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Analysis of Palm Oil Income and Production for Farmers Joined in Cooperatives in Pakawa Village, Pasangkayu District

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ABSTRACT

The agricultural and plantation sectors still play a very important role in the economy in North Mamuju Regency, the development of plantations in North Mamuju Regency is indeed very important both historically and technically. planting of plantation commodities such as cacao and oil palm. Based on these phenomena the author feels it is very necessary to look at the level of income and production among farmer community groups who are members of cooperatives, especially farmers who cultivate oil palm plants which the author sets out in a study with the title: "Analysis of Oil Palm Income and Production for Farmers Joining Cooperatives in Pakawa Village, Pasangkayu District. The method used is descriptive analysis method. The results of his research show that the income and production results of oil palm farmers who are members of the Budhi Karya cooperative have differences with farmers who are not members of the Budhi Karya cooperative in Pakawa Village, Pasangkayu District.

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1. INTRODUCTION

In Indonesia, oil palm is a very important crop in the development of national plantations. As an agricultural country, the role of the agricultural sector in Indonesia's development cannot be doubted. The development of the agricultural sector is directed at increasing the productivity of agricultural products in order to meet the food needs of the people and the needs of the domestic industry, increase exports, increase farmer incomes, expand employment opportunities and encourage business opportunities. (Soekartawi. 1993: 20). According to Fauzin Yann (2004: 18), during the period from 1990-2008 the total area reached 14,164,439 ha or an increase of 21.5%. The average production of smallholder oil palm reaches 36 tons/ha/year for large plantations

Oil palm has a higher productivity than other vegetable oil-producing crops, such as soybeans and peanuts. The relatively long production period of palm oil (22 years) will affect the low production costs incurred by palm oil entrepreneurs. Oil palm is also the most resistant to pests and diseases compared to other vegetable oil-producing crops. If seen from the world consumption of vegetable oil reaches an average of 25 kg/year per person, this need will continue to increase in line with population growth and increased per capita consumption.

During 2008-2009 the economic growth of North Mamuju Regency averaged 11.5% and 9.8% in 2008 to 2009. The GRDP income of North Mamuju Regency based on constant prices in 2000 was 7,778.0 million rupiah in 2008 , then in 2009 it increased by 8,671.8 million rupiah, with the

largest contribution from the agricultural sector of 49.88%, followed by the manufacturing sector 34.22% and from the service sector 7.41%. (Central Bureau of Statistics, 2010).

The data above illustrates that North Mamuju Regency shows a graph that continues to increase in income, and it is understandable that this increase is supported by several factors, both technical and other non-technical factors, with these conditions expected to change the living conditions of rural communities who live from agricultural products.

The agricultural and plantation sectors still play a very important role in the economy in North Mamuju Regency, the development of plantations in North Mamuju Regency is indeed very important both historically and technically. planting plantation commodities such as cocoa and oil palm. Technically the condition of the land in North Mamuju Regency is very supportive, there is still a lot of idle land and critical land that has not been utilized, totaling 121,288 Ha or around 19.64% of the area of North Mamuju Regency which is a potential for future plantation development.

In North Mamuju Regency, quite a lot of agricultural and plantation commodities are cultivated by farmers and play an important role, namely oil palm. It is understandable why it is important for this oil palm commodity to be developed as one of the leading commodities in North Mamuju Regency considering that of the many plantation commodities, oil palm plantations have the largest land area. and the largest in North Mamuju Regency, this shows how big the potential for palm oil commodities is to be developed to support the people's economy.

Pakawa Village residents mostly work and try in the agricultural sector. Pakawa Village, Pasangkayu District is one of the villages in North Mamuju Regency where most of the people live and work in the agricultural sector. Pakawa Village was originally a cocoa (chocolate) plantation but now it has turned into an oil palm plantation. The Pakawa Village community cultivates oil palm as the main crop. As the main crop cultivated, dependence on income from the sale of palm oil greatly affects their level of welfare.

The magnitude of the benefits of oil palm for both the private sector and the people who expect the growth and productivity of oil palm to increase continuously so that the factors that affect the growth and productivity of oil palm must be considered. One of the factors that can reduce the growth and productivity of oil palm is capital. Therefore, the existence of a cooperative in Pakawa Village is very helpful for farmers in increasing the growth and productivity of oil palm, namely making it easier for farmers to obtain funds or business capital (credit) from the Budhi Karya cooperative.

Pakawa Village in fact shows that all oil palm farming communities live in better conditions than before, especially farmers who are members of cooperatives (Budhi Karya). Based on these phenomena, the author feels it is very necessary to look at the level of income and production among farmer community groups who are members of cooperatives, especially farmers who cultivate oil palm plants, which the author describes in a study entitled: "Analysis of Income and Production of Oil Palm in Farmers Members of the Cooperative in Pakawa Village, Pasangkayu District.".

2. RESEARCH METHODS

3.1 Research type

The type of research used in this research is explanatory research. In accordance with the aims and objectives of the research to be achieved, such research according to Masri and E. Sofyan (1985: 5) explains that the type of explanatory research is a study that seeks to explain or explain the relationship between variables carefully and certain phenomena through Hypothesis test. Researchers went directly to the field to see the conditions or activities of the oil palm farmers in

3.2 Sample

(Consuelo G. Sevilla, 2006: 161), To determine the sample size of the population, the following formula is used:

$$n = \frac{N}{1+Ne^2}$$

Where: n = sample size
N = population size
e = population sampling error

The sample size of farmers who are members of cooperatives are:

$$n = \frac{N}{1+Ne^2}$$

$$1 + 250\ (0.13)^2$$

$$250\ \frac{N}{1+Ne^2}$$

$$n = \frac{N}{1+Ne^2} = 48$$

$$5{,}225$$

$$z = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

The sample sizes of farmers who are not affiliated with cooperatives are:

$$100\ \frac{N}{1+Ne^2}$$

$$n = \frac{N}{1+Ne^2}$$

$$1 + 100\ (0.13)^2$$

$$100\ \frac{N}{1+Ne^2}$$

$$n = \frac{N}{1+Ne^2} = 37$$

$$2.69$$

In this study, the size of the sample members depends on the desired error rate. The greater the error rate, the smaller the number of samples required, and conversely, the smaller the error rate, the greater the number of sample members required. Therefore, given the limited funds, time, and manpower, the researchers took a sampling error rate of 13%, so that the samples taken were 48 oil palm farmers who were members of cooperatives and 37 oil palm farmers who were not members of cooperatives..

3.3 Data collection technique

Based on the problems in this study, mathematical and statistical data processing analysis techniques can be used, and the method used is descriptive analysis method which can be seen as follows: According to Soekartawi (1987: 35), in maximizing income what needs to be considered is the acceptance itself. To analyze the first problem, mathematically it can be formulated as follows:

$$Y = TR - TC$$

Where :

Y = Farmer's income
TR = Total receipts
TC = Total cost

Statistically it can be formulated as follows:

$$(x_1 - x_2) - (\mu_1 - \mu_2)$$

Where :

z = z-test
x_1 = sample mean 1
x_2 = sample mean 2
μ_1 = population mean 1 (standard deviation)
μ_2 = population mean 2 (standard deviation)
σ^2 = variance of the population
n = number of samples

If μ_1 is the average income and production of farmers from a population that is part of a cooperative and μ_2 is the average income and production of farmers from a population that is not part of a cooperative, then:

$H_0 : \mu_1 = \mu_2$

$H_a : \mu_1 \neq \mu_2$

H_o : There is no difference

H_a : There is a difference

Ho is accepted and Ha is rejected if zcount <ztable means there is no difference between the two variables. Ho is rejected and Ha is accepted if zcount > ztable means there is a difference between the two variables. Based on the second problem in this study used descriptive analysis method. In this method it is presented in the form of data and tables, then an analysis is carried out regarding the phenomena contained in the data and tables which are complemented by descriptions of farmer incomes

3. RESULTS AND DISCUSSIONS

3.1 Characteristics of sample farmers

The sample farmers referred to here are all the oil palm farmers sampled in this study, both farmers who are members of cooperatives and those who are not affiliated with cooperatives in Pakawa Village, Pasangkayu District. For more details, it can be seen in Table 1 below:

Table 1. Condition of farmers who are members of cooperatives, 2011

No	Description	Average	Range
1	Age (years)	35.06	23-62
2	Education (years)	4,33	0-9
3	Oil palm farming experience (years)	5.96	4-6
4	Average area of oil palm harvested land (Ha)	2,5	1-7
5	Production (kg/hectare/month)	1.108	1-2
6	Production (kg/farmer/month)	2,770	1-6

Based on Table 1 above, it shows that the sample farmers have an average age of 35.06 years with a range of 23-62, meaning that the sample farmers are still at a productive age so there is still great potential to develop productivity. The education of farmers in the study area is in the range of 0-9 years, meaning that some farmers do not go to school and some go to junior high school.

Farming experience is in the range of 4-6 years or an average of 5.96 years. It appears from this survey that the farmers interviewed are the first generation members of the Budhi Karya cooperative which was founded 13 years ago. This shows that oil palm farming consists of a beginner stage. The average area of oil palm harvested land is in the range of 1-7 Ha with an average of 2.5 Ha, meaning that farmers have an above average harvested area. Total production (tonnes/farmer/month) is in the range of 1-6 tons/farmer/month with an average of 2,770 kg/farmer/month with an average production of 1,108 kg/hectare, meaning that the production produced by farmers is quite large.

Table 2. Condition of farmers who are not members of cooperatives, 2011

No	Description	Average	Range
1	Age (years)	36,83	21-51
2	Education (years)	5,67	0-12
3	Oil palm farming experience (years)	4.59	3-6
4	Average area of oil palm harvested land (Ha)	2.35	1-8
5	Production (kg/hectare/month)	974	0.9-1
6	Production (kg/farmer/month)	2,289	1-6

Table 2 above shows that the sample farmers have an average age of 36.83 years with a range of 21-51 years, meaning that farmers who are not members of the Budhi Karya cooperative are still at a productive age so there is still great potential to develop productivity. The education of farmers in the study area is in the range of 0-12 years, meaning that some farmers do not attend school and

some attend high school. Farming experience is in the range of 3-6 years or an average of 4.59 years. This survey proves that farmers who are not members of cooperatives are also the first generation.

The average area of oil palm harvested land is in the range of 1-8 Ha with an average of 2.35 Ha, meaning that farmers have an above average harvested area. Total production (tons/farmer/month) is in the range of 1-6 tons/farmer/month with an average of 2,289 kg/farmer/month with an average production of 974 kg/hectare, meaning that the production produced by farmers is quite large.

3.2 Average income of farmers

The average income of farmers in the form of revenue from sales can be measured based on the calculation of the multiplication result between the amount of palm oil production (kg) and the selling price of palm oil (Rp). The amount of income depends on the level of production. Oil palm plants can be harvested after they are 3-4 years old and can be harvested 2-4 times a month. The average income of oil palm farmers who are members of the Budhi Karya cooperative can be presented in Table 8 as follows:

Table 3. Average income of oil palm smallholders who are members of cooperatives

No	Description	Per month	Per year
1	Production (kg/hectare)	1.108	13,296
2	Production (kg/farmer/2.5 ha)	2,770	33,240
3	Average price of palm oil (Rp/Kg)	1,250	1,250
4	Revenue (Rp/hectare)	1,385,000	16,620,000
5	Revenue (Rp/farmer/2.5 ha)	3,462,500	41,550,000

Source: Data after processing

Table 3 above illustrates the average income of oil palm farmers who are members of cooperatives in the form of a monthly production value of IDR 3,462,500 and IDR 41,550,000 per year with an average area of oil palm harvested by farmers who are members of cooperatives of 2. 5 Ha. It can be seen that the farmer's production is 2,770 kg/month/farmer and 33,240 kg/year/farmer with an average selling price of 1,250/kg, this shows that farmer income is IDR 3,462,500 per month/farmer and IDR 41,550,000 per year farmers are big enough to see the number of family dependents 2-5 people.

Table 4. Average income of oil palm smallholders who are not affiliated with cooperatives

No	Description	Per month	Per year
1	Production (kg/hectare)	974	11,688
2	Production (kg/farmer/2.35 ha)	2,289	27,468
3	Average price of palm oil (Rp/Kg)	1,250	1,250
4	Revenue (Rp/hectare)	1,217,500	14,610,000
5	Revenue (Rp/farmer/2.35 ha)	2,861,250	34,335,000

Source: Data after processing

Based on Table 4 above, with an average area of oil palm harvested by farmers who are not affiliated with cooperatives of 2.35 Ha, it can be seen that farmers' production is 2,289 kg/month/farmer and 27,468 kg/year/farmer with an average price selling 1,250/kg, the farmer's income is IDR 2,861,250 per month/farmer and 34,335,000 per year/farmer. This means that the acceptance of farmers is quite large by looking at the number of family dependents of 2-4 people.

3.3 Production cost

Production costs are costs incurred by farmers, both fixed costs and variable costs in producing palm oil for one year. Palm oil production costs consist of production inputs (fertilizers and medicines), labor costs, land tax costs, depreciation costs and transportation costs.

Fertilization plays an important role in increasing agricultural production, because fertilized soil will increase crop yields. For this reason, the fertilizers that are often used are Urea, TSP, KCL and NPK. To increase crop production, one of the efforts taken is to increase the efficiency of fertilizer use. Giving the right type of fertilizer, dose, time and method will increase crop production. Applying fertilizer to oil palm plants must pay attention to several things, including:

a. Absorption capacity of plant roots
b. How to apply fertilizer

c. Fertilizer application time
d. The type and dose of fertilizer used is adjusted to the age of the plant, the type of soil, and the time of application.

In general, the dosage of fertilization for producing plants can be seen in Table 10 below:

Table 5. Fertilizer use for productive crops.

No	Fertilizer Type	Dosage (kg/tree)	Frequency of giving times / year
1	Urea	0.75-1.5	2X
2	TSP	0.5-1	2X
3	KCL	0.75-1	2X
4	NPK	0.25-0.75	2X

Source: KUD-Budhi Karya Office

Costs for production facilities consist of costs for fertilizers (Urea, TSP, KCL and NPK) and medicines (gramoxone and basmilang) alternately every year. Labor costs include labor costs within the family and labor outside the family, labor wages for harvesting, pruning and spraying have different wages for each worker.The tax fee is the cost of PBB (Land and Building Tax) which is usually deducted annually in the amount of IDR 25,000 / hectare. While transportation costs are costs incurred by farmers in transporting palm oil production to the factory. For more details, farmers' production costs can be seen in Table 11 as follows:

Table 6. Average production costs of farmers who are members of cooperatives in Pakawa Village

No	Description	Farmer (Rp/year)	Percentage (%)	Farmer (Rp/Month)	Percentage (%)
1	Variable costs:				
	e. production facilities	2,234,000	20.84	-	-
	f. Labor	3,324,000	31.01	277,000	40
	g. Transportation	4,986,000	46,52	415,500	60
2	Fixed cost:				
	- Land tax	62,500	0.58	-	-
	- Depreciation of equipment	112,000	1.04	-	-
	Total	**10,718,500**	**100**	**692,500**	**100**

Source: Data after processing

Based on Table 6 above, with an average area of oil palm harvested by farmers who are members of cooperatives of 2.5 Ha, it can be seen that the total cost of production, both fixed costs and variable costs, averages per farmer Rp. 10,718,500 per year, and Rp. 692,500 per month. This shows that transportation costs are the largest cost component, namely Rp. 4,986,000 per year, with a percentage of 46.52%, due to mountainous road conditions and a long distance from the place of loading (TPH) to the factory of about 20 km. The labor cost in question is the wages of oil palm fruit harvesters, which is IDR 3,324,000 per year with a percentage of 31.01%. The means of production in question are fertilizers and medicines in the amount of IDR 2,234,000 per year with a percentage of 20.84%. Equipment depreciation is the cost of replacing artco tires which is IDR 112,000 per year with a percentage of 1.04% and the lowest is the land tax which is a government regulation of only IDR 62,500 per year with a percentage of only 0.58%.

Table 7. The average cost of production for farmers who are not members of a cooperative in Pakawa Village

No	Description	Farmer (Rp/year)	Percentage (%)	Farmer (Rp/month)	Percentage (%)
1	Variable costs:				
	- Production facilities	2,394,000	25,38	-	-
	- Labor	2,746,800	29,12	228,900	40
	- Transportation	4,120,200	43,68	343,350	60
2	Fixed cost:				
	h. Land tax	58,750	0.62	-	-
	i. Equipment depreciation	112,000	1.19	-	-
	Total	**9,431,750**	**100**	**572,250**	**100**

Source: Data after processing

In Table 7 above, with an average area of oil palm harvested by farmers who are not affiliated with cooperatives of 2.35 hectares, it can be seen that the average total production cost per farmer is IDR 9,431,750 per year and IDR 572,250 per month. Transportation costs, which are the largest cost component, namely IDR 4,120,200 per year with a percentage of 43.68%, are the costs of transporting oil palm fruit to the factory. The workforce consists of harvesters of oil palm fruit, which is IDR 2,746,800 per year with a percentage of 29.12%. The means of production which are fertilizers and medicines amount to Rp. 2,394,000 per year with a percentage of 25.38%. Equipment depreciation by replacing artco tires 2 times is IDR 112,000 per year with a percentage of 1.19%. The lowest fee is the land tax which is a regulation from the government, namely IDR 58,750 per year with a percentage of only 0.62%.

3.4 Farmer's net income

Farmers' net income is obtained from the revenue minus the total costs incurred. An overview of the average net income of farmers who are members of the Budhi Karya cooperative in Pakawa Village can be seen in Table 13 as follows:

Table 8. Average net income of farmers who are members of cooperatives in Pakawa Village

No	Description	Per month	Per year
1	Revenue (Rp/farmer)	3,462,500	41,550,000
2	Production costs (Rp/farmer)	692,500	10,718,500
3	Net income (Rp/farmer)	2,770,000	30,831,500

Source: Data after processing

Based on Table 8 above, it shows that the average net income of farmers who are members of the Budhi Karya cooperative in Pakawa Village, Pasangkayu District is Rp. incorporated in a cooperative with an area of 2.5 hectares. Meanwhile, the net income of farmers who are not members of the Budhi Karya cooperative in Pakawa Village can be seen in Table 14 as follows:

Table 9. Average net income of farmers who are not affiliated with cooperatives in Pakawa Village

No	Description	Per month	Per year
1	Revenue (Rp/farmer)	2,861,250	34,335,000
2	Production costs (Rp/farmer)	572,250	9,431,750
3	Net income (Rp/farmer)	2,289,000	24,903,250

Source: Data after processing

Table 9 contains an overview of the average net income of farmers who are not members of the Budhi Karya cooperative in Pakawa Village, there is no significant difference, namely IDR 2,289.00 per month and IDR 24,903,250 per year with an average area of oil palm harvested land farmers who are not members of cooperatives with an area of 2.35 Ha.

3.5 Hypothesis test

The z statistical test was carried out to show the average difference between the two variables, namely farmers who are members of a cooperative and those who are not affiliated with the Budhi Karya cooperative in Pakawa Village, Pasangkayu District. To see these results can be seen in Table 10 as follows:

Table 10. The average value of z_{count} and z_{table}

No	Description	Total
1	Z_{count}	1.1707
2	Z_{table}	0.1492

Source: Data after processing

Based on Table 10 above, it can be seen that the z_{count} is greater than the z_{table} (1.1707 > 0.1492) meaning that it accepts Ha and rejects H_0, that is, there is a difference in income and production results between farmers who are members of cooperatives and those who are not members of cooperatives. in the Budhi Karya cooperative in Pakawa Village, Pasangkayu District.

4. CONCLUSION

Based on the discussion in this thesis, several conclusions can be put forward as follows: The income and production results of oil palm farmers who are members of the Budhi Karya cooperative are different from farmers who are not members of the Budhi Karya cooperative in Pakawa Village,

Pasangkayu District. The socio-economic characteristics of oil palm farmers who are members of the Budhi Karya cooperative in Pakawa Village, Pasangkayu District can be classified as in adequate socioeconomic conditions, although oil palm farmers generally have a very alarming educational background due to the concern and motivation of parents. However, schools, health centers, markets, mosques and churches have been procured since 2005, and the roads and bridges are in adequate condition.

REFERENCES

Ace Partadireja. 1980. Pengantar Ilmu Ekonomi Produksi. Jakarta: Rineka Cipta

Badan Pusat Statistik. 2010. Kabupaten Mamuju Utara dalam Angka 2009. Mamuju: Badan Pusat Statistik, Kabupaten Mamuju Utara

Bahasaoan, Awal Nopriyanto, Aswar Rahmat, Taufik Hidayat BTahawa, Farida Millias Tuty, and Meldilianus Nabas J. Lenas. "Analysis of Economic Growth and Base Sectors in West Sulawesi Province 2015-2021." Jurnal Mantik 6, no. 3 (2022): 3754-3763.

Magfuri. 1987. Ekonomi Pembangunan. Jakarta: Raja Grafindo Persada

Masri dan E. Sofyan. 1985. Metode Penelitian. Jakarta: CV. Rajawali.

Mubyarto. 1989. Pembangunan Pertanian dan Kesejahteraan Petani: Suatu Telaah Kritis. Jakarta: PT. Gramedia Pustaka Utama.

Mulyanto dan Ever. 1982. Analisis Ekonomi: Teori, Konsep dan Aplikasi. Jakarta: PT. Bumi Aksara.

Sadono Sukirno. 2001. Makroekonomi Teori Pengantar. Jakarta: PT Raja Grafindo Persada

Soekartawi. 1993. Pengantar Agribisnis. Jakarta: Rajawali Press.

Soekartawi. 1987. Agribisnis Teori dan Aplikasi. Jakarta: Rajawali Press.

Sudarsono. 1983. Produksi, Biaya dan Profit. Yogyakarta: BPFE

Syaparuddin. 1999. Menggagas Pembangunan Berkeadilan: Sebuah Kritik Pembangunan Indonesia. Jakarta: PT. Gramedia Pustaka Utama.

Wijaya, R. 2002. Koperasi dan Kemandirian Masyarakat. Jakarta: PT. Gramedia Pustaka Utama

Yan Fauzi. 1992. Kelapa Sawit: Budidaya dan Pemanfaatannya. Jakarta: Penebar Swadaya