

## FINANCIAL ANALYSIS OF TILAPIA (*O. niloticus*) FRY BUSINESS ACTIVITY AT THE KLEMUNAN FISH FRY CENTER, BLITAR DISTRICT

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### Abstract

*Tilapia (O. niloticus) fish hatchery activity is a fishery business unit developed at the Klemunan Fish Fry Center (BBI), Blitar Regency. The purpose of this study was to determine the financial value and profit of the tilapia (O. niloticus) hatchery at the Klemunan Fish Fry Center (BBI), Blitar Regency. The research method used in this research is a survey research method with research data collection in 3 ways : active participation interviews, and observations. The financial analysis indicators analyzed are business profitability variables, R/C Ratio, Rentabilitas, Break Event Point (BEP) units and BEP sales. Based on the results of the financial analysis, the business profit value is Rp. 11.170.000,-, R/C Ratio at 8.81, BEP Unit at 58.6, BEP Sales Rp. 2,349,290, -, and business profitability of 49.9%, where the value of these indicators is very feasible because the numbers meet the criteria for a profitable business. So, from this research it can be concluded that based on business financial analysis which includes profitability analysis, R/C Ratio, BEP Unit, BEP Sales, and rentabilitas business, tilapia (O. niloticus) hatchery business activities at BBI Klemunan are very profitable and prospective to be developed.*

**Keywords:** Tilapia, *O. niloticus*, BBI Klemunan, Finance, Hatchery

### INTRODUCTION

Globally, freshwater aquaculture business activities are divided into 2 main activities, namely hatchery and fish rearing (Sumantadinata, 1983). Hatchery is an activity that produces seeds of a certain size. This activity usually consists of the maintenance and spawning of broodfish to produce fish seeds (Rukmana, 1997). Hatchery activities are carried out because the number of seeds produced by nature is limited and the quality is not guaranteed and the size is not uniform, while the need for seeds is currently increasing. Freshwater fish hatchery businesses include tilapia, gouramy, pomfret, catfish and catfish species (Indaryanto, 2011).

One of the commodities most favored by fish breeders is the tilapia hatchery business unit. Tilapia is one of the potential freshwater fish as a source of animal protein whose prices can be reached by various levels of society (Marie et al, 2018). The development of tilapia aquaculture in

Indonesia is relatively fast, this is due to the nature of tilapia which has a high tolerance for changes in the aquatic environment compared to other fish species (Djunaedi et al, 2016). Tilapia hatchery activities are mostly carried out by fish farmer groups or government agency units (Fish Fry Center) (Salsabila and Suprpto, 2018).

Blitar Regency is well-known as one of the fisheries centers in the East Java region (Ariadi et al, 2020). Tilapia (*O. niloticus*) seeds are one of the most common production commodities in the Blitar Regency (Ariadi and Abidin, 2019). Hatchery centers that consistently produce superior tilapia seeds are at the Klemunan Fish Fry Center (BBI), Wlingi Sub-District (Ariadi et al, 2020). It is known that tilapia (*O. niloticus*) seeds from BBI Klemunan have been marketed in several areas outside Blitar Regency, such as Tulungagung, Malang, and Pasuruan (Ariadi and Abidin, 2019). So that from this potential, the tilapia hatchery business

is considered to have promising prospects to be developed.

The purpose of this study was to determine the financial value and business profits of the tilapia (*O. niloticus*) hatchery at the Klemunan Fish Fry Center (BBI), Blitar Regency.

## MATERIAL AND METHODS

This research was conducted at the Klemunan Fish Fry Center (BBI), Blitar Regency, East Java in February-March 2013. The research method used was a survey research method. While the data collection techniques carried out during the study were divided into 3 ways, namely active participation, interviews, and observation. Then the data were analyzed descriptively quantitative and descriptive qualitative. The determination of research methods and data collection techniques is based on the needs and research strategies so that they are effective (Kurnianingtyas and Nugroho, 2012). For research data processing, Microsoft Excel 2013 software was used.

The calculation of business financial analysis is seen from several analysis variables such as profit analysis, R/C Ratio, rentabilitas, *Break Event Point* (BEP) unit and BEP sales.

### 1. Profitability

The value of business profits is the result of receiving production costs (TR) reduced by production process costs (TC) either simultaneously or partially in a business unit.

$$\Pi = TR - TC$$

### 2. R/C Ratio

R/C Ratio is the conversion value of total revenue costs (TR) divided by the value of production process costs (TC) in one business operational cycle (Primyastanto, 2016).

$$R/C = TR/TC$$

### 3. Rentabilitas

Profitability is the percentage value of production profit (L) divided by the cost of

capital (M) used during one production cycle (Primyastanto, 2016).

$$\text{Rentabilitas} = LM \times 100 \%$$

### 4. BEP Unit

BEP is the value or break-even point of production, the BEP unit is obtained from the investment cost (FC) divided by the difference in operating costs (p-V) (Primyastanto, 2016).

$$\text{BEP} = \frac{FC}{p-v}$$

### 5. BEP Sales

BEP sales is the break-even point based on the cost of revenue from the sales proceeds. The value of BEP sales is obtained by dividing investment costs (FC) by the ratio of operating costs (Primyastanto, 2016).

$$\text{BEP} = \frac{FC}{1 - \frac{VC}{S}}$$

## RESULTS AND DISCUSSION

### Production cost

Production costs for tilapia (*O. niloticus*) hatchery business at the Klemunan Fish Fry Center (BBI) are divided into 3 variables, namely investment costs, fixed costs and variable costs (Table 1.). Production costs are the total costs incurred for the operation of hatchery activities or aquaculture enlargement (Ariadi et al, 2019). In general, production costs are classified into 2, namely fixed costs and variable costs. Fixed biaya are costs that are investment in nature and intended for the long term, such as building construction costs and pool construction costs (Sembiring and Utomo, 2015). Meanwhile, variable costs are flowing costs that are used for operational capital for cultivation in each cycle (Ariadi et al, 2019).

**Tabel 1. Investment Cost and Variable Cost of Tilapia Hatchery Business In Fish Fry Centre Klemunan**

Investment Cost				
Investment	Count	Technique Age (year)	Price (Rp.)	Depreciation (Rp.)
House	2	5	10.000.000	1.000.000
Diesel pump	2	5	14.000.000	1.400.000
Pond	10	25	20.000.000	2.000.000
Harvest net	10	1	200.000	200.000
Fish net	3	2	300.000	150.000
Basket	10	5	250.000	50.000
Fish scale	1	10	250.000	25.000
Scoop	7	5	875.000	175.000
TOTAL			45.875.000	5.000.000
Fiz Cost				
Cost	Mount	Price (Rp.)	Total (Rp.)	
F1 fish	5	500.000	2.500.000	
Maintenance	1	17.500.000	17.500.000	
Tax amnesty	1	1.500.000	1.500.000	
Depreciation operational	1	5.000.000	5.000.000	
TOTAL			26.500.000	
Variable Cost				
Cost	Mount	Price (Rp.)	Total (Rp.)	
Urea fertilizer	10 zak	105.000	1.050.000	
CaCO <sub>3</sub> Fert	2 zak	15.000	30.000	
Feed	20 zak	56.000	1.120.000	
Solar	20 Ltr	6.500	130.000	
TOTAL			2.330.000	

**Acceptance Cost and Profits**

The stocking density level of tilapia seeds for traditional freshwater fish farming is between 30-35 fry/m<sup>2</sup>, this density of nener fluctuates depending on the fertility conditions of the pond, water conditions and water management (Sudrajat et.al, 2011). The Tilapia (*O. niloticus*) hatchery at BBI Klemunan is capable of producing 100,000 tilapia seeds / cycle. The harvest or nener products are sold to fish farmers and seed retailers at a price of Rp. 40,000.00 / package, in which one package contains 100 tilapia seeds. From the description, the total revenue (*Total Revenue*) of the Tilapia (*O. niloticus*) hatchery business is Rp. 40,000,000 per cycle.

For the value of the benefits can be obtained from reducing the cost of capital (*fixed costs and investment*) with the total value of revenue. For the cost of capital (*Fixed Cost*) the value is Rp. 28,830,000, - then the total revenue

per cycle obtained Rp. 40,000,000, -. So that the profit value per cycle of the tilapia (*O. niloticus*) hatchery business unit at the Klemunan Fish Seed Center (BBI) obtained a profit value of Rp. 11,170,000,-. The profit value is quite high when viewed in nominal terms. The value of profit in this study is calculated to be greater than the results of similar studies by Irwandi et al, (2015), amounting to Rp. 9,652,000,-. The business profit value will present the feasibility level of the business to run (Wowor et al, 2017).

**Business Financial Analysis**

The results of the calculation of business financial analysis on tilapia (*O. niloticus*) hatchery activities at BBI Klemunan can be seen in Table 2. Based on the results of the analysis of several financial variables, the tilapia (*O. niloticus*) hatchery business at BBI Klemunan is quite feasible and profitable. financially and quite perspective to be developed. This can be

seen from the value of profit analysis, R/C Ratio, BEP Unit, BEP Sales, and business profitability

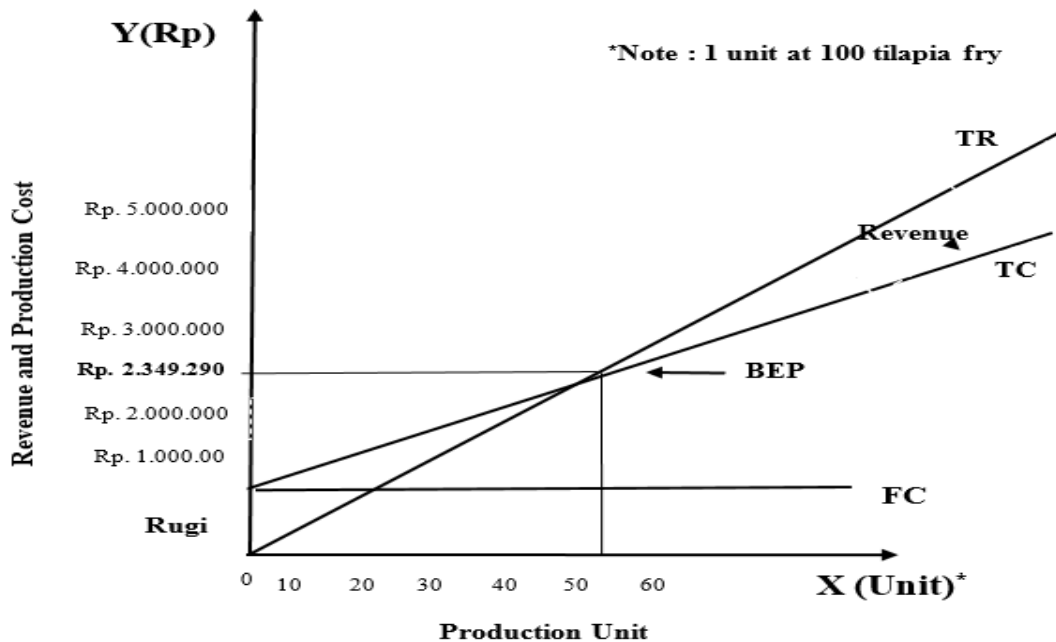
above the criteria of feasibility and profitability. Long-term study (Pelipa, 2016)

**Tabel 2. The Value Of Financial Analysis Of Tilapia Hatchery Business in Fish Fry Center Klemunan**

No.	Analysis	Value	Criteria	Status
1.	Profitability	Rp. 11.170.000,-	>Revenue	Profitability
2.	R/C Ratio	8.81	>1	Profitability
3.	BEP Unit	58.6	-	-
4.	BEP Sales	Rp. 2.349.290,-	-	-
5.	Rentabilitas	49.9%	> %DF Bank	Profitability

With a profit value per cycle of Rp. 11.170.000,- obtained the value of R/C Ratio of 8.81 or R/C Ratio > 1, which means that the business is very profitable if it will be run. R/C Ratio is the ratio of the estimated calculated value of revenue and sales from the production of a business unit (Bosu et al, 2016). Based on other financial analysis variables, the rentabilitas value is 49.9%, which means it is very profitable because the rentabilitas value is higher than the interest on the bank. The rentabilitas value is the representative value of net profit with an investment in one business unit (Sambuaga et al, 2017).

Meanwhile, for the BEP unit, the value was 58.6, which means that the business would break even (break even) if it could produce 58.6 tilapia (*O. niloticus*) seeds. Meanwhile, for BEP sales, the results were Rp. 2,349,290.-, which means that the tilapia (*O. niloticus*) hatchery will get a break-even point (no profit and no loss) if it is able to get income from the sale of seeds of Rp. 2,349,290. The BEP value is an analytical technique to determine the production volume of a business that does not experience losses and profits (break even) (Suhardi, 2016). The graph of the BEP unit and BEP sales values can be seen in Figure 1.



**Figure 1. BEP Value of Tilapia Hatchery Business in Fish Fry Center Klemunan**

Overall, based on the financial analysis, the tilapia (*O. niloticus*) hatchery business is quite profitable. The level of profit in cultivation management or hatchery can be assessed in terms of financial analysis and operational technical analysis. Both of these analyzes can determine projected profits or business opportunities if they will be carried out continuously (Ariadi et al, 2019). Some of the technical indicators used to assess the feasibility of a business include technical distribution of fry, aspects of water quality, feed management, fish growth, and final harvest productivity (Salsabila and Suprpto, 2018). Thus, in aquaculture, to assess the feasibility and future business prospects can be seen from multi-dimensional variables (economy, ecology, cultivation, and epidemiology).

## CONCLUSIONS

Based on business financial analysis which includes profitability analysis, R/C Ratio, BEP Unit, BEP Sales, and rentabilitas, the tilapia (*O. niloticus*) hatchery business at BBI Klemunan is considered very profitable and prospective to be developed.

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