**INCOME COMPARISON ON INTENSIFICATION AND NON INTENSIFICATION OF RUBBER FARMERS IN MONTERADO VILLAGE, MONTERADO DISTRICT, BENGKAYANG REGENCY**

**KOMPARASI PENDAPATAN PETANI KARET INTENSIFIKASI DAN NON INTENSIFIKASI DI DESA MONTERADO KECAMATAN MONTERADO KABUPATEN BENGKAYANG**

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**ABSTRAK**

Perkebunan karet di Indonesia memiliki peranan penting, baik ditinjau dari segi sosial maupun ekonomi. Petani dalam melaksanakan budidaya karet sebagian besar masih bersifat konvensional. Tujuan dari penelitian ini adalah untuk menganalisis pendapatan dan nyata perbedaan pendapatan petani karet dengan menggunakan dua metode yaitu metode usahatani intensifikasi dan non intensifikasi. Penelitian ini dimulai pada bulan November 2018 hingga bulan Desember 2018 di Desa Monterado, Kecamatan Monterado, Kabupaten Bengkayang, Kalimantan Barat. Metode pengambilan sampel yang digunakan adalah *Stratified Random Sampling* (SRS) dengan metode alokasi proporsional dan total sampel 58 orang. Hasil analisis ini menunjukkan bahwa pendapatan rata-rata petani karet di Desa Montado, Kecamatan Monterado, Kabupaten Bengkayang, yang menerapkan intensifikasi produk usaha pertanian Rp. 5.533.198,46/ha/tahun. Sedangkan petani yang tidak membudidayakan intensifikasi memperoleh Rp. 3.206.725,00/ha/tahun. Ada perbedaan antara pendapatan karet rata-rata antara petani yang menerapkan intensifikasi pertanian karet dan yang tidak menerapkan non intensifikasi. Perbedaan pendapatan rata-rata adalah Rp. 2.267.797,07, dan perbedaan tersebut berkisar antara Rp. 2.020.110,99 sampai Rp. 2.515.483,14.

***Kata kunci:*** *Petani Karet, Perbandingan Pendapatan, Intensifikasi, Non Intensifikasi*

***ABSTRACT***

*Rubber plantations in Indonesia have an important role, both in terms of social and economic aspects. Farmers in rubber cultivation are mostly still conventional. The purpose of this study is to analyze the income and real estate income of farmers with the use of two methods, namely intensification and non-intensification farming methods. This research began in November 2018 until December 2018 in Monterado Village, Monterado District, Bengkayang Regency, West Kalimantan. The sampling method used was Stratified Random Sampling (SRS) with proportional collection methods and a total sample of 58 people. The results of this analysis contain the facts of rubber farmers in Montado Village, Monterado District, Bengkayang Regency, who implemented intensification of agricultural business products Rp. 5,533,198.46/ha/year. Meanwhile farmers who did not cultivate intensification received Rp. 3,206,725.00/ha/year. There is a difference between average rubber income between farmers who apply intensification of rubber farming and those who do not apply intensification. The difference in average income is Rp. 2,267,797.07, and the difference is between Rp. 2,020,110.99 up to Rp. 2,515,483.14.*

***Keywords:*** *Rubber Farmers, Income Comparison, Intensification, Non Intensification*

**INTRODUCTION**

Plantation as an integral part of the agricultural sector plays an important and strategic role in sustainable national development (Devi, 2015). Rubber plantations in Indonesia have an important role, both in social and economic terms. This is due to its quite extensive distribution and exploitation in various regions (Ali, et.al., 2015; Nugraha & Alamsyah, 2019).

Rubber is a plantation crop with high economic value, its age can reach 20-30 years. Therefore, it can provide guarantees according to their economic age (Saputra, et.al., 2019). Rubber plantation farming in Indonesia is managed mostly by the people (Hermansyah, et.al., 2014). The rubber marketing system carried out by rubber farmers greatly determines the profits they obtain in cultivating their rubber plants (Pangestu, et.al., 2018).

Farmers are mostly still conducting conventional rubber cultivation in nature. The low productivity of smallholder rubber causes low rubber production and indirectly causes the household income of farmers to be low so that it is not sufficient for their living needs (Marnisah, et.al., 2017). Also, the low quality of agricultural products causes the price of received products to be low (Napitupulu & Effran, 2018) Rejuvenation is an effort to increase the productivity of old and damaged rubber plants. The constraints on smallholder plantations are limited capital and the worry of farmers losing income during rejuvenation (Listyati & Ferry, 2014).

Monterado District has a rubber plantation area of ​​6,151 ha with a total production of 4,585 tons. Researchers only conducted the research process in one village in Monterado District, Monterado Village to be a location that should be the object of research because among the 11 villages, the amount of production compared to the highest area in the Village of Monterado, with an area of ​​680 ha and Producing Plants (TM) production of 610 tons.

**RESEACH METHOD**

The study was conducted in Monterado Village, Monterado District, Bengkayang Regency, West Kalimantan. The site selection was done purposively with the consideration that the area has business potential and the rubber farmers carry out their business with two types of business patterns, namely intensification and non-intensification. The study was conducted in November 2018 to December 2018.

If there is absolutely no knowledge about the size of the variance of the population, the best way to determine the research sample is to simply take a certain percentage (%), for example 5% to 50% of the total population (Soeparmoko, 2005). The sampling technique used is Stratified Random Sampling (SRS) with the proportional allocation method. According to Raharja (2018), Stratified Random Sampling (SRS) is a sampling technique with regard to levels (strata) in elements of the population.

**RESULT AND DISCUSSION**

**Description of Rubber Cultivation in Monterado Village**

Rubber plantations are cultivated by rubber farmers in the Village of Monterado consisting of two varieties, namely local varieties and improved rubber PB 260. The results showed that the productivity of local varieties rubber ranged from 432-600 kg / ha / year and 720-792 kg / ha / year for varieties superior PB 260. This is consistent with information from the Plantation Crop Research and Development Agency (2012) that from 1980 to 2010, the problem of Indonesian rubber was the low productivity and quality of rubber produced, especially by smallholder rubber farmers.

**Age**

The age variables of farmers respondent are calculated from the start of respondent farmers being born until the time of primary data collection.

**Table 1. Age Distribution Data,**

**Frequency and Income**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Age (Year)** | **Petani Karet Intensifikasi** | | **Petani Non Intensifikasi** | |
| **Frequency (Population)** | **Average Income (Rp)** | **Frequency (Population)** | **Average income (Rp)** |
| 28–45 | 10 | 5.529.785 | 20 | 3.126.660 |
| 46–67 | 9 | 5.422.811 | 9 | 3.399.440 |
| Total | 19 | - | 29 | - |

Source: Data Analysis Results, 2019

Table 1 shows the average rubber farmers in this study were 48 people belonging to the productive age category. According to Keynesian in Wibowo (2002), that the productive age range is 14 - 55 years. Age is a major factor affecting the efficiency of learning and one's interest in work and influences the level of maturity of a person both physically and emotionally that will determine the readiness of learning (Mardikanto, 2009).

The analysis shows that younger farmers tend to have a high enthusiasm for running a farm. Nevertheless, the difference is not significantly different, so it can be said that rubber farmers who carry out intensive farming with the age range of 28 - 67 years tend to have the same perception in this business. Linearly, it states that the experience of farming is influential. The longer a person's experience in farming is, the easier it is to understand a new technological innovation and the easier it is to apply it (Roger in Mardikanto, 2010).

**Educational Background**

Respondent variables are determined based on the last formal education level taken.

**Table 2. Data Distribution Levels**

**of Formal Education, Frequency**

**and income**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Education Level** | **Intensification Rubber Farmers** | | **Non-Intensification Rubber Farmers** | |
| **Freq (Population)** | **Average Income (Rp)** | **Freq(Population)** | **Average income (Rp)** |
| Primary school | 9 | 5.422.811 | 9 | 3.193.088 |
| Junior high school | 7 | 5.611.421 | 15 | 3.324.733 |
| Senior high school | 3 | 5.339.300 | 5 | 2.903.873 |
| Total | 19 | - | 29 | - |

Source: Data Analysis Results, 2019

Table 2 indicates that the workforce in the agricultural sector, especially rubber farming in the village of Monterado is still dominated by farmers with low formal education levels. The higher the farmer's education level, the better his rationality level of thinking. This is in line with the phrase which states that mentally education functions to prepare someone to face life's ever-changing challenges, and with education can maintain stability, continuity and drive for a better future (Kusnadi in Suratiyah, 2008).

**Business Area**

The land is calculated based on the total area of ​​business land cultivated by respondent farmers in undergoing rubber farming when researching.

**Table 3. Land Area of Distribution Data**

**Business, Frequency and**

**Income**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Land area** | **Intensification Rubber Farmers** | | **Non-Intensification Rubber Farmers** | |
| **Frequency (Population)** | **Income (Rp)** | **Frequency (Population)** | **Income (Rp)** |
| 1.0 – 1.5 Ha | 6 | 5.141.591,67 | 0 | 0 |
| 2.0 – 3.0 Ha | 13 | 5.634.892,31 | 29 | 3.211.316,09 |
| Total | 19 | - | 29 | - |

Source: Data Analysis Results, 2019

Table 3 indicates that broader land tenure status tends to have more financial and economic capacity to try to implement innovations that are considered new. The area of ​​agricultural land in the District of Monterado, especially in the Village of Monterado is still quite potential and the farmers are still relatively relatively prosperous and there are opportunities to easily adopt agricultural technological innovations. The area of ​​land is positively related to the level of adoption of farmers, because there is more economic capacity, and one's economic status will also determine the availability of a facility needed for certain activities (Saragih, 2001; Soedijanto, 2005). However, the results of this study contradict the opinions of the experts above.

**Analysis of Farmer Business Income**

**Fix cost**

**Table 4. Fixed Costs of Rubber Farming**

**Intensification and Non**

**Intensification**

|  |  |  |
| --- | --- | --- |
| **Description** | **Average (Rp/year)** | |
| **Intensification Rubber Farmers** | **Non- Intensification Rubber Farmers** |
| Depreciation Equipment Costs | 274.752 | 253.086 |
| Farming Taxes | 42.881 | 51.689 |
| Average Amount | 317.634 | 304.775 |

Source: Data Analysis Results, 2019

Table 4 states that there is no significant difference between the average fixed costs incurred by rubber farmers by intensification and non-intensification. The average fixed costs incurred by rubber farmers are intensified greater than non-intensification because non-intensifying farmers have less volume of the same type of goods in the variable costs, and tend to use more efficient equipment.

**Variable cost**

Consists of the cost of Production Infrastructure Costs (Saprodi), while labor costs are not calculated because they come from family labor.

**Table 5. Recapitulation of Average Costs**

**Not fixed**

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification** | **Average production infrastructure costs (Rp)** | **Average Cost in a Family (Rp)** | **Average Amount (Rp)** |
| Intensification Farmers | 1.550.789 | 2.070.263 | 3.621.052 |
| Non- Intensification Farmers | 828.586 | 2.311.206 | 3.139.793 |

Source: Data Analysis Results, 2019

Table 5 states that the average non-fixed costs incurred by rubber farmers who implement their rubber farming intensification in one year are greater than the average non-fixed costs incurred by rubber farmers who do not involve their farming. This is because non intensification rubber farmers tend to suppress their farming inputs because the output in the form of latex and jinton produced is relatively smaller, so that the income received is relatively smaller.

**Total Cost, Revenue and Income of Rubber Farming**

Here are the total costs, revenues, average income / year of intensification and non-intensification rubber farming:

**Table 6. Average Revenue, Total**

**Costs and Farming Income**

**Rubber with Intensification**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | | **Description** | **Average Vol** | **Average Unit Price (Rp)** | | **Value (Rp)** | |
| 1. Acceptance of Thin Sleb (Kg) | | | 1.356,63 | 8.500,00 | | 11.531.368,42 | |
| 1. Jinton Reception (kg) | | | 624,00 | 3.000,00 | | 1.872.000,00 | |
| 1. Number of Receipts /th (1+2) | | |  |  | | 13.403.368,42 | |
| 1. Farming costs: | | |  |  | |  | |
|  | 1. NPK fertilizer (kg) | | 205,26 | 2.500,00 | | 513.157,89 | |
|  | 1. Urea fertilizer (kg) | | 105,26 | 2.000,00 | | 210.526,32 | |
|  | 1. Herbicide (liter) | | 7,00 | 68.368,42 | | 481.105,26 | |
|  | 1. Fungicide (liter) | | 3,47 | 100.684,21 | | 346.000,00 | |
|  | 1. Equipment Depreciation | |  |  | | 274.752,63 | |
|  | 1. Land Tax | |  |  | | 42.881,58 | |
|  | 1. Labor costs (Rp) | |  |  | | 2.070.263,16 | |
| 5. Average Total Cost | | |  |  | | 3.938.686,84 | |
| 6. Average Income/th (3-5) | | |  |  | | 9.464.681,58 | |
| Average income/Ha/th (6:1,71) | | | | |  | | 5.533.198,46 | |

Source: Data Analysis Results, 2019

**Table 7. Average Revenue, Total**

**Costs and Income of Non-Intensified Rubber Farming**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | | **Description** | **Average Vol** | **Average Unit Price (Rp)** | **Value (Rp)** |
| 1. Acceptance of Thin Sleb (Kg) | | | 1044,41 | 8.500,00 | 8.877.517,24 |
| 1. Jinton Reception (kg) | | | 400,55 | 3.000,00 | 1.201.655,17 |
| 1. Number of Receipts /th (1+2) | | |  |  | 10.079.172,41 |
| 4. Farming costs: | | |  |  |  |
|  | 1. NPK fertilizer (kg) | | 117,24 | 2.500,00 | 293.103,45 |
|  | 1. Urea fertilizer (kg) | | 0 | 0 | 0 |
|  | 1. Herbicide (liter) | | 7,90 | 68.034,48 | 535.482,76 |
|  | 1. Fungicide (liter) | | 0 | 0 | 0 |
|  | 1. Equipment Depreciation (Rp) | |  |  | 253.086,21 |
|  | 1. Land Tax (Rp) | |  |  | 51.689,66 |
|  | 1. Labor costs (Rp) | |  |  | 2.311.206,90 |
| 5. Average Total Cost | | |  |  | 3.444.568,97 |
| 6. Average Income /th (3-5) | | |  |  | 6.634.603,45 |
| Average income /Ha/th (6:2,07) | | | |  | 3.206.725,00 |

Source: Data Analysis Results, 2019

Tables 6 and 7 show that the average total costs, revenues and income of intensified rubber farmers are greater than non-intensified rubber farmers. In line with the research of Yusri and Zulkifli (2010), the average income of PB 260 rubber farmers is greater than non-intensification rubber farmers.

The low production of non-intensification rubber farmers is due to the use of fertilizers. Intensification rubber farmers tend to use the recommended type of fertilizer even though the amount is not according to the recommendations, while the use of fertilizers of non-intensifying farmer is still far from expectations, there are even farmers who do not fertilize at all, even though the role of fertilization really determines the level of production and productivity rubber plant. Application of fertilizer to mature plants (TM) can increase latex production by 15-56% compared without fertilization (Tambunan, et al., 1987).

**Comparison Analysis**

To test the comparative income of rubber farmers with two methods, the unpaired t-test statistical test is used:

**Table 8. T Paired Test Results**

|  |  |
| --- | --- |
| **F Variance Similarity Test** | **Assumed the same variant** |
| F | 1.206 |
| Significance. | 0.278 |
| T | 18.430 |
| Degree of | 46 |
| The significance of the two-tailed test | 0.000 |
| Average difference | 2.267.797,066 |
| Error rate | 123.049,638 |
| The lowest difference value | 2.020.110,991 |
| The highest difference value | 2.515.483,141 |

Source: Data Analysis Results, 2019

Table 8 explains that the homogeneity variance test with the F test states that the significant value is further determined by the distribution table t sought at a = 5%: 2 = 2.25% (two-tailed test) with degrees of freedom (df) n – 2, or 48-2 = 46. With two-sided testing (significance = 0.025) the results obtained for t table amounted to 2013. Therefore, t arithmetic 18,430> 2,013 and the significance value of the two-tailed test 0,000 <0.05, then H0 is rejected.

**CONCLUSION AND SUGGESTION**

It can be concluded that the average income of rubber farmers in the Village of Monterado, Monterado District, Bengkayang Regency, which implemented intensive farming is Rp. 5,533,198.46 / ha / year, while those who do not intensified in the intensification of Rp. 3,206,725.00 / ha / year. There is a difference between the average income of rubber farmers who implemented intensification to intensification and the difference between Rp. 2,020,110.99 to Rp. 2,515,483.14.

Rubber farmers who have not yet implemented their farming intensification in order to be willing and able to carry out rubber farming intensification in order to increase farming income.

**Credits**

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