

ANALYSIS OF THE DECLINE OF COCONUT PRODUCTION FOR THE FARMERS' ECONOMY IN DURIAN PAYUNG VILLAGE

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Abstract

Coconut is one of the important agricultural commodities in Indonesia that contributes significantly to the country's economy and the livelihood of farmers. However, in recent years, coconut production in Durian Payung village has experienced a worrying decline. This research aims to analyze the factors that have caused the decline in coconut production and its impact on the coconut farmers' economy in Durian Payung. The methods used in this study include surveys, interviews, and statistical data analysis related to coconut production from various available sources. The research results show that several factors have led to the decrease in coconut production in Indonesia, including climate change, pest and disease attacks, lack of coconut land maintenance, and the low adoption of modern technology in coconut cultivation. The impact of the declining coconut production on the coconut farmers' economy is significant. Farmers face a drastic decline in income due to the decrease in coconut production, which negatively affects their standard of living and well-being. Additionally, the coconut processing industry and coconut trade are also affected due to limited coconut supply.

Keywords : coconut production ¹ ; causes of decline ² ; farmer's economy ³

Abstract

Coconut is one of the important agricultural commodities in Indonesia which makes a significant contribution to the country's economy and the livelihoods of farmers. However, in recent years, coconut production in Durian Payung village has experienced an alarming decline. This research aims to analyze the factors that cause the decline in coconut production and its impact on the economy of coconut farmers in Durian Payung. The methods used in this research include surveys, interviews and analysis of statistical data related to coconut production from various available sources. The research results show that several factors have caused the decline in coconut production in Indonesia, including climate change, pest and disease attacks, lack of maintenance of coconut land, and the low application of modern technology in coconut cultivation. The impact of declining coconut production on the economy of coconut farmers is very significant. Farmers are facing a drastic reduction in income due to the decline in coconut production, which has a negative impact on their living standards and well-being. Apart from that, the coconut processing industry and coconut trade are also affected due to limited coconut supplies. Based on these findings, it is recommended that the government and relevant stakeholders take strategic steps to overcome this problem. Efforts to improve coconut land management, control of pests and diseases, as well as the application of modern technology in coconut cultivation must be prioritized.

Key words : coconut production ¹ causes of decline ² ; farmer economy ³

INTRODUCTION

Durian Payung Village, located in Sungai Geringging District, Padang Pariaman Regency, is one of the areas that relies on coconut production as the main source of income for farmers. However, in recent years, there has been a significant decline in coconut production in this village. Analysis of the causes of the decline in coconut production and its impact on the economy of farmers in Durian Payung Village is important to study and understand.

Analysis of the causes of the decline in coconut production is the first step in finding solutions to overcome this problem. Several factors that may be causing the decline in coconut production include climate change, pest and disease attacks, changes in planting patterns, and low soil quality. Climate changes such as increasing temperatures or unstable rainfall can have a negative impact on the growth of coconut trees. Pest and disease attacks such as coconut stem rot or mealybug attacks can also disrupt coconut growth and productivity (Irfan, 2016). Apart from that, changes in planting patterns that are not optimal and lack of proper care can also affect coconut production (Chisyashita, 2021). Soil quality factors such as high acidity or nutrient deficiencies can also play a role in reducing coconut productivity (Handayanto et al., 2017).

The impact of decreasing coconut production has significant economic consequences for farmers in Durian Payung Village (Rahman, 2018). As the main source of income, a decrease in coconut production will have an impact on the income of farmers who depend on this plant. Lack of coconut production can reduce farmers' income, result in difficulties in meeting daily needs, and increase the risk of poverty (Purnama, 2023). Apart from that, this negative impact can also have an impact on the overall economic stability of the village, because low coconut production can reduce village revenues from the agricultural sector (Abidin, 2021).

Therefore, analyzing the causes of the decline in coconut production and understanding its impact on the economy of farmers in Durian Payung Village is important. By understanding the factors that influence the decline in coconut production, steps can be taken to reduce the negative impact and improve the welfare of farmers (Tanjung, 2020). Efforts such as introducing coconut varieties that are more resistant to pests and diseases, improving agricultural practices, using appropriate fertilizers, and good soil management can help overcome this problem (Susilawati & Nursyamsi, 2014). Thus, this analysis provides a strong basis for developing effective strategies to overcome the decline in coconut production and improve the economic conditions of farmers in Durian Payung Village.

LITERATURE REVIEW

Environmental Factors and Climate Change:

Research by Sudarmo (2018) states that climate change and environmental factors such as floods, drought and pest attacks have contributed to the decline in coconut production in several areas, including Durian Payung Village. Changes in rainfall patterns and extreme temperatures can disrupt the growth of coconut trees and reduce plant productivity, thereby having a negative impact on coconut farmers' income.

Land Use Change:

A study by Setiawan (2019) noted that changes in land use in Durian Payung Village, such as the conversion of coconut land into housing or industry, have resulted in a reduction in the area of coconut farming land. As a result, the amount of coconut production has decreased because the availability of land for planting coconuts is increasingly limited.

Lack of Maintenance and Agricultural Technology:

Research by Rahayu (2020) shows that lack of maintenance and application of modern agricultural technology can cause a decline in coconut productivity. Traditional farming practices and lack of knowledge about effective fertilization techniques and pest control can stunt coconut growth and lead to low production.

Economic Crisis and Unstable Markets:

A study by Wijaya (2017) noted that the economic crisis and price fluctuations on the world market could have a negative impact on the economy of coconut farmers in Durian Payung Village. When coconut prices fall, farmers may experience difficulty in meeting their subsistence needs and investing in increasing agricultural production.

Impact on Farmers' Economy in Durian Payung Village:

Decreasing Farmer Income:

The decline in coconut production means that farmers' incomes also decrease. When coconut production decreases, farmers will face difficulties in selling their harvest and experience a decrease in income, which in turn can affect the economic welfare of farming families.

Livelihood Instability:

Lack of income from coconut farming can cause instability in the livelihoods of farmers in Durian Payung Village. Some farmers may be forced to look for additional work or switch to other sectors to make ends meet, which could disrupt household economic stability.

Dependency on Other Sources of Income:

A decline in coconut production may cause farmers to rely on other sources of income that may be inconsistent or less profitable. This can affect the economic resilience of farmers in facing economic and social challenges.

Inability to Invest in Agricultural Development:

The impact of declining coconut production could also impact farmers' ability to invest in developing their agriculture. With limited income, farmers may find it difficult to purchase superior seeds, fertilizer, or modern equipment that can increase agricultural productivity and efficiency.

The literature review above highlights several causes of the decline in coconut production in Durian Payung Village and its impact on the farmer's economy. In order to increase the welfare of farmers and improve the economic situation, comprehensive efforts are needed from the government, industry players and local communities to overcome these challenges, including

through sustainable agricultural development programs and support for the application of modern technology.

METHOD

This research uses a qualitative research approach with a case study approach to investigate the analysis of the causes of the decline in coconut production and its impact on the economy of farmers in Durian Payung Village, Sungai Geringging District, Padang Pariaman Regency, in 2023. This research method involves several stages, namely observation, interviews in-depth, and study interviews.

Observation:

This research began with field observations in Durian Payung Village and its surroundings. This observation aims to understand field conditions, identify environmental changes, and see firsthand the coconut farming activities carried out by farmers in the area.

Deep interview:

After observation, the researcher conducted in-depth interviews with several informants selected purposively. The informants consisted of 2 regular informants, 2 supporting informants, and 1 key informant. The usual informants are coconut farmers who have direct experience in coconut farming practices in Durian Payung Village. Supporting informants are related parties such as community leaders or government officials who have knowledge of agricultural and economic conditions in the village. Key informants are individuals or groups who have a significant influence on agricultural activities in the area.

Study Interview:

Apart from in-depth interviews with local informants, researchers also conducted study interviews with agricultural and economic experts in the Padang Pariaman area or other related institutions. The study interviews aimed to obtain expert perspectives on the factors influencing coconut production and their impact on the economy of farmers in the area.

Triangulation:

To verify the validity of the research results, researchers used source triangulation, time triangulation, and method triangulation. Source triangulation was carried out by comparing data obtained from local informants with data obtained from agricultural and economic experts. Time triangulation is carried out by comparing research results over a certain time period to see changes that occur in coconut production and the farmer's economy. Method triangulation was carried out by comparing the results of analysis from observations, in-depth interviews and study interviews to obtain a more comprehensive picture.

Data analysis:

Data obtained from interviews and observations were processed manually. Researchers carried out data classification and reduction to identify the main themes related to the causes of the decline in coconut production and its impact on the economy of farmers in Durian Payung Village. The results of this data analysis are then presented in the form of words or scientific stories to clarify research findings.

This research method was designed to provide an in-depth understanding of the condition of coconut farming in Durian Payung Village and how declining production can affect the farmer's economy. With a qualitative approach and case study approach, it is hoped that this research can provide a more comprehensive and in-depth picture of this problem.

RESULTS AND DISCUSSION

The decline in coconut production in Durian Payung Village has had a significant impact on the economy of farmers in the area. Several analyzes of the causes of the decline in coconut production and its impact on the economy of farmers in Durian Payung Village include: First, diseases and pests, namely diseases such as coconut jaundice, fruit rot, and pests such as coconut beetles can be the cause of the decline in coconut production. These diseases and pests can infect coconut trees and reduce the quality and quantity of production. The impact is that farmers experience financial losses due to reduced harvest yields. Diseases and pests in coconuts can have a significant impact on farmers' production and income. Examples of diseases and pests that can cause a decrease in coconut production: Coconut yellow disease is Coconut yellow disease caused by phytoplasma infection, which is a microorganism that can spread through intermediary insects such as aphids.

This disease causes coconut leaves to turn yellow and dry, thus disrupting the photosynthesis process and reducing coconut fruit production). Farmers who experience coconut jaundice infection will experience a significant reduction in crop yields, causing large financial losses. An example is in Durian Payung Village, farmers observed that a number of coconut trees had yellowing leaves and fruit production had decreased drastically. After diagnosis, it turned out that the trees were infected with coconut yellow disease. As a result, farmers in the village experienced losses because their income decreased due to a significant decline in production. Fruit rot on coconuts can be caused by various types of pathogens, such as fungi or bacteria.

This disease can attack coconuts that are still on the tree or that have been harvested. Fruit rot causes coconuts to rot, turn brown or black, and are unfit for consumption or sale. Farmers who face fruit rot problems will experience financial losses because most of the harvest becomes worthless. Example: Farmers in Durian Payung Village reported that a number of the coconuts they harvested had significant fruit rot. This was caused by a fungal infection that spread in their coconut plantations. As a result, most of the harvested coconuts cannot be sold or processed into value-added products, so farmers experience significant financial losses. Coconut beetles are pests that cause damage to coconut trees and their fruit. Adult beetles bore into coconut trunks and produce larvae that feed on the inner tissue of the trunk. As a result of coconut beetle attacks, coconut trees become weak, fruit production decreases, and can even cause tree death. Farmers who face coconut beetle attacks will experience losses due to reduced production and damage to their coconut trees. Example: Farmers in Durian Payung Village reported significant coconut beetle attacks on their coconut trees. This attack causes coconut stems to become damaged and results in

fruit production decreasing drastically. Farmers have to incur additional costs to combat coconut beetle attacks and replace damaged trees, reducing their income.

In all these examples, diseases and pests that attack coconuts reduce the production and quality of coconuts. This has an impact on farmers' income because the harvest results are reduced or worthless. Farmers have to pay additional costs for disease and pest control, as well as the maintenance needed to restore optimal coconut production.

Second, climate change is a change in weather which includes irregular rain patterns, high temperatures and drought, which can affect coconut production. Coconut trees require the right climatic conditions for optimal growth and production. If climatic conditions are not suitable, coconut production can decrease significantly. Climate change has a significant impact on coconut production. Coconut trees need consistent and suitable climatic conditions in order to grow well and produce quality fruit.

Some examples of the impact of climate change on coconut production are as follows: Irregular rain patterns: Coconuts require an adequate water supply for optimal growth and production. If rain patterns become irregular, such as fluctuating rainfall or longer dry periods, coconut trees can experience drought and water stress. As a result, coconut growth and production can decrease significantly. Example: In Durian Payung Village, climate change has caused irregular rain patterns in recent years. Rainfall has become inconsistent, with shorter wet seasons and longer dry seasons. This results in the soil becoming dry and the coconut trees experiencing a lack of water. Coconut production in the village has decreased significantly due to the prolonged drought. High temperatures: Extreme temperatures, especially temperatures that are too high, can have a negative impact on coconut growth and production. Coconut grows well in moderate temperatures and not too hot. If temperatures increase significantly, coconut trees can experience thermal stress and reduce their ability to produce fruit. Example: In some areas where temperatures increase drastically due to climate change, such as prolonged hot temperatures during the summer, coconut production experiences a significant decline. Coconut trees experience thermal stress and cannot function optimally in conditions where temperatures are too high.

A theory that can be related to the impact of climate change on coconut production is the "Sustainable Agriculture Theory". This theory suggests that in facing climate change, agriculture must adapt and be sustainable by considering the environment and natural resources. In this context, farmers in Durian Payung Village need to adopt sustainable agricultural practices that can reduce the impact of climate change, such as using efficient irrigation systems, wise planting scheduling, and selecting coconut varieties that are resistant to temperature and drought. In addition, the theory of "Resilience Theory" can also be relevant. This theory suggests that agricultural systems and farming communities need to have the capacity to adapt and recover from external disturbances or changes. In this context, farmers in Durian Payung Village need to develop capacities and strategies to deal with climate change, such as diversifying income sources, investing in infrastructure that can reduce vulnerability to climate change, and supporting policies that protect and support sustainable agriculture.

Third, aging coconut trees is a factor that can cause a decline in coconut production. Old coconut trees tend to have decreased productivity due to the natural aging process that occurs in the tree. Some examples and ways to deal with aging coconut trees in Durian Payung Village are as follows: Decreased productivity. Old coconut trees generally have slower growth and produce less fruit than younger coconut trees. This is caused by factors such as a decrease in photosynthetic

activity and a decrease in the tree's ability to absorb nutrients. As a result, farmers will experience a decrease in income due to low production. Example: In Durian Payung Village, several farmers reported that their old coconut trees were producing less fruit and decreasing quality.

Overall coconut production in the village is declining as most of the trees reach old age. Rejuvenation of coconut trees: One way to overcome aging coconut trees is to rejuvenate or replace old coconut trees with new seedlings. Farmers can choose coconut seeds that are high quality and resistant to disease or pests. By rejuvenating, farmers can ensure that there are coconut trees that are productive in the long term. Example: Farmers in Durian Payung Village are rejuvenating their coconut plantations by replacing a number of old coconut trees with new coconut seedlings. Within a few years after rejuvenation, they saw a significant increase in coconut production due to the presence of younger, more productive coconut trees. Good maintenance, Apart from rejuvenating, farmers need to carry out good maintenance of existing coconut trees. Good maintenance includes providing sufficient fertilizer, proper watering, regular pruning, and protection against pests and disease. With good maintenance, old coconut trees can remain productive for a longer period of time. Example: Farmers in Durian Payung Village apply good maintenance practices to their old coconut trees. They apply fertilizer regularly, provide adequate watering, and monitor the health condition of the trees. By carrying out good maintenance, they have managed to maintain relatively stable coconut production on old trees. In dealing with aging coconut trees, it is important for farmers in Durian Payung Village to recognize old trees and take appropriate action, either by rejuvenating them or by providing good maintenance. This will help maintain optimal coconut production and support the farmer's economy in the long term.

Fourth, lack of good maintenance and management of coconut plantations can be a factor causing a decrease in production (Siregar & Rizkiansyah, 2022). Some examples and ways to overcome this problem are as follows: Lack of fertilization. Fertilizer is an important source of nutrients for the growth and productivity of coconut trees. Lack of fertilization can result in nutritional deficiencies and stunted growth, resulting in decreased coconut production. Example: In Durian Payung Village, farmers may face the problem of decreasing coconut production due to lack of adequate fertilization. The soil in these coconut plantations may lack important nutrients such as nitrogen, phosphorus, and potassium, which has a negative impact on coconut growth and production.

How to prevent this: Farmers need to carry out regular soil analysis to determine the nutritional needs of coconut plants. Based on this analysis, proper fertilization can be done by providing organic fertilizer or artificial fertilizer on a scheduled basis according to the plant's needs. Regular and appropriate fertilization can increase soil fertility and coconut tree productivity. Inadequate irrigation: Coconuts require an adequate water supply for optimal growth and production. Lack of adequate irrigation can cause drought in coconut trees and hinder fruit production. Example: If farmers in Durian Payung Village do not have a good irrigation system or if the water supply is insufficient, coconut trees may experience drought and produce less fruit.

To prevent this, farmers need to ensure that an adequate irrigation system is available, whether through the use of drip irrigation, irrigation channels or infiltration wells. It is also important to maintain soil moisture by managing good drainage and carrying out appropriate watering according to the needs of coconut plants. Ineffective pest control, Pests such as coconut beetles or other insects can damage coconut trees and reduce fruit production. Lack of effective pest control can cause losses in coconut production. Example: If farmers in Durian Payung Village

do not carry out proper pest control, coconut beetles or other pests can damage coconut stems, leaves or fruit, thereby reducing the production and quality of coconuts.

To prevent this, farmers need to carry out regular monitoring of their coconut plantations to identify signs of pest and disease attacks. If an infestation is detected, farmers need to take appropriate control measures, such as using appropriate natural or chemical insecticides, pruning infected parts, or adopting cultivation methods that can prevent pest attacks. By improving coconut plantation maintenance and management practices, farmers can optimize their coconut production. This involves proper fertilization, adequate irrigation, and effective pest control. Carrying out regular monitoring and maintenance will help farmers identify potential problems early and take necessary preventative steps.

Impact on Farmers

First , decrease in income: A decrease in coconut production will have a direct impact on farmers' income. If harvest yields decrease, income from selling coconuts will decrease, so farmers will experience difficulty in meeting their daily needs. *Second* , economic instability: A decrease in coconut production can cause economic instability in Durian Payung Village. Coconut may be one of the main commodities that supports the village's economy. If coconut production decreases significantly, income and economic activity in the village will also be affected. *Third* , Uncertainty of the future: A decline in coconut production can create uncertainty for farmers regarding their future. If coconut production continues to decline, farmers may find it difficult to rely on coconuts as their main source of income. This can encourage farmers to look for alternative livelihoods or find solutions to increase coconut production.

The theory that can be used in this context is "Supply and Demand Theory". This theory explains that if the supply of a good or commodity decreases (in this case coconut production), while demand remains stable or increases, then the price of that good tends to rise. In this context, a decrease in coconut production can cause coconut prices to rise. However, this can also be an opportunity for farmers who can still produce coconuts in sufficient quantities to obtain higher prices and increase their income.

CONCLUSION

From the analysis of the causes of the decline in coconut production and its impact on the economy of farmers in Durian Payung Village, there are several influencing factors, including disease and pests, climate change, aging coconut trees, and lack of good maintenance and management of coconut plantations.

The conclusion section must answer the objectives of the research. The conclusion is written concisely and clearly in one paragraph (without numbering). If necessary, writing suggestions is still allowed in another paragraph in the conclusion chapter.

Coconut jaundice, fruit rot, and coconut beetle attacks can reduce the production and quality of coconuts. Climate changes, such as irregular rain patterns and high temperatures, can also affect coconut production. Aging coconut trees causes decreased productivity, while lack of maintenance and management can stunt growth and reduce yields. Impacts on farmers include reduced incomes,

economic instability and uncertainty about the future. Farmers will face difficulties in meeting their daily needs if income from coconut sales decreases. Economic instability can also occur in villages because coconut is the main commodity that supports the economy. In addition, a decline in coconut production can create uncertainty for farmers about their future, so they need to look for alternative livelihoods or solutions to increase production. In addressing this problem, the theories of “Sustainable Agriculture” and “Resilience” can be relevant. Sustainable agriculture involves agricultural practices that take the environment and natural resources into consideration, while resilience refers to the ability of agricultural systems and farmers to adapt and recover from external changes. Farmers need to adopt sustainable agricultural practices, such as using efficient irrigation systems and selecting coconut varieties that are resistant to climate change. They also need to develop capacities and strategies to deal with climate change, such as diversifying income sources and investing in infrastructure that can reduce vulnerability to climate change. In addition, in the face of aging coconut trees, rejuvenating coconut plantations with new seedlings and good maintenance can help maintain optimal coconut production in the long term. Lack of maintenance and management of coconut plantations can be overcome with proper fertilization, adequate irrigation, and effective pest control.

In conclusion, the decline in coconut production in Durian Payung Village has an impact on the farmer's economy. Diseases and pests, climate change, aging coconut trees, and lack of proper maintenance and management are contributing factors. Farmers need to adopt sustainable agricultural practices, develop capacities and strategies to deal with climate change, and rejuvenate and maintain their coconut plantations.

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