



Conversion of Rubber Commodities into Palm Oil Based on The Economic Analysis in Banyuasin Regency

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ABSTRACT

Conversion of agricultural commodity planting, such as the conversion of rubber crops to palm oil crops is significantly increased in Indonesia, especially in Banyuasin Regency. In some cases, this increase in conversion is due to the annual decline in rubber prices, which has led to lower farmer incomes and regional economic growth. This research aims to determine and analyze the conversion of rubber crop commodities to palm oil in Banyuasin Regency based on price, productivity, and financial ratio analysis. The method used was descriptive analysis focusing on three main variables: price trends, productivity, and financial ratio analysis for the two commodities, including comparing production costs, income, and profitability. The results show that rubber prices have decreased significantly over the last ten years, while palm oil prices have not. The financial ratio analysis shows that palm oil has a better ratio value than rubber, which means that the palm oil business can continue to survive and develop consistently and promisingly.

Keywords: *Commodity conversion, palm oil, prices, productivity, rubber*

INTRODUCTION

Banyuasin Regency directly borders Palembang City, so it is one of the buffer districts for the capital of South Sumatra Province. Banyuasin Regency has a total area of 1.232.912 hectares (BPS, 2022). The types of land in this district include 22% shrub swamp (or around 299.773 hectares), 18% mixed dry land agricultural, 14% rice field, 14% mangrove, 12% plantation area, and the remaining 20% in the form of bushes and forests, swamps and other underutilized land (Pokja, 2016).

In Banyuasin Regency, the conversion of forests into rubber plantations and wetlands or swamps into oil palm plantations are the primary triggers for changes in land use (Meijide et al., 2018). This is also the most significant contribution to greenhouse gas emissions in Banyuasin Regency. To limit the conversion of forests and swamps into plantations, development is directed towards using other land to develop oil palm plantations by transferring rubber commodities, whose economic value is getting smaller every year (Harahap & Segoro, 2018; Nuralya, 2021).

Rubber plants are relatively easy to cultivate, but in managing rubber plantations, they often experience problems such as plant-disturbing organisms ranging from root fungi, diseases in the tapping field, peel fungi, and leaf fall diseases (Rezki et al., 2019). Apart from that, uncertain weather factors significantly impact rubber production, and prices continue to decline (Ulansari & Syarifuddin, 2022).

Over the last ten years, rubber commodity farmers have experienced a downturn (Fitri, 2019). This is because rubber prices are unstable and have reached their lowest point, namely Rp. 5,000/kg. Rubber prices are low not due to foreign price games but rather the very low quality of the rubber (Harahap & Segoro, 2018).

These obstacles make rubber farmers think about changing land functions. The change in rubber commodities to palm oil is because it is considered more specific and profitable (Bou Dib et al., 2018). Judging from the aspect of plants that are no longer suitable, it would be good to convert them to oil palm because oil palm provides large profits and is ideal for the lives of farmers (Elvawati et al., 2019). Many farmers convert rubber commodities to oil palms rather than maintaining rubber plants, even though the rubber plants are approximately 12 years old and are still considered productive. Based on the situation, most farmers convert rubber commodities to oil palm due to rubber production and price factors (Asmarantaka et al., 2013).

Several studies on the conversion of rubber commodities into palm oil in Sanggau Regency (Hengki et al., 2021), West Tanjung Jabung Regency (Utami et al., 2017), Kuantan Singingi Regency (Wulansa, 2020), Aceh Tamiang Regency (Fitri, 2019), while from the Regency Banyuasin (Sihite, 2019) (Hamdani, 2023). Research shows that the selling price of rubber, farmer welfare and technical culture are the leading causes of commodity transfer (Kurnia, 2022) (Ulansari & Syarifuddin, 2022) (Khabib Mustafa, 2020). Research on converting rubber commodities to palm oil in Banyuasin district focuses on commodities productivity and financial analysis.

Research on the conversion of rubber commodities to palm oil in Banyuasin district based on economic impacts has never been reported before. Based on this description, research on converting rubber commodities to palm oil in Banyuasin district was carried out. This research aims to determine and analyze the conversion of rubber commodities to palm oil in Banyuasin Regency based on productivity and financial analysis.

MATERIALS AND METHODS

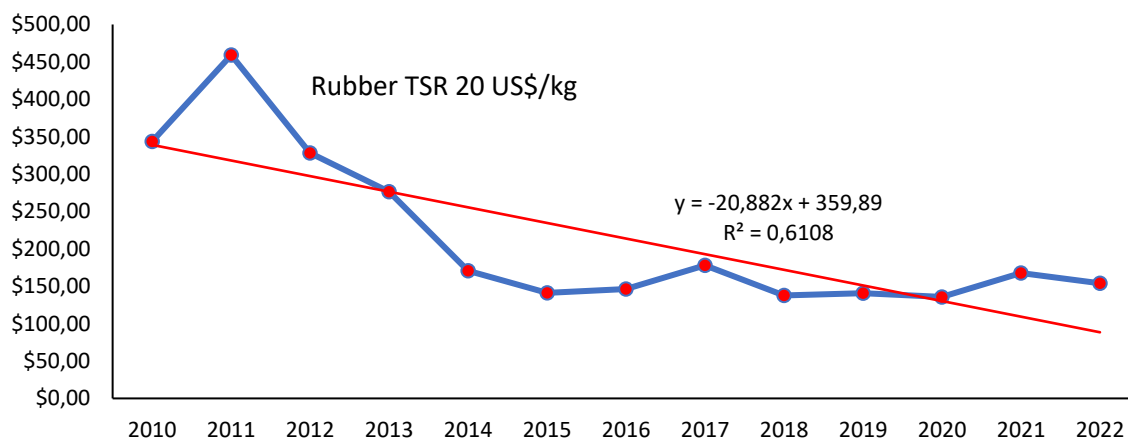
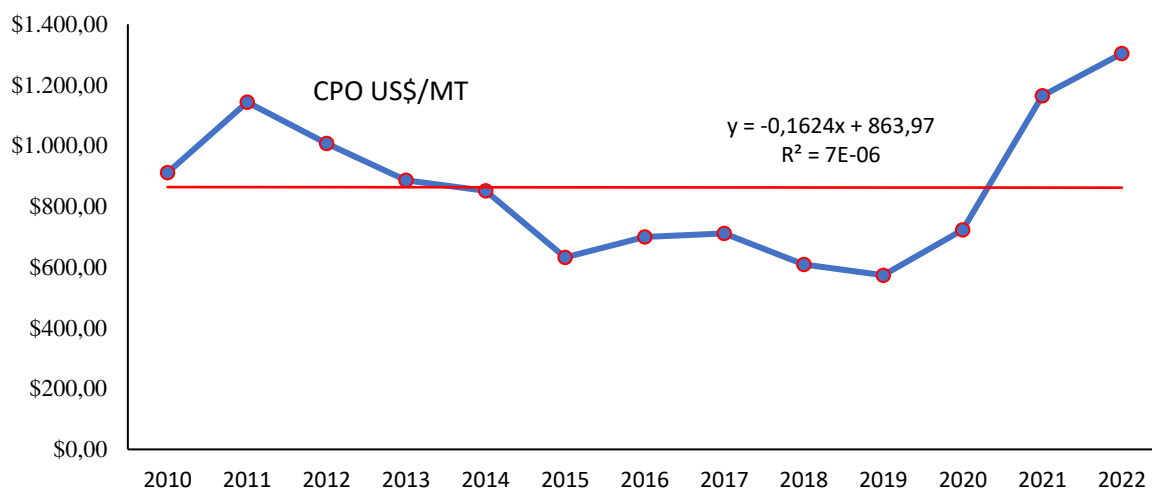
This research was conducted in Banyuasin Regency, South Sumatra, from July to August 2023. The data used were primary data and secondary data. Primary data collection was taken from field observations and interviews with respondents or rubber farmers, palm oil farmers, and farmers who had experienced the conversion from rubber to oil palm using a questionnaire. Secondary data collection comes from publications or data released by relevant agencies to obtain related information.

The research involved quantitative descriptive analysis focusing on rubber and palm oil data's variable price trend data over the last ten years. The data was analyzed to identify significant changes. The productivity of both commodities is measured based on production data per hectare for the last ten years. Financial ratio analysis of both commodities includes comparing production costs, income, and profitability.

RESULTS AND DISCUSSIONS

Commodity price trends

The prices of several superior plantation commodities often fluctuate yearly, influenced by various reasons such as prices of other commodities, market demand, availability of goods, and weather. Commodity prices are the main factor influencing farmers' decisions in cultivating the commodities. Crude Palm Oil (CPO) and rubber price trends for the last ten years can be seen in Figure 1.



Source: (BAPPEBTI, 2023)

Figure 1. Price trend for palm oil and rubber commodities

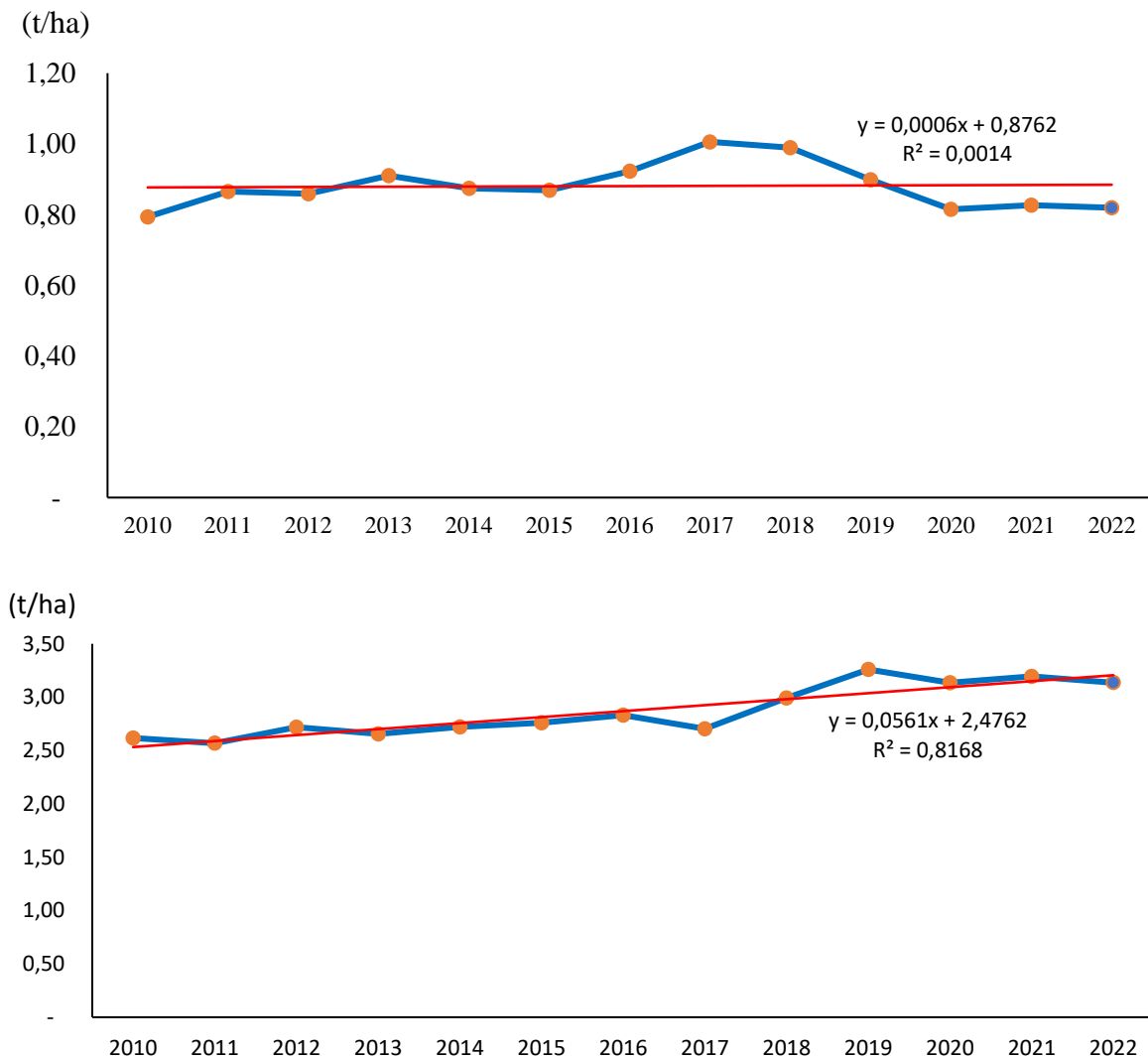
From picture 1, it can be seen that the price trend for palm oil is stable even though it experienced a decline in 2015. However, there was an increase in prices at the end of 2020. This is different from the rubber commodity, which experienced a very significant price decline with a reasonably high price increase in 2011 but experienced a price decline in the following year, reached its lowest point in 2015, and was stuck at that level. There was no significant increase until 2022.

Commodity prices can be a strong reason for farmers to cultivate certain commodities. Farmers tend to choose commodities with high selling prices and can generate good profits. High prices allow farmers to earn more significant income from their businesses. Price stability is also an important consideration. Farmers want to avoid extreme price fluctuations as this can have a negative impact on their income. Commodities with stable prices are usually more attractive (Kurnia, 2022).

There has been a very significant decline in rubber prices over the last ten years, in 2010, the price of rubber reached IDR 20.000/kg, and in 2020, the cost of rubber decreased significantly to IDR 8.000/kg to date. This makes rubber farmers switch their commodities to palm oil because the income from rubber farming cannot meet daily household needs (Sihite, 2019).

Plant productivity

Commodity productivity is the main factor that is the reason for farmers to choose to cultivate certain commodities. Commodity productivity refers to the extent to which a crop or commodity can be produced in a certain unit of land or time. The following are several reasons why commodity productivity is a determining factor in farmer decisions. Commodities with high productivity tend to produce more results in a shorter time. This means that farmers can earn higher income from their crops. Increased productivity can contribute to improving the welfare of farmers and local communities. This can help improve living standards and open up economic opportunities in rural areas. The productivity of rubber and palm oil can be seen in Figure 2.



Source: (Directorate General for Plantation, 2020)

Figure 2. Productivity of palm oil and rubber commodities.

From Figure 2, we can see that the rubber commodity did not increase in productivity, only increase slightly from 2016 to 2018, then returned to stability. While the palm oil commodity slowly and consistently increased in productivity each year, there was only a slight turbulence in 2017, but back to increasing trend.

Cultivation techniques are also a supporting factor in farming activities that can significantly increase productivity. In this case the use of superior seeds (certified and guaranteed), good technical culture in accordance with GAP (Good Agriculture Practice), good environmental management (water

and soil management), and control of plant pest organisms (early warning system) (Monitor, 2021a) (Monitor, 2021b).

Commodity productivity is influenced by the environment, in the research area the weather conditions are actually almost the same, both rainfall and temperature, but the reason why farmers prefer palm oil is that during the rainy season on rubber plantations farmers cannot tap, if farmers do not tap, production will decrease and automatically income will decrease. But for palm oil it doesn't affect on harvesting, if it rains farmers just wait for the rain to stop (Ulansari & Syarifuddin, 2022).

If we look at labor, it is true that palm oil labor is more than rubber, but labor is not really taken into account by farmers when carrying out land conversion. Looking at the technical aspect, rubber farmers are lacking in cultivating both caring for and fertilizing rubber, so the rubber produced by farmers is very low. In contrast to palm oil farmers, palm oil farmers are more diligent in terms of maintenance and fertilization because palm oil farmers want their production results to be better and more satisfying (Hamdani, 2023).

Financial ratio analysis

Financial ratio analysis is carried out as an indicator for assessing the development of a business so that it can continue to survive and ensure that the business is able to develop consistently and promisingly. The following will describe the results of the financial ratio analysis of palm oil and rubber plantations (Table 1).

Table 1. Results of financial ratios analysis for palm oil and rubber commodities

Ratio Analysis	Rubber	Palm oil
Liquidity Ratio		
Current Ratio	2.347	2.426
Quick ratio	2.347	2.426
Cash Ratio	2.347	2.426
Solvability Ratio		
Debt Over Asset Ratio	0.047	0.065
Debt to Equity Ratio	0.049	0.070
Capital over Assets Ratio	0.953	0.935
Activity / Efficiency Ratio		
Total Asset Turnover Ratio	0.090	0.159
Fixed Asset Turnover Ratio	0.126	0.191
Profit on Sales Margin	0.525	0.637
Profitability Ratio		
Return on Investment	0.006	0.060
Return of Equity	0.007	0.064

In terms of the average value of the liquidity ratio, rubber plantations and palm oil plantations have large ratio values. The ratio value of palm oil plantations is higher than rubber plantations. This ratio value shows that palm oil plantations are better to maximize the amount of assets they own to be able to pay current debts such as trade payables and salaries payable (Kotimah et al., 2023).

Regarding the average value of the solvency ratio, rubber plantations and palm oil plantations have a small ratio value. This means that both plantations are in good condition. Thus, the two plantations have sufficient capital to finance their farming operations and are able to cover their

obligations. This ratio value shows that palm oil plantations have more debt than rubber plantations (Wicaksana, 2021).

In terms of the average activity ratio value, rubber plantations and palm oil plantations have small ratio values. This means that both plantations are in poor condition. Thus, both plantations still have to maximize the use of their plantation assets. However, the ratio value of palm oil plantations is higher than rubber plantations. This ratio value shows that palm oil plantations are better able to maximize the number of assets they own to increase the productivity of their plantations (Purwono et al., 2015).

In terms of average profitability ratio values, rubber plantations and palm oil plantations have small ratio values. This means that both plantations are in poor condition. Thus, both plantations still have to increase their plantation production. However, the ratio value of palm oil plantations is higher than rubber plantations. This ratio value shows that palm oil plantations have greater income and are better able to return their investment compared to rubber plantations (Sangkut et al., 2023).

From the calculation of all ratios, palm oil plantations have a better ratio value compared to rubber plantations. This means that the profits obtained from the results of the ratio calculation show that palm oil farmers get more profits compared to rubber farmers. Thus, the income received by palm oil farmers is also greater than rubber farmers in meeting their needs (Halim et al., 2022).

CONCLUSION

The price of rubber has decreased significantly over the last ten years and the price of palm oil has not changed significantly, being the main cause of commodity transfer. Palm oil increased in productivity over the last ten years, but in rubber there has been no increase due to the application of good technical culture to obtain optimal results. Palm oil has a better ratio value compared to rubber, which means that the palm oil business can continue to survive and is able to develop consistently and promisingly.

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