

## THE EFFECT OF RUBBER PRICES AND PRODUCTION ON THE INCOME OF RUBBER FARMERS IN NORTH PADANG LAWAS REGENCY

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### Abstract

The aim and discussion of this research is to determine the influence of prices and labor absorption on latex production on the welfare of the people of Pengirkiran Village, North Padang Lawas Regency. Research data is primary data obtained directly from the first source, either from individuals, such as the results of filling out a questionnaire. This research uses a quantitative descriptive approach with a secondary data analysis (ADS) approach using multiple linear regression analysis methods assisted by SPSS (Statistical Package For Social Science) software 22. The results of the research conducted show that (1) rubber prices have a positive and significant effect on farmers' welfare rubber in Halongonan District, North Padang Lawas Regency. (2) Rubber production has a positive and significant effect on the welfare of rubber farmers in Halongonan District, North Padang Lawas Regency. (3) Rubber prices and production have a significant effect on the welfare of farmers in Halongonan District, North Padang Lawas Regency.

**Keywords:** Farmer Welfare, Rubber Production, Rubber Prices

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### INTRODUCTION

Indonesia is an agrarian country, where the main source of livelihood for its people is agriculture. Agriculture is the largest sector in almost every economy in developing countries. One of the natural rubbers is rubber that comes from nature, which is made from the sap of rubber plants, both *Ficus elastic* and *Hevea brasiliensis* species.

The usefulness of natural rubber in daily life has many benefits. Items that can be made from natural rubber include making shoes, sandals, car tires, motorcycles, and household appliances such as chairs, glue, glue for goods, water hoses, mattresses, as well as stationery and also some sports equipment such as various balls and others.

The price of rubber is a determining factor that can affect the income of rubber farmers. The lower the price of rubber, the lower the income obtained by farmers, and vice versa, the higher the price of rubber, the higher the income of farmers.(Simanjuntak, 2018) When rubber prices are high, rubber farmers will get higher incomes, which will affect their welfare. However, if rubber production is low, rubber farmers will earn lower incomes, which will affect their well-being.(Rosana et al., 2020)

North Sumatra Province as a Province of Rubber Plantation Producing & Development in Indonesia because we can see from the geographical and physical conditions of North Sumatra Province which are very effective and good and profitable to be used as rubber plantation land. People's rubber plantations spread across the North Sumatra Region are one of the sources of livelihood for the rubber farming community, we can see this based on BPS data for North Sumatra Province in 2021, the area of rubber plantations in this province is quite high, which is spread across 33 city districts with an area of 369,392 hectares. The amount of rubber production can be seen from the following table:

**Table 1.** Rubber Plantation Production in North Sumatra Province In 2019-2021

<b>Year</b>	<b>Land Area (Ha)</b>	<b>Production (Tons)</b>
<b>2019</b>	<b>369.391</b>	<b>309.973</b>
<b>2020</b>	<b>369.392</b>	<b>310.016</b>
<b>2021</b>	<b>369.392</b>	<b>310.018</b>

*Source : Central Statistics Agency (BPS) of North Sumatra Province 2021*

From table 1, it is explained that the production of rubber plantations in North Sumatra Province in the last 3 years has increased continuously, but in 2020-2021 there has been an increase in production, but with the same land area, namely in 2021 with a production of 310,018 tons with the same land area in the previous year, and this is different in 2019 which has a slight increase in land area but produces quite significant production from 2019 – 2010 This means that the amount of production with land area is still fluctuating and uncertain. The amount of production depends on the land area, maintenance, fertilizer and climate. (Imsar, 2018)

Rubber prices always fluctuate every year and will affect the income of rubber farmers, where rubber prices are affected by demand. The more demand, the higher the price will be. An imbalance between supply and demand will affect price changes. In addition, Indonesia's natural rubber exports also affect the supply and formation of natural rubber prices in the world market (Yuningtyas et al., 2020).

The price of natural rubber in foreign markets is influenced by several factors, namely demand and supply (exports and reserves), the international political and

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economic situation, exchange rate trends, synthetic rubber prices and global economic growth (Pujiarti et al., 2022). Low rubber prices tend to make farmers lazy to tap their rubber trees. When prices are high, farmers will be diligent in tapping their rubber trees. With the increase in rubber prices, farmers will increase their rubber production (Haloho et al., 2019). Miranda, Lumangkun, and Husni 2015 stated that rubber prices are a determining factor that can affect the income of rubber farmers. The lower the price of rubber, the lower the income obtained by farmers and vice versa, the higher the price of rubber, the higher the income of farmers will increase (Rosana et al., 2020).

The phenomenon that causes the decline in production is stated by Arifin (2001) where the decline in the role of the agricultural sector is due to still relying too much on the availability of agricultural land. If you rely too much on the land, always think that the more land, the more production will increase, this condition causes frequent clearing of new land by burning forests and this is very destructive activities. According to Daniel (2002) in farming, agricultural production factors include several of them, namely land, capital and labor. Furthermore, there are several ways to increase land production, namely by fertilizing and caring so that plants produce more production (Rosmeli & Hastuti, 2019) Then in the process of total farming expenditure related to the combination of input values used or expenditure on the amount of inputs used, while the difference between the gross income of farming and the total expenditure of input inputs of production factors is called net income of farming (Sekartawi, John Law. Dillon, 1985). The problem of rubber price fluctuations is important because it affects the income and welfare of rubber farmers (Purwaningrat et al., 2020). Income is one of the indicators to measure the level of farmers' welfare. In addition to the price of rubber, revenue is also affected by the amount of rubber produced (Putri, 2023), Income level is one of the indicators to be able to improve the welfare of farmer households (Mosher, 1987). Household income will be directly proportional to the welfare of the family so that income is a limiting factor for family welfare (Sembawa Research Institute, Jl Raya Palembang-Pangkalan Balai Km. 29, Post Box 1127, Palembang 30001 et al., 2019).

In North Padang Lawas Regency has its superior commodity in each sub-district, in Halongonan sub-district in particular has the main commodity is rubber plantations where almost 80% of the people in this sub-district have jobs as rubber farmers who bear the hope of the profits of their hard-earned rubber plantations.

In each month the farmers get different profits in each month which even have fluctuating income because they have different prices every month this is due to several determining factors including the reduction in the quality of rubber to the fluctuation of the number of production products that cause the income of farmers to decrease, one of which is the price of rubber which decreases, we can see in table 3 which provides a presentation of the price of rubber per kilograms in each month as follows.

**Table 2.** Rubber Selling Price, Total Production and Total Income of Rubber Farmers in Halongonan District, North Padang Lawas Regency 2021-2023

Month	Year 2021			Year 2022			Year 2023		
	Price (Kg)	Production (Tons)	Total Revenue (Rp)	Price (Kg)	Production (Tons)	Total Revenue (Rp)	Price (Kg)	Production (Tons)	Total Revenue (Rp)
<b>January</b>	7000	215	1.505.000.000	10000	270	2.700.000.000	9000	240	2.160.000.000
<b>February</b>	7000	217	1.519.000.000	10000	272	2.720.000.000	9500	250	2.375.000.000
<b>March</b>	7500	220	1.519.000.000	10000	270	2.700.000.000	9000	230	2.070.000.000
<b>April</b>	8000	230	1.840.000.000	9000	250	2.250.000.000	10000	275	2.750.000.000
<b>May</b>	7500	227	1.702.500.000	8000	247	1.976.000.000	9500	260	2.470.000.000
<b>June</b>	8000	232	1.856.000.000	8000	249	1.992.000.000	9500	263	2.498.500.000
<b>July</b>	8000	238	1.904.000.000	8500	250	2.125.000.000	9000	240	2.160.000.000
<b>August</b>	8000	239	1.904.000.000	8000	250	2.000.000.000	10000	270	2.700.000.000
<b>September</b>	7600	226	1.912.000.000	7500	225	1.687.500.000	9000	250	2.250.000.000
<b>October</b>	8500	239	2.031.500.000	7500	235	1.762.500.000	9500	260	2.470.000.000
<b>November</b>	9000	240	2.160.000.000	7500	237	1.777.500.000	9500	270	2.565.000.000
<b>December</b>	10000	260	2.600.000.000	8000	239	1.912.000.000	9000	260	2.340.000.000

*Source: Results of BPS North Padang Lawas Analysis 2024*

Based on the results of interviews with palm oil farmers in Halongonan sub-district, North Padang Lawas regency, the Price, Total Production and Total Income of All Oil Palm Farmers in each month where in each month has a price that varies quite a bit in each month with a different total production every month which fluctuates very significantly with the distribution flow of rubber sales as follows:

**Figure 1.** Distribution flow of rubber sales



Based on table 2, it is explained that the selling price set is the price issued by the rubber toke / collector to the rubber farmer which means that the selling price from the toke to the factory has an even higher price than the selling price of the farmer to the toke/collector.

In farming, income is very important to pay attention to, according to Boediono (2012) a person's income is influenced by several factors, including: (1) the number of production factors owned that are sourced from savings and inheritance or gifts this year; (2) the unit price for each factor of production, this price is determined by the supply and demand in the market for that factor of production; (3) the results of family members' activities as side jobs. (Basri et al., 2022).

There are several other studies that show results that are not in line with previous research where price and production have a negative and insignificant effect on income, namely research conducted by Gede Risky Pratama, Gusti Wayan Murjana Yasa (Gede

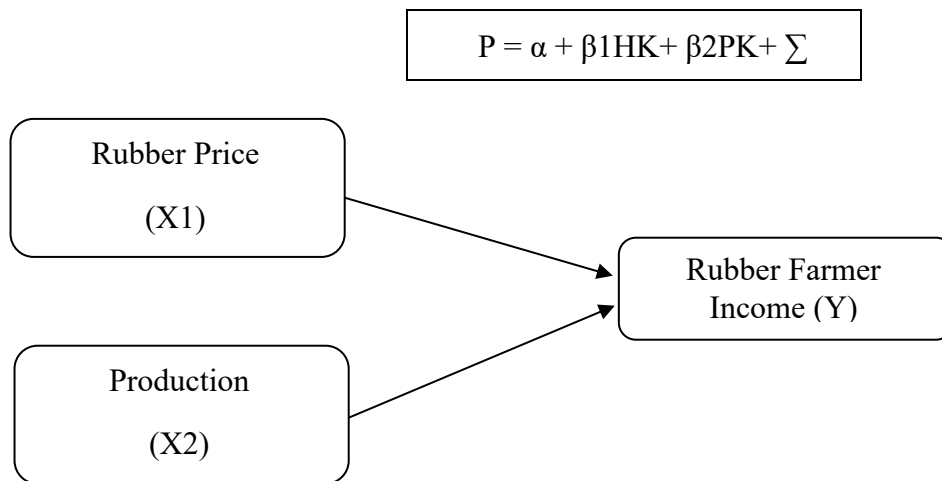
Risky, et al. 2010) Novita Sari (Novita, 2018). Ade Puspitasari, Juliani Pudjowati, Abdul Fattah (Puspitasari et al., 2021). Triyadi Mepriyon (Mepriyon 2019). Efita Pataniho, Sotya Fevriera (Pataniho et al., 2020). Where the results of the study show that price and production have a negative and insignificant effect on income.

Based on the existing Research Gap, it can be concluded that not every empirical event is in accordance with the existing theory. This is strengthened by the existence of a Research Gap in previous studies. The above research shows that there are different influences of price and production variables that are seen as affecting income.

Based on a number of phenomena that have been described in the background above, the researcher is interested in conducting research on the Influence of Price and Rubber Production on the Income of the People of North Padang Lawas Regency

## RESEARCH METHODS

This study uses a descriptive quantitative research method using secondary data, namely based on data on Rubber Selling Price, Total Production and Total Income of Rubber Farmers in Halongonan District, North Padang Lawas Regency 2021-2023 in Halongonan District, North Padang Lawas Regency. This study was analyzed using the multiple linear regression analysis method with the process of using the formula,



**Figure 2.** Framework of Thought.

## RESULT AND DISCUSSION

The variables of this study are as follows:

**Table 3. Research Variables**

Types of Variables	Information	Sign
<b>Independent</b>	Rubber Price	HK

	Rubber Production	HP
<b>Depend on</b>	Community Income	PM

Table 4. Multiple Linear Regression Test Results

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1(Constant)	3.42	5.432		.630	.530
HargaX1	0				
2 ProductionX	.223	.151	.133	1.479	.042
	.626	.121	.467	5.198	.000

Dependent Variable : Income Y

The regression equation model is as follows:

$$Y = a + b_1 \cdot X_1 + b_2 \cdot X_2$$

$$Y = 3.420 + 0,223 \cdot X_1 + 0,626 \cdot X_2$$

## Discussion

### Effect of Price (X1) on the Welfare of Rubber Farmers in Halongonan District

Based on the results of the research obtained on the influence of rubber prices on the welfare of rubber farmers, the results of data analysis in this study show that the selling price has a significant partial influence on the welfare of Broiler farmers in 2015-2017. This finding is in line with Tjiptono's statement (2005:151), that the selling price is a monetary unit or other unit (including other goods and services) that is exchanged in order to obtain the right to own or use a good or service that will affect welfare.

Selling prices theoretically affect the welfare of farmers. This is because income is obtained from the amount of selling price, the higher the selling price obtained, the higher the income/welfare generated by farmers, and vice versa, if the selling price is smaller, welfare will also decrease (Ari Santi et al., 2019). Therefore, prices affect welfare.

This research is in line with research conducted by Muhamad Rizki, Yunita Sopiana (Rizki & Sopiana, 2022). Kartika Sari (Sari, 2023) The result of this study is that there is a positive and significant influence of prices on the welfare of farmers.

### The Effect of Production (X2) on Community Income in Halongonan District

The results of data analysis in this study show that production has a significant partial influence on people's income. This can be interpreted that the amount of production affects the income of farmers. Because the more rubber production produced by rubber farmers in Halongonan District, the higher the welfare/income of rubber farmers in Halongonan District (Muhyiddin, t.t.). This is also supported by the opinion of Mubyarto 389 (1995), which states that the increase in income is determined by the amount of production that can be produced by one farmer (Lamusa & Laksmayani, t.t.). This result is in accordance with the theory put forward by Ken Suratiah which states that when viewed in terms of output, if the demand for production is high, the price at the farmer level will also be high so that at the same cost the farmer will also get a high income. On the other hand, if farmers succeed in increasing production, but prices fall, farmers' income will also decrease (Rosmiati, 2019).

This research is in accordance with research conducted by Besti Laborit, Sri Ruwanti Rizki Yuli Sar (Laborita et al., 2021). Dorce Novita Kadim, Vecky AJ. Masinambouw, Jecline I. (Kadim et al., 2017). Safuan (Safuan, 2017) Iis Miati (MIati, 2018). Gusti Ayu Bintang Pradnyawati (Pradnyawati & Cipta, 2021). Where the results of the study show that production has a positive and significant effect on farmers' income.

### **Effect of Price (X1) and Production (X2) Community Income (Y)**

The results of data analysis in this study show that price and production simultaneously affect farmers' income. The price will determine how much revenue will be earned if one product is sold, and the amount of production that will affect revenue (Yahya et al., 2022). So it can be concluded that these two variables together affect the income of rubber farming communities in Halongonan District, North Padang Lawas Regency.

This research is in line with research conducted by Anshori Ramadhan (Ramadhan, t.t.). Siti Futihaturroziqoh (Futihaturroziqoh, t.t.). Anis Rosita (Rosita, t.t.). Fiki Efendi, Ansofino, Yolamalinda (Efendi, t.t.). Nursakinah (Nursakinah, 2020). Where the results of the study show that there is a positive and significant influence between price and production variables on people's income. It can be concluded that these two variables together affect people's income. In the sense that if these two variables decrease, it will automatically cause a low income of the rubber farming community.

### **CONCLUSION**

Based on the results of research that has been carried out on the influence of rubber prices and production on Community Income in Halongonan District, North Padang Lawas Regency, the following conclusions can be drawn:

1. The result of the regression coefficient of the price variable ( $\beta_1$ ) is 0.223, we can read that if the value of the price variable increases by 1 point, the variable of Community Income will increase by 0.223, assuming that if the production variable remains constant. This shows that simultaneously price variables can affect people's income.
2. Based on the result of the production coefficient ( $\beta_2$ ) of 0.626, it can be interpreted that if the value of the production variable increases by 1 point, the variable of Public Income will increase by 0.626, assuming that the price variable remains

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constant. This shows that simultaneously production variables can affect people's income.

Based on the t-test, the result was obtained that the Constant value of the Community Income variable was 3,420, meaning that 34% of the Community Income variable was influenced by other variables besides price and production variables. This shows that people's income can also affect other variables besides price and production.

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