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FARMER'S MOTIVATION TO MANTAIN TILAPIA FARMING IN BENGKULU SELATAN REGENCY

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ABSTRACT

Aquaculture is one of the most profitable businesses for the community economically. South Bengkulu Regency has great potential to meet the demand for Tilapia in the market. However, in 2018 there was a reduction in water discharge and damage to irrigation channels that began to rot or age. Based on the existing problems, the motivation of farmers who cultivate tilapia business is reduced. The purpose of the study: 1. to analyze the motivation of farmers to maintain tilapia farming, 2. What factors influence the motivation of farmers to maintain tilapia farming in South Bengkulu Regency. This study uses two types of data analysis: the first Likert analysis and SEM analysis. The results of this study indicate that: 1. The motivation of Tilapia fish farmers can be said to be very high motivation in maintaining their farming. 2. There are two influencing factors, namely factors that directly affect the availability of production facilities (X1), Government support (X2), Environmental Inputs (X3), Family Head Resource Inputs (X4), Management (X5).) and Output (X6), while the factors that do not directly affect the Availability of Production Means (X1) affect Government Support (X2) in shaping Farmer's Motivation (Y). The Input of Family Head Resources (X4) affects Output (X6) in shaping Farmer's Motivation(Y).

INTRODUCTION

Aquaculture is one of the most profitable businesses for the community economically. South Bengkulu Regency has great potential to meet the demand for Tilapia. In 2018 there was a reduction in water discharge, which disrupted tilapia farming. This reduction in water discharge occurred due to the criticality of forest area land in Air Nipis District, a protected forest area.

Another problem is the damage to irrigation canals that are starting to rot or age so that they are no longer suitable for use. Based on the problem of reducing water discharge in forest areas due to critical forests and the use of forest areas into rice fields as well as damage to irrigation channels, the motivation of farmers who cultivate tilapia business is reduced, affecting the number of tilapia farmers in Air Nipis District and Seginim District, South Bengkulu Regency.

According to Handoko (1995) & Ahammad (2017), motivation is an activity that results in, distributes, and maintains humans who play a very important role in improving the performance of farmers. The purpose of this study is to analyze the motivation offarmers to maintain tilapia farming and what factors influence the motivation of farmers to maintain tilapia farming in the South Bengkulu Regency.

RESEARCH METHODS

Determination of Research Location and Time

The location determination in this study was carried out purposively, namely in South Bengkulu Regency considering that Air Nipis and Seginim Subdistricts were locations where the community initially carried out a lot of tilapia cultivation, but after a reduction in upstream water discharge, namely in Air Nipis District. With and repair of irrigation channels in 2018-2019, many people have to choose to continue or not to continue farming Tilapia. This research has been carried out from April to May 2021.

Method of Determining Respondents

Determination of respondents was conducted in this study using the census method. According to Sugiyono (2013), the Census Method is the determination of samples if all members of the population are used as research samples, where through an initial survey conducted by researchers in July 2020, the population of Tilapia fish farmers in Air Nipis and Seginim Districts who are still cultivating tilapia farming amounts to 75 respondents.

Data Collection Method The

Types of data taken in this study are primary data and secondary data. Primary data is data obtained directly from respondents through direct interview methods

using a list of questions (questionnaires) that have been prepared in advance by the researcher as a guide in obtaining the required data. At the same time, secondary data is data obtained through scientific journals, agencies, and other literature studies related to the writing of scientific research that will be carried out.

Data Analysis Method

1. Farmer Motivation Analysis

The motivation of farmers to maintain the tilapia business is categorized as a value (Y) measured using eight indicators, namely to obtain a value (Y) as follows: (a) Meet their own needs; (b) Pleasant feeling; (c) Make friends; (d) Based on their own volition; (e) Easier work; (f) Fixed selling price; (g) Cheaper capital; and (h) A harmless business.

Eight indicators of motivation are measured using a Likert scale ranging from 1 to 5 with the following criteria: (a) Strongly disagree (STS) = 1; (b) Disagree (TS) = 2; (c) Disagree (KS) = 3; (d) Agree (S) = 4; and (e) Strongly agree (SS) = 5

Then the total score results are categorized into three with the interval formula, namely: The motivation of farmers to maintain the tilapia business is analyzed descriptively by calculating the average score of answers and categorizing the motivation of farmers into two categories, namely farmers with high motivation and farmers with low motivation. The score limit for each category is obtained by calculating the class interval between categories. Based on the results of the calculation of class intervals above, the results are shown in Table 1 below:

Table 1 Limitations and Categories of Farmers' Motivation to Maintain Tilapia Fish Business

No	Boundaries	Category
1	8 – 14	Very Low Motivation
2	15 – 21	Low Motivation
3	22 – 28	Moderate Motivation
4	29 – 35	High Motivation
5	36 – 40	Very High Motivation

2. Analysis of Factors Affecting Motivation

The analysis used to determine the factors that influence the motivation of farmers to maintain the tilapia business first using Likert analysis as above aims to determine the value (Y) or level of motivation of farmers then to determine the factors that influence it, SEM analysis is used.

According to Wiyono (2011), there are two types of approaches to conducting SEM analysis, namely SEM based on variance or called SEM Partial Least

Square (SEM- PLS), SEMPLS analysis states the minimum number of samples to conduct SEM analysis with the SmartPLs 3.0 M3 program is 75 people.

1. Model Development Model

   Development is carried out to find a causal relationship between independent and dependent variables (Ningsih, 2019).

2. Development of Path Diagrams The

   The development of path diagrams in this study was carried out to describe a relationship between variables to describe the flow of a relationship between latent variables or manifest variables (Ningsih, 2017).

3. Exogenous Variable Measurement Model and Endogenous

   The measurement model can also be defined as how each indicator's influence can be related to its latent variables (Octaviani, 2016).

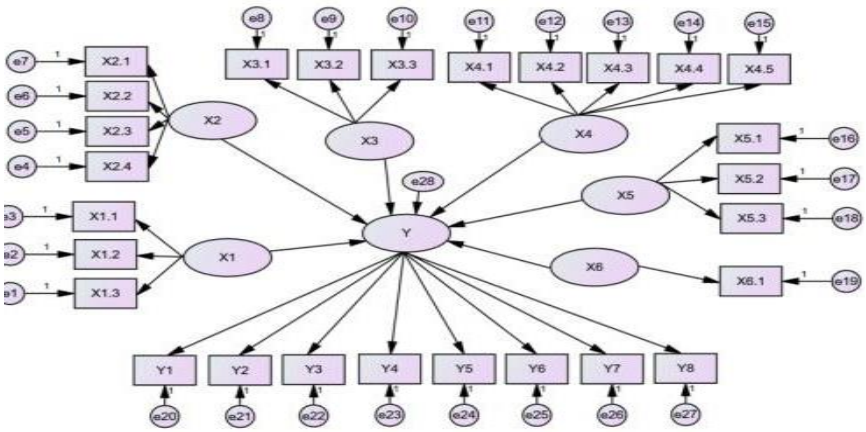

Figure 1
Initial Model of Tilapia Farmer's Motivation in South Bengkulu Regency

4. Evaluation of Model Suitability The

   Stages of evaluating the suitability of the model in this study were carried out using the procedure Algorithm, with several tests, namely as follows: (a) Convergent Validity Test; (b) Discriminant Validity Test; and (c) Reliability.

The parameters and criteria used in Table 2 can be seen from the three model fit tests

1. Convergent Validity Test (Convergent Validity), indicators for each construct high correlated when generated rule of thumb from the loading factor on top of or greater than (>) 0.7. (Purwantini, 2018).

2. Discriminant Validity Test(Discriminant Validity) is used to assess how different a construct one with the other constructs, which the value AVE will measure should be higher or greater (>) than 0.5 (Purwantini, 2018).
3. Reliability Test, Rule of thumb Composite Reliability must be greater (>) than 0.7 if the value of Composite Reliability 0.6 is still acceptable (Purwantini, 2018). The value can describe the ability of the independent variable to the dependen Variable in the model. The higher the value obtained, the better the research model used.

Table 2 Criteria Testing Compatibility of Model

No.	Test	Parameter	Value
1	Validity Convergent	Factor Loading	≥ 0.70
		AVE (Average Variance Extracted)	≥ 0.5
2	Validity Discriminant	Root AVE and Roots of ST ≥ correlation Correlation Variables Latent	
3	Reliability of Variable Laten	Composite Reliability	≥ 0.70

Source: Purwantini, (2018)

The evaluation of the model is measured using Q square predictive relevance () with the following equation:

Q2 = 1 – (1 – R12) (1 – R22) ... (1– Rp2)

Hypothesis testing is carried out to determine the extent of the relationship or influence of the latent construct procedure performed by procedure bootstrapping two-tailed or testing the relationship between variables. Hypothesis testing is taken by looking at the results of the test t-statistical or what is often referred to as t-count.

RESULTS AND DISCUSSION

Characteristics of TilapiaTilapia

Farmer's Characteristics can be seen from several aspects for more clarity, as shown in Table 3. Classification of farmer characteristics categories is divided into 3 categories using the highest value being reduced by the lowest value divided by 3 so that the interval or distance for each class of characteristics used, the determination of the category is divided into 3 which aims to determine the characteristics of farmers in South Bengkulu Regency which are included in the small, medium or high category.

Table 3 Characteristics of Tilapia Farmers in South Bengkulu Regency

No	Characteristics	Category	Number	Percentage (%)	Average
1	Age (Year)	42-53	15	20,00	59
		54-65	41	54,67	
		66-77	19	25,33	
2	Formal Education Level	Elementary – Yunior high School	11	14,67	12
		Senior High School	27	36,00	
		Undegraduate	37	49,33	
3	Farming Experience (Year)	1-20	30	40	28
		21-40	21	28	
		41-60	24	32	
4	Number of Family dependent (Person)	1-2	0	0	4
		3-4	34	45,33	
		5-6	41	54,67	
5	Land(m^2)	0-500	14	18,66	881
		501-1000	26	34,67	
		1000-1500	35	47,67	

Source: Primary Data Processed, 2021

Age

Characteristics of tilapia farmers in South Bengkulu Regency were categorized into 3 categories with an average age of 57.33 years for tilapia farmers in Seginim District and an average age of farmers in Air Nipis District is 62 years old and an average of 62 years. The average age category of Tilapia farmers in Bengkulu Selatan Regency is in the age category of 54-65 years or the medium category or still in the category of productive age to carry out tilapia farming activities with a percentage of 50% (Tabulation Appendix 1). Based on the data in Table 3, it can be shown that Tilapia farmers in Bengkulu Selatan Regency are in productive age and are expected to increase the production of Tilapia to achieve a high level of income. According to the Central Statistics Agency, the age group of 16-55 is included in the productive age group.

Level of Formal

The average education level of farmers in Bengkulu Selatan Regency is SMA/equivalent, namely 12 years of education for tilapia farmers in Seginim Subdistrict and 13 years for Air Nipis Subdistrict (Appendix Tabulation 1), or it can be said that the level of education Tilapia farmers is in the medium category, this

will affect their mindset and ability to carry out their farming activities. This is related to the development of farming activities to obtain a better level of farm income. This follows Prayitno's (1987) & Gardner (2005) opinion that education indirectly influences farmers in applying technology and management skills in managing their farming.

Number of Family Dependents

Dependents of farmer families in Bengkulu Selatan Regency can be categorized into 3 categories. These dependents are taken from the number of families living in the farmer's household, and it is the responsibility of the head of the family to pay for all their needs. The average number of dependents of Tilapia farming families owned by farmers in the South Bengkulu Regency is 4 people (Appendix Tabulation 1) in one Tilapia farming farmer household. According to Susanti (2012), Hidayani et al (2018), Kumaladevi & Sunaryanto (2019), the large number of dependents owned by one family will affect the needs and expenses.

Farming Experience

Based on the table of characteristics of Tilapia farmers above, the average experience of Tilapia farming in South Bengkulu Regency is 8.57 years for tilapia farmers in Seginim District and 44.40 years for Air Nipis District, which is in the low category in Seginim Subdistrict and for Air Nipis Subdistrict were included in the high category (Appendix Tabulation 1). Farming experience owned by Tilapia farmers also influences the success of farming. The length of time Tilapia farmers works to manage land or ponds is closely related to the work experience of Tilapia fish farmers.

Land

Area of land owned by farmers Tilapia in South Bengkulu land area in the range of 598 m^2 for the District and for the District Water Seginim Nipis area of 1114.33 m^2 (Annex Tabulation 1), or it can be said land Tilapia farming in South Bengkulu Regency for Seginim District is of medium land area. For Air Nipis District, it is in the category of Broad land area.

According to Wullur et al. (2013), the ideal pond area for tilapia rearing is between 100 m^2 - 500 $m^{2.}$ According to Irwandi (2013), for freshwater tilapia cultivation in ponds, the average recommended pond area for the incubator is 1000 m^2 with a size of 20 x 50 m^2. In contrast a large pond aims to facilitate fish growth due to a lack of competition among fish from the fish stocking density. Based on the two previous studies, it can be said that the land area of Tilapia fish farmers in the South Bengkulu Regency can be said to be the ideal land area

Farmer

Motivation Motivation is a process of influencing or encouraging a person or workGroup to carry out an activity that has been determined, and motivation can be defined as the work managers do in conveying and providing inspiration. Samsudin, 2010), Bernardin & Russell (2006). For more details on the motivation of tilapia farmers, see Figure 2 below:

Motivation

The results of the motivation analysis obtained from Table 1 above show that the motivation of farmers in doing tilapia farming in South Bengkulu Regency, precisely in Air Nipis District and Seginim District, shows an average value of 36 or is in a very high motivation range. Based on Figure 2, Very low motivation, low motivation, and moderate motivation have a percentage of 0%, meaning that there are no farmers who have low motivation in doing tilapia farming activities in South Bengkulu Regency.

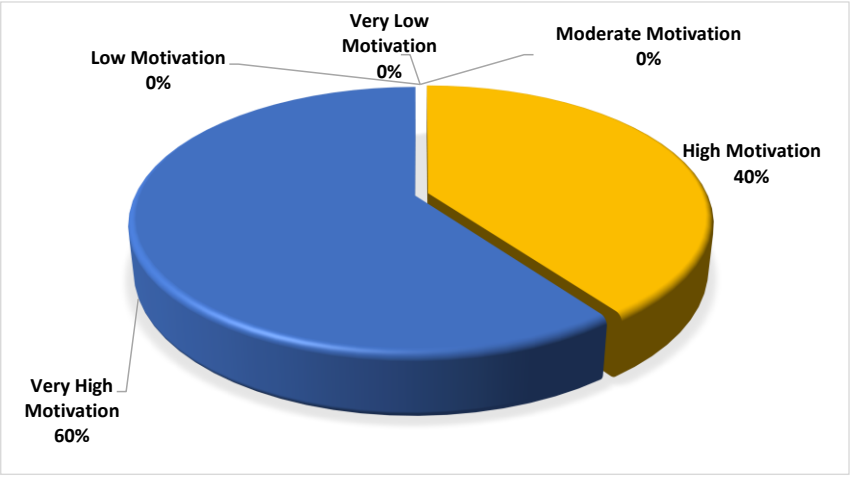

Figure 2
the motivation of tilapia farmers

High motivation to get a percentage of 40% with the distribution of farmers in Seginim District happens because farmers who maintain tilapia farming in Seginim District need better support and more attention due to improvements to irrigation channels and land conversion in Air Nipis District disrupted the flow of water, which is the main factor in tilapia farming, but it still made the farmers who initially numbered 102 farmers who maintained the tilapia business became 30 farmers, but it still made the farmers who still maintained their farms have high motivation. Very high motivation to get a score of 60% spread in Air Nipis District means that farmers in South Bengkulu Regency have high motivation to maintain and run tilapia farming

Factors Affecting Farmers' Motivation

Factors influencing Tilapia Farmer's Motivation in South Bengkulu Regency were carried out using several tests, namely conducting convergent validity tests, discriminant validity tests, and reliability tests.

Validity and Reliability Test

The validity and Reliability Test is used to see whether the model used is feasible or not as a research indicator. The results of the value of this test are obtained or obtained from latent variables with indicators between variables. To see the validity of the test results that have been measured can be seen from the value of the loading factor.

Seventeen indicators must be removed from 28 indicators in the initial model. These 13 indicators are discarded or abolished because they have a Rule of thumb value of a loading factor greater than (<) 0.7, so they do not meet the requirements or are not valid to be used as test tools to see indicators that can be used or have a Rule of thumb value of a loading factor greater than (>) 0.7 can be seen in the image below. The Path diagram of Farmers' Motivation to Maintain Tilapia Figure 3 is below:

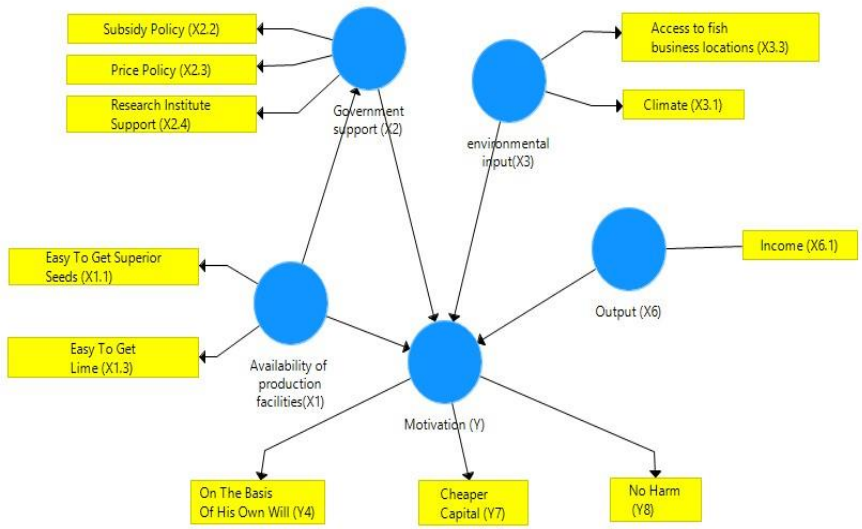

Figure 3
Path Diagram of Farmers' Motivation to Maintain Tilapia Farming.

Based on the results of the modifications that have been made, 11 indicators are correlated and produce a Rule of thumb of a loading factor greater than (>) 0.7, which means that the results of the loading factor mean that all indicators that have been modified and used in this study have met the criteria. It is to be used as an

analytical tool of convergent validity and has high validity. Value Validity Discriminant is the value seen from the Average Variance.

Extracted (AVE) is useful for assessing how different a constructed one with the other constructs. This discriminant is seen by comparing the root value of AVE and the correlation of the latent variables so that from this value, it is known whether a construct has an adequate discriminant or not.

Reliability testing is useful for ensuring that there are no problems with measurement, so the last step in evaluating the model's fit is to test the reliability of the final model. Testing the consistency of measurement (reliability) with Composite Reliability (CR): In measuring the latent construct, high consistency indicators certainly show reliability high. Reliability can be known through the value of the Composite Reliability (CR). CR is said to be good if it has a value of 0.7, although 0.6 is still acceptable. The estimation results can be seen in Table 15 as follows.

Table 4. Validity and Reliability Test

Information	AVE≥0,5	Composite Reability ≥ 0,7
Government Support (X2)	0,587	0,810
Environmental Input (X3)	0,664	0,798
Availability Of Production Facilities (X1)	0,710	0,830
Farmers Motivation (Y)	0,691	0,870
Output (X6)	1,000	1,000

Source: Primary Data Processed (2021).

The estimation results of the discriminant validity test are based on the Average Variance Extracted (AVE) value that all latent variables have a value greater than 0.5, which means that the input variable has an adequate and valid discriminant. The results of the reliability test of the measurement model that has been carried out, Rule of thumb Composite Reliability is greater than 0.7 if the value of Composite Reliability 0.6 is still acceptable, so it means that all inputs or variables observed are valid in measuring the latent variables. This shows that the indicators are reliable in compiling each variable, and the reliability of the measurement model has been declared good or with good reliability criteria.

Table 5 Discriminant Validity Test Based on AVE Root Value and Latent Variable Correlation

Description	√AVE	Latent Variable Correlation
Government Support (X2) → Motivation (Y)	0,7661	0,439
Environmental Input (X3) → Motivation (Y)	0,8148	0,334
Availability Production Maens (X1) → Government Support (X2)	0,8426	0,543
Availability of Production Maens (X1) → Motivation (Y)	0,8312	0.168
Output (X6) → Motivation (Y)	1,000	0,160

Source: Primary Data Processed (2021).

The discriminant validity test is seen by comparing the AVE root value and the correlation of latent variables in Table 4. where if the AVE root value is > from the correlation of the latent variables, it means that the model used does not have much difference from one variable's input to another variable's input.

The goodness of fit in this study is done by analyzing the value of Q^2. This value is declared valid with R-Square or coefficient of determination. The calculation of the value can be seen in the following equation Q^2:

$$Q^2 = 1 - (1 - R1) \times (1 - R2)$$
$$Q^2 = 1 - (1 - 0.295) \times (1 - 0.664)$$
$$Q^2 = 1 - (0.705) \times (0.336)$$
$$Q^2 = 1 - (0.2368)$$
$$Q^2 = 0.7632$$

Based on the known value of Qcalculation^2 amounted to 786.32%, there are large enough diversity in this research study or may otherwise have had the goodness of fit is good.

Hypothesis testing can be done by looking at the results of the estimated values t-statistics or t-count. Hypothesis testing is used to see the effect between variables. In this study, the value of the t-table is 1.99495. Based on the existing criteria, if the t-count value is large > the value t-table, the test is significant. Otherwise, if the t-count is small < t-table, the test is not significant. To see the estimation results, t-calculated are presented in Table 6 below.

Table 6 Estimation Results T-count

Description	t-Count	Information
Government Support (X2) → Motivation (Y)	5,128***	Significant
Environmental Input (X3) → Motivation (Y)	3,611***	Significant
Availability Production Maens (X1) → Government Support (X2	6,923***	Significant
Availability of Production Maens (X1) → Motivation (Y)	1,989**	Significant
Output (X6) → Motivation (Y)	2,120***	Significant

Source: Primary Data Processed (2021).

Remarks : *** Significance at 95% Confidence level (1.99495); **Significance at the 90% Confidence level (1.66724)

The Effect of Government Support on Tilapia Farmer's Motivation

Government support is obtained from the estimation results in the table obtained by the value of t-count > t-table, which means that the results of the tests carried out are significant. The t-count value obtained is 4.209, which means that the government support variable is the most influential aspect of the motivation of Tilapia farmers in the South Bengkulu Regency.

Based on the situation in the field, namely in Seginim and Air Nipis sub-districts, this government support includes a credit policy for tilapia farmers, a subsidy policy, namely subsidies for tilapia feed prices, a tilapia selling price policy in which the selling price of Tilapia tends to remain constant at 21,000/year. Kg, and support from research institutions, namely support from extension workers and the agriculture office in each sub-district regarding the state of the pond, providing good feed for Tilapia.

Effect of Environmental Input on Tilapia Farmer's Motivation

Environmental input obtained from the estimation results in the table obtained t-count > t-table, which means that the test results have been significant. Judging from the t-count value obtained, it equals 2,955, which means that the Environmental Input variable affects the motivation of tilapia farmers in the South Bengkulu Regency.

Based on the conditions in the field, the use of environmental inputs is divided into three, namely climate, water availability and access to business locations, which greatly affect the motivation of Tilapia both systematically in the field and theoretically, this is because the availability of water is the main and most important source in fish farming activities. tilapia because if the Tilapia fish farming land has a continuous flow of water available every day

in abundance, then the land is suitable for a Tilapia fish If the Tilapia fish farming land does not have a continuous flow of water available every day and throughout the season, it won't be easy to cultivate Tilapia because Tilapia requires abundant water as a medium to live and grow.

Access to business locations is no less important factor in doing Tilapia farming. Access to good or adequate business locations will facilitate the purchase of seeds, management and sales of Tilapia. Based on research by Rindang et al. (2017), environmental variables have an effect of 79% on the motivation of farmers to maintain agricultural land in the suburbs of Malang City.

Effect of Availability of Production Facilities on Government Support

The effect of the availability of production facilities on government support is the most influential factor. This can be seen from the t-value count of 6.567 or a significant effect on the 95% confidence level. The availability of production facilities includes superior seeds and lime for tilapia farming in the South Bengkulu Regency.

The ease of farmers in obtaining the availability of these production facilities can be influenced by the existence of government support in the field of subsidy policies, price policies for both seed prices, lime prices, feed prices and tilapia selling prices which will affect and support good and adequate research institutions will help tilapia farmers always to increase the motivation of farmers.

Effect of Availability of Production Facilities on Tilapia Farmer's Motivation

Availability of production facilities obtained from the estimation results in the table shows the value of t-count > t-table, which means that the results of the tests carried out are significant. Judging from the t-count value obtained, it is 2.375, which means that the variable availability of production facilities affects the motivation of Tilapia farmers in the South Bengkulu Regency.

The Effect of Output on Tilapia Farmer's Motivation The output

Obtained from the estimation results in the table shows the t-count > t-table, which means that the results of the tests carried out are significant. The t- count value obtained is 1.679, which means that the Output variable affects the motivation of Tilapia farmers in the South Bengkulu Regency at the 90% confidence level.

This is following the situation in the field where Nila fish farmers earn income not only at harvest time but if there are fish that die before the harvest time Nila fish farmers can sell it to the nearest market where there

is a market every day. There are two types of markets, namely morning market and market afternoon, in Seginim District and Air District, so that farmers will not suffer significant losses due to the death of fish before harvest time. Based on research Moumouni & Streiffeler (2010), Fahma et al (2015), Rahayu (2018). Stated that income is the most influential factor in the motivation of farmers in managing people's forests in Sukoharjo Village 1 Sukoharjo District Pringsewu Regency.

CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

From the results of the research and the results of data analysis or estimation results, the following conclusions can be drawn:

1. Motivation of Tilapia farmers in the South Bengkulu Regency can be very high, which means that the motivation of farmers in the South Bengkulu Regency to maintain their farming is very high.
2. There are two influencing factors, namely the factors that directly affect the Availability of Production Facilities (X_1), Government Support (X_2), Environmental Inputs (X_3), and Output (X_6). In contrast, the factors that do not directly affect our Availability Means of Production (X_1) affect Government Support (X_2) in shaping the Motivation of Farmers (Y).

Recommendations

1. A policy of subsidizing prices for tilapia farming production factors is needed, such as a feed subsidy policy to help reduce feed production costs incurred by farmers so that it can help increase the income of tilapia farmers
2. There needs to be a policy of considering the selling price of Tilapia where the selling price of Tilapia is constant every year, which is in the range of Rp. 21,000 while the price of tilapia feed increases every year, so government support is needed for selling price policies and subsidies to increase the motivation of farmers to do tilapia farming.

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