

Factors Affecting the Income of Oil Palm Farmers in Lambandia Village, Basalah Sub-district, South Konawe District

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Abstract

This study aims to determine income and the factors that influence the income of oil palm farmers in Lambandia Village, Bassalah District, South Konawe Regency. The population in this study were all oil palm farmers in Lambandia Village, Basala District, South Konawe Regency, totaling 22 people, using the census technique, 22 respondents were obtained as the research sample. Data analysis used income analysis and multiple linear regression analysis where the data has been transformed into logarithmic form. The results showed that the income of oil palm farmers in Lambandia Village, Basala District, South Konawe Regency averaged IDR 42,985,442/year. Production costs (X3) have a negative effect on the income of oil palm farmers, while land area (X1) and price (X4) have a positive and significant influence on the income of oil palm farmers in Lambandia Village, Basala District, South Konawe Regency.

Keywords: Income, Palm Oil, Influencing Factors.

INTRODUCTION

Indonesia is an agrarian country where most of the population earns a living in the agricultural sector, so the agricultural sector plays an important role in the national economy. One of the agricultural subsectors is plantations. Plantation cultivation by the people is characterized by various weaknesses, among others cultivated on relatively narrow land with traditional methods, low productivity and quality, and a weak position in marketing the results. In contrast, large plantations are cultivated in a modern manner with advanced technology (Mardikanto, 2007).



Oil palm is the main plantation commodity in Indonesia. According to Budiasa (2012), oil palm has a strategic role in the Indonesian economy. The prospect of the oil palm plantation business is bright with competitive product prices. The palm oil processing industry is diverse. Many companies have been built in various scales. Many farmers are interested in building plantations to downstream industries (Ardi *et al.*, 2017). In line with the progress of the upstream industry, Indonesia's downstream palm oil industry continues to increase and is no longer limited to producing palm oil. The development of the downstream palm oil industry in Indonesia can be seen from palm oil export products in Indonesia. There is an increasing trend for *Crude Palm Oil* (CPO) derivative products (Irawan and Soesilo, 2021). The bright prospects for palm oil investment in the world vegetable oil trade have encouraged the government to spur the development of oil palm plantation areas.

South Konawe Regency is a potential area for developing oil palm plantations, because of its geographical location which is suitable for the growth and development of oil palm plants. South Konawe Regency has an oil palm plantation area of 1,055 Ha with a production of 35,000 tons and productivity of 3.318 tons per hectare in 2019. Oil Palm is a staple crop in South Konawe Regency, especially in Basalah Sub-District, Lambandia Village, because this crop is considered to provide more added value when compared to other crops. According to Afifuddin (2007), the development of the oil palm subsector is a considerable provision of employment and as a source of income for farmers. Oil palm is one of the commodities that has a big share in generating local revenue, gross domestic product, and community welfare.

Oil palm plantation activities in Lambandia Village have provided external influences that are positive or beneficial to the surrounding area. The benefits of plantation activities on socioeconomic aspects include: 1) improving the welfare of the surrounding community; 2) expanding employment and business opportunities; 3) contributing to regional development. Oil Palm is one of the promising crops with high value and less difficult maintenance (Purba and Sipayung, 2018).

For the development and increase in oil palm farming production, it is necessary to know how the description of the problems that exist in farming, the increase in inputs and farm production costs and the amount of oil palm farming income in Lambandia Village, Basalah District, South Konawe Regency. Based on the above background, the authors are interested in conducting research entitled "Factors Affecting the Income of Oil Palm Farmers in Basalah District, South Konawe Regency".





METHOD

This research was conducted in Lambandia Village, Basalah Subdistrict, South Konawe Regency from October 2022 to December 2022. The population as well as the sample in this study were all oil palm farmers in Lambandia Village, Basalah Subdistrict, South Konawe Regency, totaling 22 people who were taken by saturated sampling method. Data collection techniques were carried out by observing the research location, interviewing respondents using a questionnaire, and documentation. To analyze the data, researchers used quantitative and qualitative analysis.

1. Income Analysis, Soekartawi (1995) states that farm income is the difference between revenue (TR) and all costs (TC):

$$TR = Y \cdot P_y$$

Description:

TR = Total Revenue (Farm Revenue)

Y = Output (Production obtained)

PY = Price (Output Price)

Total cost is the overall production cost used to produce a certain output, both fixed and variable. Using the formula:

$$TC = TFC + TVC$$

Description:

TC = Total Cost

TFC = Total Fixed Cost

TVC = Variable Cost (Total Variable Cost)

Farm income is the difference between revenue (TR) and all costs (TC). This statement can be written as follows:

$$Pd = TR - TC$$

Description:

Pd = income

TR = Total Revenue

TC = Total Cost

2. Factors affecting income using multiple linear regression analysis. The multiple linear regression model in this study is:

$$Y = a + X_1^{b1} + X_2^{b2} + X_3^{b3} + X_4^{b4} + e^u$$



Based on the data obtained, there are several variables that have a non-linear relationship. Therefore, the data is transformed into logarithm form (*double-log*) to facilitate the estimation of the multiple linear form equation formula so that it can fulfill the assumptions underlying the analysis. The equation if logarithmized will become:

$$\log Y = \log a + b_1 \log X_{(1)} + b_2 \log X_{(2)} + \dots + b_n \log X_{(n)} + e$$

Description:

Y = Oil palm farmer income (Rp)

a = Constant

b_1, b_2, b_3, b_n = Linear regression coefficient of each variable

X_1 = Land Area (Ha)

X_2 = Labor (HKP)

X_3 = Production Cost (Rp)

X_4 = Price (Rp)

e = error

To determine the goodness of the model and the influence of the factors of land area (X_1), labor (X_2), production costs (X_3) and prices (X_4), in explaining variations in the income factor of oil palm farmers (Y), several tests were carried out. The tests carried out include: Coefficient of determination (R^2), F test and t test as well as tests related to classical assumption rules.

RESULTS AND DISCUSSION

To analyze the farm income carried out by farmers aims to overcome the fulfillment of the living needs of the family of oil palm farmers, so that the economic value of farming has an important role to increase the income of oil palm farmers.

Cost Analysis of Oil Palm Farming in Lambandia Village, South Konawe District

Production costs are business expenses incurred by farmers in order to procure production facilities and infrastructure. The calculated farming costs of oil palm farmers in Lambandia Village are production costs after the crop is produced which are calculated in one year, consisting of *fixed costs* and *variable costs*. For more details can be seen in the following table

Table 1 Average Amount of Fixed Cost Components and Variable Costs in Oil Palm Farming in Lambandia Village, Basalah Sub-district, South Konawe District

Cost Type	Description	Cost (Rp/Year)	Total
Fixed Cost	Scythe depreciation	52.136	312.010
	Spear depreciation	46.364	
	Cart depreciation	123.377	
	Machete depreciation	43.712	
	Loading depreciation	21.671	
	Sprayer depreciation	24.750	
Variable Cost	Seedlings	344.018	20.733.458
	Fertilizer	2.221.258	
	Herbicides	822.727	
	Labor	17.345.455	

Source: Primary data processed, 2022

Table 1 above presents the average amount of fixed and variable cost components in oil palm farming in Lambandia Village, Basalah Sub-district, South Konawe District. The following is the description;

1. Shows that the average amount of fixed costs allocated by oil palm farmers in Lambandia Village is Rp312,010/year. Based on the results of the study, most respondents used sickles, spears, carts, machetes, loading, and sprayers. The depreciation cost of tools on oil palm farms is low because the equipment is purchased at a fairly cheap price and the amount needed is low.
2. It shows that the average variable cost allocated by oil palm farmers in Lambandia Village is Rp20,733,458 per year, with the largest cost incurred for labor at Rp17,345,455 per year, because the majority of farmers use labor outside the family for pest control, fertilization, and harvesting. Oil palm farming only involves male labor with the Male Working Day (HKP) system, where workers work an average of 8 hours per day. The second largest production cost is for fertilizer, amounting to IDR 2,221,258 per year, with the commonly used types of fertilizer being urea and NPK Phonska to support oil palm growth and production, which are applied 3 times a year. However, the availability of fertilizers is often a constraint as farmers have to buy them from outside the region. The smallest production cost is for seedlings, which is IDR 344,018 per year with an average of 214 costarika seedlings planted with a spacing of 9 x 9 m using an equilateral triangle

planting pattern or straight rows, so that in one hectare there are 112 oil palms. In addition, pest and disease attacks cause a decline in production, so the use of herbicides is important. Spraying is done three times a year before fertilization to be more effective and according to the recommended dose to control weeds around the plants.

Production, Selling Price, and Income of Oil Palm Farmers

Soekartawi (2010) states that the total revenue in farming is obtained from physical production multiplied by the production price. Meanwhile, income is the result of the reduction between the total revenue obtained by farmers from the sale of oil palm and the production costs of farming sacrificed by farmers (Soekartawi, 2010). The average production, selling price, and income received by oil palm farmers in Lambandia Village can be seen in Table 2.

Table 2 Average Production, Selling Price, and Revenue, and Total Income Components of Oil Palm Farming in Lambandia Village, Basalah Sub-district, South Konawe District

Variables	Description	Total
Total Production, Selling Price, and	Production (Kg/Year)	51.000
	Selling Price (Rp/Kg)	1.282
	Revenue (Rp/Year)	65.382.000
Total Revenue Component	Revenue (Rp/Year)	65.382.000
	Production Cost (Rp/Year)	21.045.468
	Income (Rp/Year)	44.336.532

Source: Primary Data Processed, 2022

Table 2 above shows that the average amount of production, selling price, and revenue, as well as the amount of income components on oil palm farms in Lambandia Village, Basalah Sub-district, South Konawe District can be explained as follows;

1. That oil palm farming production is oil palm Fresh Fruit Bunches (FFB) and is measured in units of Kg / Year. Oil palm harvesting is carried out by farmers on average 2 times a month. The production produced by farmers is of course different. The difference in production is caused by the level of use of seeds, fertilizers, pests, and plant maintenance. The average oil palm production produced in one harvest varies up to 51,000 Kg/year with the average selling price prevailing at the time the research was conducted was Rp1,282/Kg FFB so that the revenue obtained was Rp65,382,000/year. Variations in farmer production are due to the use of technology, the availability of inputs

per hectare and differences in the level of farm management. The level of management on the farm will be closely related to the allocation of farmers' production factors on the farms they operate.

2. That from the revenue obtained of Rp65,382,000 / year minus the production costs incurred of Rp21,045,468 / year resulted in an oil palm farm income of Rp44,336,532 / year or Rp26,564,832 / ha / year. Based on this data, it can be concluded that the total revenue is greater than the total costs incurred in carrying out oil palm farming activities in Lambandia Village. The results of the average farmer's income are usually used to meet the needs of life, and support the finances of the farmer's household, as well as meet the educational needs of the farmer's household family.

Factors Affecting Oil Palm Farming Income in Lambandia Village

The analysis used to determine the factors that affect the income of oil palm farmers in Lambandia Village, Basalah Subdistrict, South Konawe Regency is known by using multiple linear regression analysis, where the dependent variable is income (Y) and the independent variable consisting of land area (X1), labor (X2), production costs (X3) and prices (X4) which are processed using *Microsoft Excel* computer tools and the *SPSS* version 16.0 program. Parameter testing was conducted at the 95% confidence level ($\alpha = 0.05$). Before entering the discussion on the results of multiple linear regression estimation, it is necessary to test the classical assumptions first to ensure that the estimator model is BLUE (*Best Linear Unbiased Estimator*) which consists of normality test, multicollinearity, heteroscedasticity, and autocorrelation,

Table 3 Multicollinearity Test Analysis Results

Variables	Collinearity Statistics	
	Tolerance	VIF
Land Area (X1)	0,191	5,246
Labor (X2)	0,195	5,141
Production Cost (X3)	0,141	7,079
Price (X4)	0,578	1,730

Source: Primary Data Processed, 2022

Table 3 shows that the results of the data output in the regression model, the variables of land area, labor, production costs and prices have VIF values < 10 and *tolerance* values > 0.10 , meaning that there is no multicollinearity. Therefore, it can be concluded that between land

area, labor, production costs and prices there is no perfect correlation, so the multicollinearity test has been fulfilled. In line with the research of Wahab and Pamungkas (2019) that the multicollinearity test results of all variables show a *tolerance* value greater than 0.1 (*tolerance* > 0.1) and the VIF value of each variable shows less than 10 ($VIF < 10$) which means that in the regression model there is no multicollinearity.

Table 4 Autocorrelation Test Analysis Results

<i>Model</i>	<i>R</i>	<i>R²</i>	<i>Adjusted R²</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson</i>
1	0,956	0,914	0,894	0,04671	1,646

Source: Primary Data Processed, 2022

Table 4 shows that the results of the autocorrelation test are known for the DW value = 1.646 which has a value greater than the dU table result $r = 0.423$ and less than $(4 - dU) = 4 - 0.423 = 3.577$ so it can be concluded that there is no autocorrelation problem in the variables used. In line with the opinion of Kurniawan (2014) that the value of $DU < DW < 4 - DU$ means that there is no autocorrelation. Meanwhile, the coefficient of determination (*R-square*) is 0.914. This means that the ability of the independent variables, namely land area (X1), labor (X2), production costs (X3) and prices (X4) is able to explain the dependent variable, namely the income (Y) of oil palm farmers in Lambandia Village, Basalah District, South Konawe Regency by 91.4% and the remaining 8.6% is explained by other variables outside of the regression equation or variables not examined.

Table 5 F-Statistic Test Analysis Results (Overall Test)

<i>Model</i>		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1	<i>Regression</i>	0,394	4	0,098	45,087	0,000
	<i>Residuals</i>	0,037	17	0,002		
	Total	0,431	21			

Source: Primary Data Processed, 2022

Table 5 shows that the calculated F value = 45.087 > value of F table = 2.96 and $\text{sig} = 0.000 < \alpha = 0.05$ which means that the independent variables of land area (X1), labor (X2), production costs (X3) and price (X4), together have a significant effect on the dependent variable income (Y). So it can be said, the independent variables are able to explain the magnitude of the

dependent variable.

Table 6 Result of t-Statistic Test Analysis (Partial Test)

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
	(Constant)	7,553	1,117		0,000
	Land Area (X1)	1,167	0,166	1,945	0,000
	Labor (X2)	-0,128	0,244	-0,126	0,606
	Production Cost (X3)	-0,282	0,043	-1,242	0,000
	Price (X4)	0,669	0,079	0,582	0,003

Source: Primary Data Processed, 2022

Table 6 shows that the constant value is 7.553, which means that if the value of variable $X = 0$, the income remains at 7.553. The results of the multiple linear regression equation in this study are as follows:

$$\text{Log } Y = \log 7.553 + 1.167\log X_1 - 0.128\log X_2 - 0.282\log X_3 + 0.669\log X_4 + e$$

Based on the multiple linear regression equation, it can be seen that the variables that affect income are land area (X1), labor (X2), production costs (X3) and price (X4). The influence of the variables of land area (X1), labor (X2), production costs (X3) and price (X4) on income is as follows:

1. Land Area (X1)

Partially obtained that the land area variable has a positive and significant effect on the income of oil palm farmers in Lambandia Village. The land area regression coefficient value of 1.167 indicates that every 1% increase in land area cultivated will increase income by 1.167%, thus the more land area cultivated, the more income will also increase, assuming other factors outside the land area are constant (*ceteris paribus*). Land area with farmer income has a significant influence because the land utilization carried out by oil palm farmers in Lambandia Village has been optimal. The narrower the business land, the less efficient the farming business is.

The results of this study are in line with the statement of Suratiyah (2006), which states that the more land area cultivated, the higher the production and income. The results of this

study are in line with research conducted by Kurniawan (2018)), which states that the area of oil palm farming partially has a significant effect on income. The results of this study are also in line with research conducted by Moroki *et al.* (2018), which states that land area has a positive and significant effect partially on income.

2. Labor (X2)

Partially, it is found that the labor variable has no significant effect on the income of oil palm farmers in Lambandia Village with a significance value of $0.606 > \alpha (0.05)$. Labor with farmer income does not have a significant effect because the labor expenditure of oil palm farmers in Lambandia Village is less efficient. If the use of labor can be coordinated and activities in oil palm farming are carried out properly such as fertilizing, spraying and harvesting, then plants coconut palm will produce normally and productivity increasingly increase or good. So that directly with increased production results in total revenue will increase.

Labor is very important in business activities, because without labor, it will experience difficulties in the process of production activities and the results will take longer, so this can reduce income, but if the labor employed is someone who has experience, it will help his business activities. In contrast to the research of Saprida and Tarigan (2019) that the amount of labor has a positive and significant effect on oil palm farming income, in Raya Kahean District, Simalungun Regency.

3. Production Cost (X3)

Partially obtained that the variable production costs have a negative and significant effect on the income of oil palm farmers in Lambandia Village with a significance value of $0.000 < \alpha (0.05)$. The value of the production cost regression coefficient of -0.282 indicates that every 1% increase in production costs will reduce income by 0.282%, thus the greater the production costs incurred, the smaller the farmer's income, assuming other factors outside production costs are constant (*ceteris paribus*). Production costs negatively affect the income of oil palm farmers to be a determining factor in the rise and fall of farmers' income. The results of this study indicate that production costs are an important factor that reduces the income of oil palm farmers.

The results of this study are in line with research from Wahab and Pamungkas (2019) which found that production costs have a negative and significant effect on the income of oil palm farmers in Tapung Hilir District. In addition, the findings of this study are also supported by previous research by Sembiring *et al.* (2022), which found that production costs have a negative



and significant effect on the income of oil palm farmers in Dolok Parmonangan Village, Bandar Hulan District Simalungun Regency.

4. Price (X4)

Partially obtained that the price variable has a positive and significant effect on the income of oil palm farmers in Lambandia Village with a significance value of $0.003 < \alpha$ (0.05). The price regression coefficient value of 0.669 indicates that every 1% increase in selling price will affect income by 0.669%, meaning that if the price of palm oil set increases, the income of palm oil farmers will also increase, assuming other factors outside the price is constant (*ceteris paribus*). Prices with farmers' income have a significant positive effect because the selling price obtained by oil palm farmers in Lambandia Village at this time often goes up and down, not having a fixed price standard.

The findings of this study are in line with the theory put forward by Suratiyah (2011), which states that when viewed in terms of output if the demand for production is high then the price at the farm level is also high so that with the same costs farmers will get high income as well. Conversely, if farmers succeed in increasing production, but prices fall, farmers' income will also fall. Similarly, when the price of palm oil rises, the income of farmers will also rise.

CONCLUSION

Based on the results of research on factors affecting the income of oil palm farmers in Lambandia Village, Basalah Subdistrict, South Konawe Regency, it can be concluded that the income of oil palm farmers in Lambandia Village, Basalah Subdistrict, South Konawe Regency averages Rp42,985,442/year.

Factors that have a real effect on the income of oil palm farmers in Lambandia Village, Basalah Subdistrict, South Konawe Regency are land area (X1), and price (X4), which has a negative effect on production costs (X3), while those that have no effect are labor (X2).

Based on the results of the study, it is recommended that oil palm farmers increase their farm production by increasing the area of cultivated land, minimizing production costs, and increasing selling prices. In addition, the government is expected to provide counseling and technical guidance to increase farmers' income, as well as provide assistance with agricultural facilities and infrastructure. Furthermore, for future researchers, it is recommended to conduct further research by observing other variables that have not been studied, such as capital, technology, and other factors.





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