ship owner, ■ fishermen labor, ■ maintenance cost, ■ retribution.

With the enactment of the provision of wage system, it turns out that it gives benefits to the labor fishermen, because without getting the catch, they still get wages from the ship owner. In these conditions, the ship owners must pay their own costs to cover the production cost deficit, which in the profit-sharing system should be a joint burden. The average income of fishermen per trip and the proportion to net profit value less than BEP as shown in figure 5.



**Figure 5.** Average fishermen's income per trip and its proportion to gross profit < BEP, ■ ship owner, ■ labor fishermen, ■ captain fisherman.

In the figure 5, it appears that the proportion of fisherman owner of the ship is very small compared to labor and captain of fishermen. This is one of the fishing strategies of the owner to tie the labor and captain of fishermen so that they can still be invited to cooperate even though the catch is not available. Thus, the provision of rewards with the wage system will better reflect the fairness than using the profit-sharing system because in this system, the ship owner does not bear any risk, but only receives benefits from each operation of the fishing effort. Considering that the existing fisheries sharing regulations are still difficult to be fully implemented and there are no standard technical implementation rules regarding wage systems in fishing business, the local government should evaluate whether the rules for profit-sharing system and wage systems are needed for the benefit of all parties.

### 3.7. Comparison of revenue through the profit-sharing system with wage system in Trisik, Kulon Progo

To see how the comparison between earning income according to the wage system and profit-sharing system for fishing business results, it can be seen from several aspect as follows:

- a. The responsibility and risk of the ship owner is to provide operational capital, maintain fishing gear with the risk of a ship accident business and lose the ship and its fishing gear. The responsibility of the labor and captain of fishermen is to operate, maintain, make raw materials with the risk of accidents at work. However, in accordance with Article 9 of Law No.3 of 1992 concerning Social Security Workers, there is a coverage of work accident insurance, including: costs of transporting, costs of inspection, treatment, and maintenance, rehabilitation and compensation costs (partial disability, total permanent disability and death). Besides, according to Article 12 of Law No.3 of 1992 that workers who die in common ways (not due to work accidents) are entitled to death insurance (funeral fees and compensation money). If a fisherman does not make a catch because of illness, the fisherman does not get income. But according to PP No. 8 of 1981 concerning Wage Protection, employers must pay wages if the worker is sick (100% in the first 3 months, 75% in the second 3 months, 50% in the third three months and 25% in the fourth three months), while workers who do not enter work because circumcising her child is paid 2 days and the wife who gives birth is paid 1 day. For the calculation of working time, in accordance with Law No. 3 of 1951 concerning Workers Supervision, workers cannot work more than 7 hours a day and 40 hours a week. After the worker has been carrying out work for 4 hours continuously, the rest period must be held not including working hours.
- b. Wages received by company employees when compared to the wages received by fishermen in accordance with the profit-sharing system. The average income earned by fishermen per ship per trip is with working hours from 05:00 to 12:00 when the gross profit > BEP for the Rp300,100 for the captain fisherman, while the usual labor fisherman costs Rp140,200 and the owner of the ship is

Rp620,490. However, if the average income of fishermen is per ship per trip with working hours of 05:00 to 12:00 if the gross profit < BEP for the captain fisherman is Rp20,920 the fishermen labor is Rp20,780 and the ship owner Rp4,700. As for the wages given by the company to its employees in accordance with the wage system, if the working hours are 5 working days per week with a standard time of 8 hours per day and 40 hours per week, then the calculation of wages that should be received is Rp50,572.

### *3.8. Effective justice of work and profit-sharing system*

The time that results from the work of a fisherman to make a fishing is to leave from 5:00 to 12:00 (7 hours per day or 49 hours without a break in one week). If after catching the fish, there is damage to the fishing gear, then the average fishing gear repair takes 3 hours, so the working hours are 10 hours per day, 70 hours per week, and 200 hours per month, but for private employees who work 8:00 a.m. to 4:00 p.m. (42 hours per week and 174 hours per month). If it exceeds the provisions of the hour, the company will apply the overtime system.

A captain fisherman conducts 10-hour work activities with a reward of Rp300,100 (per hour Rp30,100, Rp6,020,000 per month). As for labor fishermen earning Rp2,840,000 per month, while the income of a ship owner ranges from Rp12,498,000 if the price of the ship and its driving machine is Rp50,000,000, it will reach BEP for 2.5 years, but for company employees who do work activities for 7 hours per day the wage received is Rp50,572 or Rp1,314,872.

Fishermen labor in charge of fishing and repairing fishing gear with the risk of work lost in the sea, died of big waves and accidents at sea. Whereas the ship owner is responsible for safety on board, manages sources of operational costs, regulates profit-sharing, provides fishing facilities, and manages the fishing permit with the risk of losing the vessel, losing fishing gear, and experiencing losses if it does not get the catch. But for employees in the company must be able to complete all production targets, comply with the rules that have been set, with the risk of disability, die due to work accidents and contaminated air pollution.

## **4. Conclusions**

The profit-sharing mechanism of the gill net monofilament fishery business in Trisik, Kulon Progo, from gross profit value is deducted for Local Fish Auction retribution costs, operational costs and maintenance costs. The rest amount of the deduction is net profit value for 50% of fishermen and 50% of the ship owner. Monthly income by fishermen labor Rp2,840,000, captain fisherman Rp6,020,000, while the monthly income received by employees at the company is Rp1,314,872. It is more profitable to use a profit-sharing system compared to the local wage standar. Job of labor and the risks of work to the workers by using a profit-sharing system is greater than the wage system for employees in companies paid using local wage standar.

There needs to be fair of ship owners to fishermen labor on the details of the deduction of the costs of carrying out the production which are joint dependents, so that the proportion of the portion received by the fishermen labor becomes more clear.

There needs to be a standard implementation technical regulation with a strong legal basis regarding the profit-sharing system and the wage system by taking into account the aspects and conditions so that all parties involved know the rights and obligations so that a fair production sharing for the interests of all parties will be created.

## **Acknowledgment**

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## References

- [1] Sriyanto A 1978 Research on the Influence of Shortening and Trammel Net Webbing Material on the Catch in Pemalang Sea Waters, Central Java
- [2] Basuki M 1983 People's Fishing with Trammel Net Fishing Development Center, Semarang
- [3] Fauzi A and Anna S 2005 Modeling Fisheries and Marine Resources (Jakarta: PT.Gramedia Pustaka Utama)
- [4] Sarjana E, Reswati and Budihardjo 1991 Some Notes on the Socio-economic Development of the Cilacap Fisheries District
- [5] Fauzi A 2004 Economics of Natural Resources and the Environment (Jakarta: PT. Gramedia Pustaka Utama)
- [6] Handoyo H N 1991 Community fisheries development in Central Java Marine Fisheries Research Institute, Jakarta
- [7] Sudibyo S, Andani S, Triareso I, Kusuma J, Pakpahan E, Santoso N B 1996 Comparative Study of the Effect of the Profit Sharing System and the Wage System on the Per Capita Income of Fishermen in the Nusantara Fishery Port in Pekalongan, (Central Java Semarang: Diponegoro University)
- [8] Susilowati T 1987 The process of working relations between Pandega and employers in fisheries business *Journal of Marine Fisheries* **42** 16-29
- [9] Suparmoko M 1987 Practical Research Methods, for Social and Economic Sciences, Third Edition Agency of Research the Faculty of Economic, (Yogyakarta: Gadjah Mada University)
- [10] Kamaluddin A 1988 Development of Community Fisheries in Central Java. Jakarta: Agency of Marine Fisheries Research
- [11] Rasadani M 1990 Profit Sharing System on Purse Seine Fishing Effort in Madia City of Pekalongan Regency Central Java Province, (Yogyakarta: Gadjah Mada University)
- [12] Sadhori H 1985 Fishing Techniques, (Bandung: Angasa Publisher)
- [13] Partadiredja A 1985 Introduction to Economy I. Edition of the Faculty of Economics, (Yogyakarta: UGM Publishing Board)