



FEASIBILITY ANALYSIS OF OIL PALM FARMING IN RESPONSE TO CHANGES IN FRESH FRUIT BUNCH (FFB) PRICES IN MABAR VILLAGE, BANGUN PURBA DISTRICT, DELI SERDANG REGENCY

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ABSTRACT

Oil palm is one of the most important plantation commodities contributing significantly to national economic development and rural livelihoods. For smallholder farmers, oil palm serves as a primary source of income whose sustainability is strongly influenced by fluctuations in Fresh Fruit Bunch (FFB) prices. Changes in FFB prices over recent years have affected farmers' ability to maintain and manage their farming activities. This study aimed to analyze the feasibility of oil palm farming in relation to changes in FFB prices in Mabar Village, Bangun Purba District, Deli Serdang Regency. The research employed a survey method with a descriptive quantitative approach. The study area was purposively selected because it represents one of the major smallholder oil palm production centers in Deli Serdang Regency. A total of 60 farmers were selected as respondents from a population of 150 farmers using the Slovin formula. Data were collected through observation, interviews, and documentation and analyzed descriptively. The results indicate that most farmers are within productive age groups, possess considerable farming experience, and manage small- to medium-scale plantations. Changes in FFB prices influence plantation management activities and farmers' business decisions. Despite price fluctuations, farmers continue cultivating oil palm because it remains an important source of livelihood. Therefore, oil palm farming in Mabar Village remains feasible and continues to offer promising prospects for smallholder farmers.

Keywords: oil palm, FFB price, farming feasibility, smallholders, plantation farming.

INTRODUCTION

Oil palm (*Elaeis guineensis* Jacq.) is one of the plantation commodities that plays a strategic role in the Indonesian economy. In addition to contributing foreign exchange earnings through export activities, this commodity also contributes to increasing community income, creating employment opportunities, and promoting rural development. The continuous growth of the oil palm industry indicates that this commodity remains one of the leading sectors in national agricultural development. North Sumatra Province is one of the largest oil palm-producing regions in Indonesia. Most of the plantations developed in this region are managed by smallholder farmers who rely on oil palm cultivation as their primary source of income. The existence of smallholder plantations not only contributes to national production but also plays a significant role in improving the welfare of local communities. Mabar Village, located in Bangun Purba District, is one of the areas where many residents depend on the oil palm plantation sector for their livelihoods. Favorable agroecological conditions and the availability of market access have enabled this commodity to develop quite well and become the primary choice for the community in carrying out agricultural business activities (BPS 2025).

Nevertheless, the sustainability of oil palm farming cannot be separated from various challenges, one of which is fluctuations in the price of Fresh Fruit Bunches (FFB). FFB prices are highly volatile as they are influenced by various factors, both domestic and international. These price changes can affect farmers' ability to carry out their farming activities and influence decisions related to plantation management. For smallholder farmers, changes in FFB prices often serve as an important indicator in assessing the sustainability of their farming operations. When prices increase, farmers tend to be more active in maintaining their plantations and expanding their businesses. Conversely, when prices decline, some farmers make adjustments to their farming activities in order to maintain the continuity of their operations. Based on these conditions, research is needed to provide an overview of the feasibility of oil palm farming in the face of fluctuations in FFB prices. This study is important to determine the extent to which smallholder plantation businesses can still be sustained and how farmers adapt to the dynamics of changing prices (Perkebunan 2025).

RESEARCH METHODOLOGY

This research was conducted in Mabar Village, Bangun Purba District, Deli Serdang Regency. The research location was selected purposively, considering that the area is one of the active smallholder oil palm plantation centers that continues to produce. The research employed a survey method with a descriptive quantitative approach. This approach was used to obtain an overview of farmers' characteristics and the conditions of oil palm farming related to changes in FFB prices. The study population consisted of all smallholder oil palm farmers in Mabar Village, totaling 150 individuals. The sample size was determined using the Slovin formula, resulting in 60 respondents. Samples were selected using a purposive sampling technique based on criteria established in the study. Primary data were collected through direct interviews using questionnaires, while secondary data were obtained from relevant institutions, scientific publications, statistical reports, and other relevant reference sources. The collected data were then analyzed descriptively to provide an overview of farmers' characteristics and the feasibility conditions of oil palm farming in facing changes in FFB prices.

RESULTS AND DISCUSSION

Respondent characteristics provide a general overview of the socio-economic conditions of the farmers who served as the subjects of this study. These characteristics include age, level of education, farming experience, and the size of land owned by the farmers. Respondent characteristics influence farmers' ability to manage their farming operations, make business decisions, and adopt agricultural technologies that can improve the productivity and income of oil palm farming.

Age

The age distribution of respondents shows that the majority of oil palm farmers in Mabar Village are within the productive age group. This condition indicates that farmers still possess adequate physical capability to carry out various cultivation activities, ranging from crop maintenance to harvesting processes. Productive age is also generally associated with farmers' ability to make business decisions and adapt to changing market conditions, including fluctuations in FFB prices over time.

The presence of farmers within the productive age range serves as a supporting factor for the sustainability of oil palm farming, as cultivation activities require considerable labor and skills. In addition, farmers in the productive age group generally have a strong

motivation to maintain and develop their plantation businesses as a source of family income. Therefore, the age structure of the respondents can be considered a form of social capital that supports the sustainability of oil palm farming in the study area.

Table 1. Characteristics of Oil Palm Farmers by Age Group.

No	Age Category (Years)	Number of Farmers	Percentage (%)
1	35-44	10	16,67
2	45-54	26	43,33
3	55-64	16	26,67
4	≥65	8	13,33
Total		60	100

The majority of farmers are in the 45–54 years age group. This condition indicates that the farmers are still within the productive age range, enabling them to possess adequate physical capability and experience in managing oil palm farming activities.

Education

The educational level of farmers plays an important role in shaping their ability to receive and understand information related to farming activities. The results of the study indicate that most respondents have completed formal education up to the secondary level. This condition provides farmers with better opportunities to understand information regarding cultivation techniques, the use of production inputs, and developments in plantation commodity prices.

Although formal education is not the sole factor determining business success, it can help farmers improve their managerial skills and decision-making abilities. Farmers with higher levels of education tend to be more receptive to innovations and information related to increasing productivity and business efficiency. Therefore, the educational level of the respondents can be considered one of the factors supporting the successful management of oil palm farming in Mabar Village.

Table 2. Characteristics of Oil Palm Farmers by Educational Level

No	Education Level	Number of Farmers	Percentage (%)
1	SD	12	20,00
2	SMP	17	28,33
3	SMA	31	51,67
Total		60	100

The majority of farmers have completed senior high school education. This relatively good level of education facilitates farmers in receiving and understanding agricultural information and technologies that can enhance the productivity of their farming operations.

Farming Experience

Farming experience reflects the level of expertise and knowledge that farmers have acquired in managing oil palm plantation businesses. Experience is an important asset because it enables farmers to understand various conditions encountered in the field, both in relation to cultivation techniques and the marketing of harvested products.

Based on the results of the study, most respondents have been engaged in oil palm cultivation for a relatively long period.

Extensive farming experience provides farmers with distinct advantages, as they have gained a thorough understanding of crop requirements, appropriate fertilization schedules, maintenance techniques, and the management of various issues that may affect production. Experienced farmers are also generally better able to adjust their management strategies when facing fluctuations in FFB prices or increases in production costs.

Furthermore, long-term experience can enhance farmers' ability to make decisions regarding the more efficient use of production factors. Therefore, the farming experience possessed by the respondents is one of the factors that supports the success of oil palm farming in Mabar Village.

Table 3. Characteristics of Oil Palm Farmers by Farming Experience Group.

No	Farming Experience (Years)	Number of Farmers	Percentage (%)
1	1-10	12	20,00
2	11-15	20	33,33
3	16-20	18	30,00
4	>20	10	16,67
Total		60	100

Extensive farming experience enables farmers to manage their plantations more effectively and efficiently.

Land Area

Land area is one of the most important production factors in oil palm farming activities. The size of the land owned by farmers influences the number of crops cultivated, the volume of production generated, and the level of income earned by the farmers. Based on the research findings, the land area owned by respondents varies according to their economic conditions and land ownership status.

Most respondents fall into the category of smallholder plantations with relatively limited land holdings. This condition is consistent with the characteristics of smallholder oil palm plantations in Indonesia, which are generally managed independently by farmers on a relatively small scale. Nevertheless, the land owned by these farmers is still capable of generating sufficient production and income to support their households.

The larger the cultivated land area, the greater the opportunity for farmers to achieve higher FFB production. However, an increase in land area is also accompanied by higher production costs and labor requirements. Therefore, the success of farming operations is determined not only by land size but also by the farmers' ability to manage production factors effectively and efficiently in order to generate optimal profits.

Table 4. Characteristics of Oil Palm Farmers by Land Area Group.

No	Land Area (Ha)	Number of Farmers	Percentage (%)
1	1,0–2,9	24	40,00
2	3,0–4,9	15	25,00
3	5,0–6,9	13	21,67
4	≥7,0	8	13,33
Total		60	100

The average land area owned by farmers is 3.98 hectares. This indicates that oil palm plantation businesses in Mabar Village can be classified as small- to medium-scale smallholder plantations.

The Effect of Changes in Fresh Fruit Bunch (FFB) Prices on the Feasibility of Oil Palm Farming Operations

Changes in FFB prices are one of the external factors that influence the sustainability of oil palm plantation businesses. Based on interviews with respondents, fluctuations in FFB prices affect farmers' decisions regarding plantation management and business planning.

When FFB prices increase, farmers tend to be more optimistic about their businesses and intensify plantation maintenance activities. Conversely, when prices decline, some farmers make adjustments to their farming activities in order to maintain household economic stability.

Nevertheless, the majority of respondents continue to maintain oil palm plantation farming as their primary source of livelihood. This indicates that oil palm remains an economically valuable commodity capable of supporting farmers' household needs. In addition, farmers' experience and the existence of a relatively stable market serve as supporting factors for the sustainability of smallholder plantation businesses in the study area.

CONCLUSION

The characteristics of oil palm farmers in Mabar Village indicate that the majority of respondents are within the productive age group, possess considerable farming experience, and manage small- to medium-scale smallholder plantations. Changes in the price of Fresh Fruit Bunches (FFB) have influenced plantation management activities and business decision-making among farmers. However, the price fluctuations that have occurred have not caused farmers to abandon oil palm farming. This condition indicates that oil palm farming in Mabar Village still has promising prospects and remains a viable source of livelihood for the local community.

RECOMMENDATIONS

Oil palm farmers are expected to improve the efficiency of production input utilization so that farming costs can be controlled when FFB prices decline. The government and relevant institutions need to strengthen extension services, technical assistance, and the provision of more transparent price information to help farmers make more informed business decisions. In addition, efforts are needed to maintain price stability and expand market access so that the sustainability of smallholder oil palm plantation businesses can be preserved and continue to provide optimal economic benefits for rural communities.

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