



Impact of Low Papaya Prices on the Socio - Economic Conditions of Farmers: an Atlas.ti Analysis

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ABSTRACT

Purpose: This study aims to comprehensively analyze the socio-economic implications of declining papaya prices on the livelihoods of farmers in Manggilan Village, Pendopo District. **Method:** A descriptive qualitative approach was employed through field research involving direct observation, semi-structured interviews, and document analysis. Data were systematically analyzed using Atlas.ti, a qualitative data analysis software, to extract key themes and generate coding patterns. **Results:** The findings indicate that low papaya prices significantly undermine farmers' income, weaken household resilience, and adversely affect their social welfare. Several consequences were identified, including diminished financial capacity, disrupted consumption and savings patterns, reduced access to healthcare and education, and psychosocial stress. **Findings:** Farmers have adopted various coping strategies, such as diversifying crops, informal borrowing, and reducing household expenditures, yet these remain insufficient to offset long-term economic vulnerability. **Novelty:** This research uniquely integrates Atlas.ti in the socio-economic study of smallholder horticultural farmers, providing a rigorous and structured analytical framework that enhances the validity of qualitative agricultural research. **Conclusion:** The ongoing price decline poses a critical threat to sustainable rural development. Urgent policy interventions—such as price stabilization mechanisms, post-harvest management improvements, and cooperative marketing models—are necessary to safeguard farmer welfare. **Type of Paper:** Research Paper

INTRODUCTION

Agriculture continues to be a foundational pillar of Indonesia's national economy, contributing significantly to employment, rural development, and food security. According to the Central Bureau of Statistics (Ngadi et al., 2023), approximately 29% of Indonesia's workforce is engaged in the agricultural sector. Within this vast sector, horticulture—encompassing fruits, vegetables, and floriculture—has gained increasing prominence due to its high economic value, short cultivation cycles, and direct relevance to household nutrition and food diversification (Sah et al., 2022).

Among Indonesia's horticultural commodities, the California variety of papaya (*Carica papaya* L.) has experienced notable growth in cultivation, particularly at the community-farming level. This variety is favored by farmers due to its relatively high market demand, fast-growing characteristics, and ability to thrive in tropical agro-climatic conditions. Farmers in regions such as Manggilan Village, Pendopo Sub-District, rely heavily on papaya cultivation as a primary source of income. However, despite its promising agronomic and market features, papaya farmers frequently face one persistent and detrimental challenge: extreme price volatility (Brewer et al., 2022).

The phenomenon of fluctuating commodity prices in horticulture—especially during harvest peaks—is not new. In the case of papaya, supply surpluses during harvest seasons are often not matched by commensurate demand or market absorption, resulting in drastic price declines. Field data from Manggilan Village indicate that the price of papaya can drop to as low as IDR 400 per kilogram during peak periods, far below the economically viable threshold of IDR 2,500 to IDR 4,000 per kilogram (Vinod et al., 2023). This severe price decline directly affects farmers' income and disrupts the stability of rural livelihoods.

Such price instability is often rooted in structural inefficiencies along the agricultural value chain, including limited access to market information, the dominance of intermediary traders (middlemen), the absence of farmer cooperatives, and the lack of adequate post-harvest infrastructure such as cold storage and processing units (Aboah et al., 2021). Furthermore, the absence of inclusive and responsive agricultural policies exacerbates the vulnerability of smallholder farmers, leaving them exposed to market shocks and income insecurity (Wangu, 2021).

The socioeconomic repercussions of commodity price volatility extend beyond financial loss. For rural communities, fluctuations in farmgate prices influence a range of well-being indicators, including education, nutrition, healthcare access, and the capacity for reinvestment in farming operations (Wibowo et al., 2023). Persistent income insecurity also leads to psychological stress among farmers, migration of rural youth, and a gradual decline in interest toward agricultural entrepreneurship (Chuprov, 2023).

While numerous studies have explored the macroeconomic and sectoral implications of price volatility in staple commodities such as rice, rubber, and palm oil (Mgale et al., 2022), there is a significant research gap in examining the micro-level impact of such fluctuations on niche horticultural commodities like papaya. This lack of evidence hampers the formulation of localized, data-driven interventions that could enhance the resilience of papaya farmers.

Based on preliminary qualitative fieldwork conducted in October 2024 in Manggilan Village, it was observed that the erratic nature of papaya prices has led to economic uncertainty among farmers. Several respondents indicated a reluctance to continue papaya cultivation in the absence of price guarantees or government intervention. This uncertainty not only threatens income generation but also undermines rural development trajectories, particularly in regions where horticulture serves as a key livelihood strategy (Vázquez Alfaro et al., 2023).

To address this gap, the present study seeks to investigate the socioeconomic impacts of papaya price instability on papaya farmers in Manggilan Village, Pendopo Sub-District, Indonesia. Using a qualitative research approach supported by Atlas.ti as a Computer-Assisted Qualitative Data Analysis Software (CAQDAS), this study aims to extract recurring themes and perceptions from the lived experiences of affected farmers. The findings are expected to provide empirical insights for policymakers, local government agencies, and development stakeholders to design interventions that stabilize agricultural markets and enhance smallholder farmer resilience.

METHOD

Analysis Method

This study applied a **descriptive qualitative research design** rooted in **field research methodology**, aiming to deeply explore the socio-economic impact of declining papaya prices on farmers in Manggilan Village, Pendopo District, Empat Lawang Regency, South Sumatra, Indonesia. The research was conducted over four months, from October 2024 to January 2025. The selection of

a qualitative approach was based on its suitability for understanding complex social realities and the lived experiences of individuals in their natural settings (Haley et al., 2023).

Primary data were collected through direct observation, in-depth semi-structured interviews, and supporting documentation. These instruments enabled researchers to capture both verbal and non-verbal data from the field, offering a rich portrayal of farmers' socio-economic conditions. **Purposive sampling** was used to select informants—specifically papaya farmers who had experienced the consequences of prolonged price declines—ensuring that the data obtained were both relevant and insightful. To enhance **credibility and data validity**, **triangulation techniques** were employed by cross-verifying data obtained through different collection methods.

Secondary data were sourced from academic books, peer-reviewed journal articles, institutional reports, and various publications relevant to agricultural economics, rural livelihoods, and socio-economic resilience. These sources provided contextual depth and theoretical grounding for the analysis.

The qualitative data were analyzed using **Atlas.ti software**, which enabled a systematic, organized, and traceable process of data coding and theme development (Frieze, 2019). The analysis process involved several phases: **open coding** to identify key concepts from interview transcripts and field notes; **categorization** to group these codes into meaningful themes; **thematic mapping** to trace relationships and recurring patterns; and **analytical interpretation** to derive insights aligned with the study objectives. The integration of Atlas.ti allowed for a more rigorous qualitative analysis by enabling the researchers to manage large volumes of data efficiently while maintaining analytical transparency.

By combining field research with technological tools and methodological rigor, this study provides a comprehensive understanding of the socio-economic vulnerabilities and adaptive strategies of papaya farmers. The methodology not only ensures empirical validity but also contributes to broader discussions on rural economic resilience in the face of market volatility.

RESULTS AND DISCUSSION

RESULTS

1. How Does Low Papaya Prices Impact Farmers' Income?

The results of field interviews, the price of papaya in the market currently tends to fluctuate and even often decreases in the last 6 months, influenced by the season and the amount of supply. When the harvest is abundant, prices tend to fall, while reduced stocks cause prices to increase. Factors such as overproduction, low demand, and distribution and weather problems also exacerbate price instability, which has a direct impact on farmers' income. As a result, many farmers have difficulty meeting their daily needs, paying debts, saving, and financing their children's education. Some farmers are even forced to go into debt to meet important needs. To overcome this condition, they implement various strategies, such as saving expenses, looking for side jobs, selling directly to the market, planting other commodities, and utilizing social media and new markets to make prices more stable.

2. Does Low Papaya Price Affect Socioeconomic Welfare?

From the results of interviews in the field, the impact of the decline in papaya prices is not only felt in the economic aspect, but also in the social life of farmers. Reduced income forces them to be wiser in managing their finances, reducing non-urgent expenses, and looking for other alternatives to meet family needs. Some farmers even have to look for side jobs or go into debt to

survive. In addition, this economic change also affects social interactions, where some are increasingly closed off due to financial constraints, while others actually strengthen solidarity with fellow farmers. In various ways, they continue to try to adapt so that they can still meet their living needs in the midst of a difficult situation.

3. What is the Strategy to Overcome Low Papaya Prices on Income?

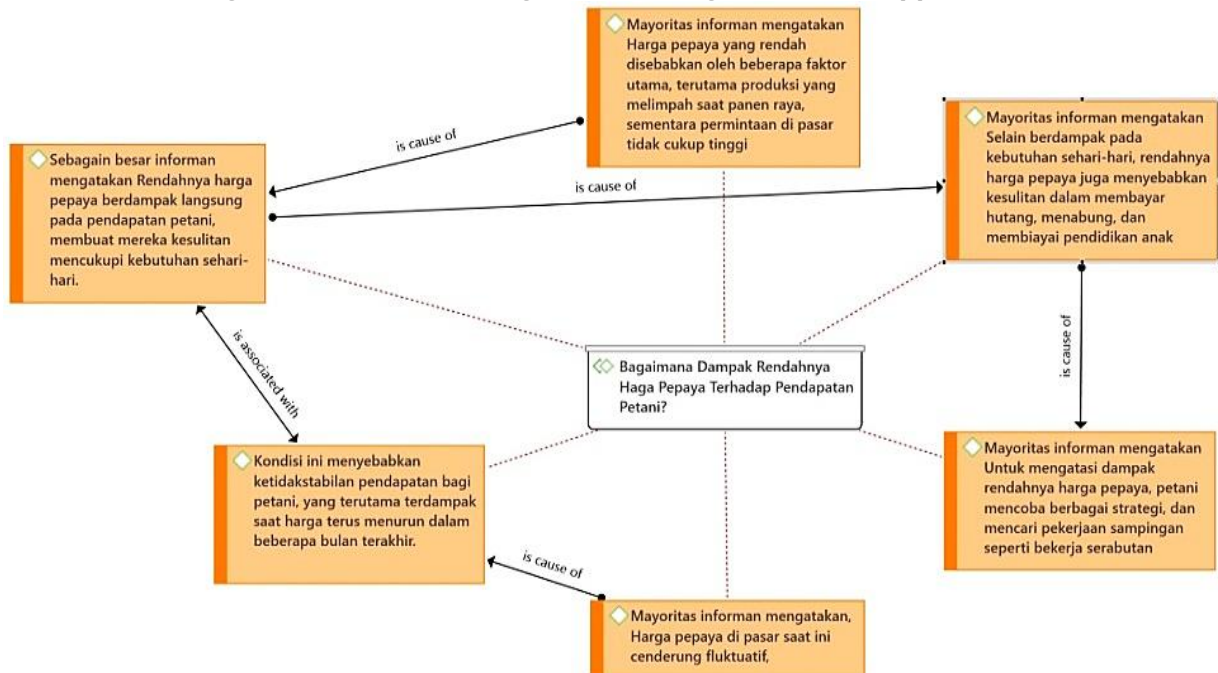
From the results of interviews in the field, the majority of informants stated that farmers face various challenges in managing papaya gardens, especially in the aspects of economy, production, marketing, and business innovation. To overcome financial difficulties, they implement a strategy to reduce production costs by saving on fertilizer use, switching to natural fertilizers, and managing their own gardens without many workers.

In addition, some farmers seek additional income by selling other garden produce or working odd jobs. In an effort to increase income, there is awareness of the potential of processing papaya into value-added products such as juice or jam, but capital and market access constraints remain major obstacles. In terms of marketing, the methods used vary, from traditional methods such as selling to middlemen and local markets to utilizing social media and online platforms. Some farmers also try to sell directly to consumers or work with distributors, although each method has its own challenges. Overall, farmers continue to adapt to existing conditions, but still need support in the form of education, access to technology, and capital assistance so that the strategies implemented are more effective and sustainable.

DISCUSSION

Impact of Low Papaya Prices on Farmers' Income

Figure 1. Data Processing Results Using the Atlas.ti Application



Source: Atlas.ti, 2025

From the conclusion of the interview results above, the fluctuation of papaya prices that occurred in the last six months has had a significant impact on farmers' income. From the interview results, it is known that papaya prices tend to fall when the harvest is abundant and increase when

stocks decrease. However, other factors such as overproduction, low demand, distribution problems, and weather conditions further exacerbate the price instability.

The main impact of low papaya prices is the decline in farmers' income. When prices fall, the income obtained from the harvest is unable to cover production costs, so farmers experience losses. This causes difficulties in meeting daily needs, paying debts, saving, and financing children's education. Some farmers are even forced to seek loans to meet their basic needs.

In facing this situation, farmers implement various strategies to survive. Some of them are by saving expenses, looking for side jobs, selling crops directly to the market to avoid middlemen, and planting other commodities that are more stable in terms of price. In addition, the use of social media and marketing through new markets are alternatives that are starting to be implemented so that papaya prices are more stable and profits can be maximized.

From this phenomenon, it can be concluded that the low price of papaya not only directly impacts the economy of farmers, but also affects the social aspects and welfare of their families. Therefore, efforts are needed from various parties, including the government and farmer associations, to find more sustainable solutions in maintaining price stability and improving the welfare of papaya farmers.

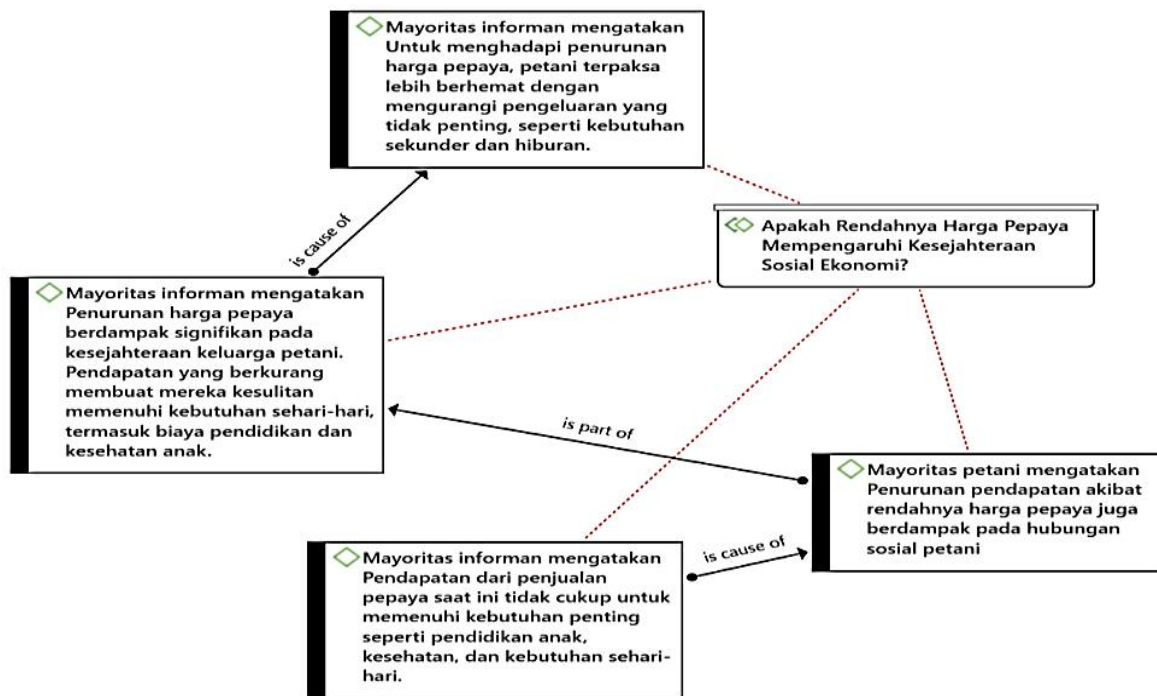
Based on the income theory, income is the amount of income received in a certain period after deducting the costs incurred. In this study, when the price of papaya decreased, farmers' income also decreased because the sales value was insufficient to cover production costs. This is in accordance with the income theory which states that business profits are obtained from sales after deducting costs. In this context, when the price is too low, farmers cannot obtain adequate profits and even experience losses.

From the perspective of welfare theory, welfare in the modern world includes the fulfillment of basic needs such as food, shelter, and education. Based on the results of the study, the low price of papaya has an impact on the welfare of farmers, where they have difficulty in meeting their daily needs, financing their children's education, and saving. This shows that the welfare of farmers is disrupted by the low income they receive, so that the theory of welfare is relevant in explaining the conditions that occur in the field.

From the arguments above, it can be concluded that the implementation of the theory of income and welfare is in accordance with research findings in the field, where farmers' incomes decreased due to low prices, which ultimately impacted their welfare.

Low Papaya Prices Affect Socio-Economic Welfare

Figure 2. Data Processing Results Using Atlas.ti



Source: Atlas application. Ti, 2025

From the interview results above, the decline in papaya prices has a significant impact on the social and economic welfare of farmers. From the interview results, it can be concluded that the impact is not only limited to the economic aspect, but also affects the social life of farmers. Economically, reduced income due to low papaya prices forces farmers to be wiser in managing their finances. Reducing spending on non-urgent needs is the main strategy implemented to ensure that basic needs are met. In addition, some farmers have to look for additional alternatives, such as side jobs or even go into debt to cover their daily needs. This income instability certainly reduces their purchasing power, which ultimately affects overall welfare.

From a social perspective, the impact of the decline in papaya prices has also affected the pattern of interaction between farmers and the surrounding community. Some farmers have become more withdrawn due to the financial constraints they face, while others have strengthened their solidarity with fellow farmers in facing these difficult conditions. The attitude of helping each other among them is a form of social adaptation in overcoming increasingly difficult economic challenges.

Thus, it can be concluded that the low price of papaya has a fairly complex impact on the welfare of farmers. Not only the economic aspect is affected, but also their social life experiences changes as a form of adjustment to uncertain conditions. Therefore, efforts are needed from various parties, both government and society, to find solutions that can help farmers in dealing with the instability of the prices of their agricultural products.

Based on the theory of welfare in the modern world, a person's welfare is measured by their ability to meet basic needs such as food, clothing, shelter, clean water, and education. The results of the study showed that the decline in papaya prices caused a decrease in farmers' income, which had an impact on their difficulty in meeting these needs. Therefore, the implementation of this theory is in accordance with conditions in the field, where farmers' welfare is threatened by economic instability.

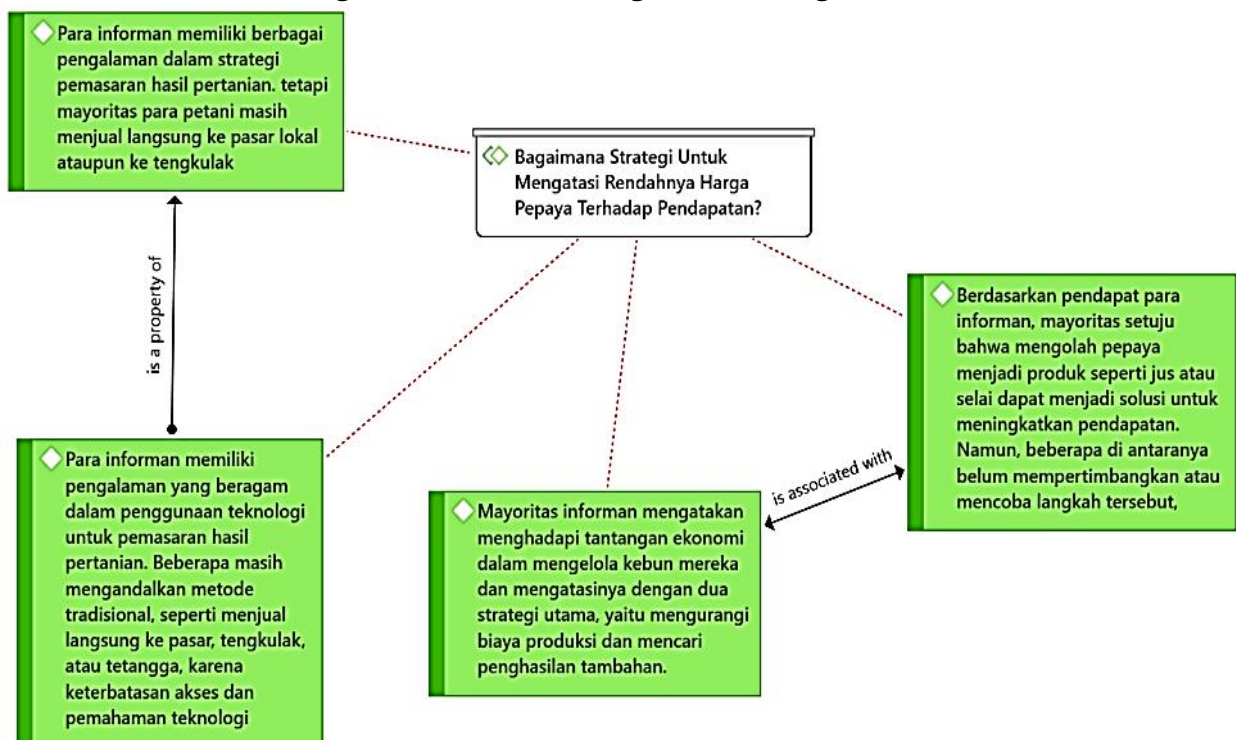
In the theory of social welfare, the standard of living of society is the main indicator of welfare. The results of the interview showed that the standard of living of farmers decreased due to price instability, so this theory also proved relevant to conditions in the field.

Another income theory states that additional income from other jobs can improve family welfare. The results of the study showed that some farmers sought additional jobs to meet their needs, which confirmed the truth of this theory. However, in some cases, the additional jobs obtained were not enough to cover the decline in main income, so its implementation in the field still has limitations.

Based on socio-economic theory, a person's position in society is influenced by economic activity, income level, and place of residence. From the interview results, it was found that some farmers experienced a decline in social status due to declining income, while others remained with solidarity between farmers. This shows that the implementation of socio-economic theory can be seen in the field, although with different variations in impact. Thus, the implementation of these theories is generally in accordance with conditions in the field, although there are some limitations in their application. The decline in papaya prices provides a real picture of how the socio-economic aspects of farming communities are affected and adapt to existing conditions. Therefore, strategic solutions are needed to improve farmer welfare, both through more stable price policies and alternative economic empowerment.

Strategies to Overcome Low Papaya Prices Against Income

Figure 3. Data Processing Results Using Atlas.ti



Source: Atlas.ti Application, 2025

From the conclusion of the interview above, the low price of papaya is the main challenge for farmers in increasing their income. Based on the interview results, the majority of informants stated that farmers face various obstacles in economic, production, marketing, and business innovation

aspects. Therefore, various strategies are implemented to overcome this problem. One of the steps taken by farmers is to reduce production costs in order to continue to make a profit even though the selling price is low. These efforts include saving on the use of chemical fertilizers by switching to natural fertilizers that are more economical and environmentally friendly, managing gardens independently without many workers to reduce labor costs, and optimizing the use of existing resources so that production costs are more efficient.

To overcome financial difficulties due to low papaya prices, some farmers seek additional income by planting other crops that have a more stable selling value, selling other garden produce besides papaya as an additional source of income, and working odd jobs outside the agricultural sector to increase income. Some farmers are beginning to realize the potential of processing papaya into value-added products to have a higher selling power, such as making juice, jam, or papaya preserves. The production of processed papaya-based products that last longer than fresh fruit is also an alternative. However, the main obstacles in developing this business are limited capital and suboptimal market access. Farmers use various marketing methods to increase the selling power of their papaya, including selling traditionally through middlemen and local markets which are still the main choice because of easy access, utilizing social media and online platforms to reach more consumers directly, and collaborating with distributors or shops that are willing to accommodate their harvest.

In order for the strategies implemented to be more effective, farmers still need support in various aspects, such as education and training on more innovative cultivation and product processing techniques, access to modern agricultural technology to increase productivity, and capital assistance from the government or financial institutions for business development.

With the combination of these strategies, it is hoped that farmers can overcome the impact of low papaya prices on their income. Support from various parties is also needed so that this agricultural business can be more sustainable and provide better economic benefits for farmers.

Based on the Challenge theory, unfavorable environmental factors in the company, if not addressed, will become obstacles in both the short and long term. This is in accordance with the conditions in the field where farmers face various obstacles in terms of production, marketing, and capital. If these challenges are not handled properly, the position of farmers in the papaya industry will weaken further. Farmers' efforts to adapt through reducing production costs, diversifying income, and marketing strategies prove that they are trying to face these challenges so that they do not become bigger obstacles in the future.

In addition, based on the Other Income theory, income obtained from other jobs besides the main profession can improve family welfare. This is also seen from the results of the study, where farmers try to find additional income from other sources, such as planting other crops, selling other garden produce, or working odd jobs. This strategy helps farmers maintain their financial stability amidst low papaya prices, so this theory is proven to be relevant to findings in the field.

Overall, the results of the study indicate that the implementation of the Challenge theory and the Other Income theory has been in accordance with the conditions in the field. Farmers face challenges that have the potential to become major obstacles if not overcome, while their efforts to find additional income are in accordance with the concept of other income aimed at improving family welfare. However, further support is still needed so that the strategies implemented can run more effectively and sustainably.

CONCLUSION

The decline and instability of papaya prices in recent months have had a profound impact on the income and socio-economic welfare of farmers. This condition is exacerbated by external factors such as overproduction, fluctuating demand, seasonal supply changes, and inadequate market

distribution systems. As a result, many farmers struggle to cover production costs, meet daily needs, support their children's education, and maintain a stable standard of living.

Socially, the income shock has led to reduced purchasing power, changes in consumption behavior, and shifting patterns of community interaction. While some farmers experience social withdrawal due to financial strain, others have responded by strengthening communal solidarity and mutual support systems within farmer groups.

To cope with these challenges, farmers have implemented a variety of adaptive strategies. Economically, they reduce production costs by minimizing the use of chemical fertilizers, switching to organic alternatives, and reducing reliance on hired labor. Diversification of income through planting other high-demand commodities and taking side jobs is a commonly adopted measure. Additionally, some farmers have started processing papaya into value-added products such as juice, jam, and preserves to extend shelf life and increase market value.

From a marketing perspective, strategies include shifting from traditional sales channels to more direct and innovative methods, such as selling through social media, online platforms, and establishing direct partnerships with distributors or consumers. However, these efforts are often constrained by limited capital, insufficient technological knowledge, and inadequate access to broader markets.

To enhance the effectiveness and sustainability of these strategies, structural support is essential. This includes targeted government policies on price stabilization, access to microcredit or agricultural financing, market linkage facilitation, and training in agribusiness management and digital marketing. Collaborative efforts involving farmer associations, local governments, and private sector actors are also crucial to building resilient agricultural value chains and ensuring long-term improvements in farmer welfare.

In conclusion, addressing the issue of low papaya prices requires a multi-dimensional strategy that empowers farmers economically, strengthens their market position, and enhances their capacity to innovate and adapt. With integrated support and inclusive policy interventions, the agricultural sector—particularly papaya farming—can become more resilient and contribute meaningfully to rural economic development.

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