The Economic Resilience of Farming Households in the Face of Fluctuations in Coconut Sugar and Spice Prices in Kemawi Village, Somagede District, Banyumas Regency

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ABSTRACT
Agriculture remains the main livelihood source for rural communities, including in Kemawi Village, Somagede District, Banyumas Regency, where household economies depend on coconut sugar and spices. This dependence makes farming households vulnerable to seasonal and unpredictable price fluctuations, especially amid intermediary-dominated market structures and limited access to broader markets. This study analyzes the economic resilience of farming households in Kemawi Village in responding to fluctuations in coconut sugar and spice prices, as well as the adaptation strategies they use to sustain their livelihoods. Using a qualitative case study approach, data were collected through field observation, semi-structured interviews, and documentation involving coconut sugar farmers, spice farmers, local collectors, and village officials. The findings show that price fluctuations directly affect household income stability. In response, farmers adopt post-harvest processing strategies to increase value added, extend shelf life, and gain flexibility in timing sales. Some coconut sugar farmers shift to crystal coconut sugar, while spice farmers dry their produce to preserve quality and delay sales. The study concludes that post-harvest processing strengthens household economic resilience and reduces dependence on raw commodity price fluctuations. However, this resilience remains adaptive rather than transformative due to weak bargaining power, limited direct market access, and insufficient support from local economic institutions.

Keywords: farmer economic resilience, price fluctuations, coconut sugar, spices, post-harvest processing, Kemawi Village

ABSTRAK
Sektor pertanian masih menjadi sumber penghidupan utama masyarakat pedesaan, termasuk di Desa Kemawi, Kecamatan Somagede, Kabupaten Banyumas, yang menggantungkan ekonomi rumah tangga pada komoditas gula kelapa dan rempah-rempah. Ketergantungan ini membuat rumah tangga petani rentan terhadap fluktuasi harga yang musiman dan tidak menentu, terutama karena pasar pertanian masih didominasi pedagang perantara dan akses petani ke pasar yang lebih luas terbatas. Penelitian ini bertujuan menganalisis ketahanan ekonomi rumah tangga petani di Desa Kemawi dalam menghadapi fluktuasi harga gula kelapa dan rempah-rempah serta strategi adaptasi yang dilakukan untuk menjaga keberlangsungan penghidupan. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui observasi lapangan, wawancara semi-terstruktur, dan dokumentasi dengan informan petani gula kelapa, petani rempah, pedagang pengumpul, dan perangkat desa. Hasil penelitian menunjukkan bahwa fluktuasi harga secara langsung memengaruhi stabilitas pendapatan rumah tangga petani. Untuk merespons kondisi tersebut, petani mengembangkan strategi adaptasi melalui pengolahan hasil tani guna meningkatkan nilai tambah, memperpanjang daya simpan, dan memperluas pilihan waktu penjualan. Sebagian petani gula kelapa memproduksi gula kristal, sedangkan petani rempah melakukan pengeringan hasil panen. Penelitian ini menyimpulkan bahwa pengolahan hasil tani berperan penting dalam memperkuat ketahanan ekonomi rumah tangga petani dan mengurangi ketergantungan pada fluktuasi harga bahan mentah. Namun, ketahanan tersebut masih bersifat adaptif, belum transformatif, karena lemahnya posisi tawar, terbatasnya akses pasar langsung, dan belum kuatnya dukungan kelembagaan ekonomi desa.

Kata kunci: ketahanan ekonomi petani, fluktuasi harga, gula kelapa, rempah-rempah, pengolahan hasil tani, Desa Kemawi

Introduction

The agricultural sector remains the principal foundation of livelihood for rural communities in Indonesia. In many villages, agriculture is not merely a source of income, but also the basis of household social stability, family labour relations, and the continuity of the local economy. Nevertheless, heavy dependence on primary commodities places farming households in a vulnerable position vis-à-vis market risks, particularly price fluctuations, shifts in demand, and the dominance of intermediary actors within distribution chains. The literature on smallholder market participation shows that limited market access, weak price information, and low capacity to delay sales frequently compel small farmers to accept unfavourable prices (Barrett, 2008). At the same time, the FAO has stressed that value addition and institutional support are essential preconditions if smallholders are not to remain permanently on the weakest side of market structures (FAO, 2013).

These conditions are highly relevant to the case of Kemawi Village, Somagede District, Banyumas Regency. At the local level, Kemawi has been documented both as an area of crystal coconut sugar production through the *Kelompok Tani Sekar Mancung* and as a village with prospects for nutmeg development within community forest systems. Thus, the economic structure of farming households in this village is not based solely on seasonal food crops, but also on commodities that require persistence, processing, and specific marketing networks. These local studies further indicate that Kemawi possesses a distinctive village economic base, namely a combination of coconut sugar and spices with relatively high economic value (Fauziyah, Kuswantoro, & Sanudin, 2014; Laili, 2018; Nurkhayati, 2019).

Within the rural economic context, farming households in Kemawi face not only production-related challenges, but also problems associated with marketing and income stability. When commodity prices decline, farming households face a dual pressure: production costs must still be borne, while the selling value of harvested or processed products decreases. This problem becomes even more severe when farmers have no direct access to broader markets, lack an adequate price information system, and remain dependent on collector traders to sell their produce. For this reason, the economic resilience of farming households cannot be understood solely in terms of the amount of income they earn, but rather in terms of their capacity to absorb shocks, adjust production and marketing strategies, and sustain family livelihoods amidst market uncertainty.

In this article, the economic resilience of farmers is understood as the capacity of farming households to endure, adapt, and sustain their livelihoods when confronted with economic pressures, particularly fluctuations in commodity prices. This framework is consistent with the farming systems resilience literature, which emphasises the capacity to absorb, adapt, and transform in response to shocks (Meuwissen et al., 2019). At the level of smallholder households, this adaptive capacity is often reflected in practical choices such as income diversification, adjustments in the timing of sales, post-harvest processing, and the use of social networks to reduce risk (Ellis, 2000).

Against this backdrop, the present study aims: (1) to analyse the condition of the economic resilience of farming households in Kemawi Village in the face of fluctuations in coconut sugar and spice prices; (2) to explain how market structure affects farmers' bargaining position; and (3) to identify the adaptive strategies developed by farmers, particularly through the processing of agricultural produce. Accordingly, this article does not merely describe the problem of commodity prices, but situates it within the broader framework of the economic resilience of smallholder farming households in rural areas.

Theoretical Framework

The Economic Resilience of Farming Households

The economic resilience of farming households refers to the capacity of farming families to sustain their livelihoods and meet their basic needs when confronted with economic pressures, including price shocks, market changes, and production disturbances. In the literature on farming systems resilience, Meuwissen et al. explain that resilience can be read through three principal capacities: absorptive capacity, adaptive capacity, and transformative capacity (Meuwissen et al., 2019). At the level of smallholder households, absorptive capacity is reflected in the ability to maintain basic consumption when income declines; adaptive capacity is visible in adjustment strategies such as diversification or product processing; while transformative capacity is manifested in more fundamental change, such as stronger institutions and improved farmer positions within market chains.

Market Structure and Farmers' Bargaining Position

Farmers' bargaining position is determined not only by production outcomes, but also by the market structure within which commodities are traded. Barrett (2008) shows that smallholder market participation is often constrained by high transaction costs, small production scale, limited information, and weak access to marketing infrastructure. Within such market structures, collector traders frequently hold a dominant position in price formation. The FAO (2013) likewise emphasises that without institutional support, small farmers tend to sell under compulsion rather than from a position of strong negotiation.

Adaptive Strategies and Value-Added Diversification

Among smallholder households, adaptation to market shocks is often pursued through cost reduction, income diversification, changes in consumption patterns, or the enhancement of the value of agricultural products. Ellis (2000) argues that diversification of rural livelihoods is an important strategy for reducing vulnerability and broadening the economic security base of households. In the context of agricultural commodities, one particularly relevant form of adaptation is post-harvest processing or value addition, because this strategy can extend shelf life, increase selling value, and provide farmers with room to delay sales when prices are unfavourable.

Research Method

This study employs a qualitative approach with a case study design. This approach was chosen because the research seeks to understand in depth the experiences, strategies, and meanings constructed by farmers in responding to fluctuations in commodity prices. A case study design was adopted because the research focuses on a specific socio-economic unit, namely households engaged in coconut sugar and spice farming in Kemawi Village, Somagede District, Banyumas Regency.

Data were collected through field observation, semi-structured interviews, and documentation. Observation was conducted to examine directly the processes of production, processing, storage, and marketing of agricultural products. Interviews were conducted with coconut sugar farmers, spice farmers, collector traders, and village officials familiar with the village's economic dynamics. Informants were selected purposively on the basis of their direct involvement in the production and marketing of the commodities in question. Documentation was used to supplement information concerning the village profile, leading commodities, and the historical trajectory of crystal sugar development in Kemawi Village.

Data were analysed interactively through three stages: data reduction, data display, and conclusion drawing (Miles, Huberman, & Saldaña, 2014). This process enabled the

researcher to examine the interconnections among the socio-economic conditions of farmers, market structure, and the adaptive strategies they developed. Data validity was maintained through source triangulation and technique triangulation.

Findings and Discussion

The Agricultural Economic Context of Kemawi Village

The field findings indicate that the household economy of farmers in Kemawi Village depends heavily on tree-based commodities and spices, particularly coconut sugar and spices such as nutmeg and cardamom. This picture is consistent with earlier academic work that has documented Kemawi as a centre of crystal coconut sugar production and as an area with prospects for nutmeg development. Thus, the economic structure of farming households in this village is not based solely on seasonal food crops, but on commodities requiring persistence, processing, and specific marketing networks.

However, the characteristics of commodities such as coconut sugar and spices also generate particular vulnerabilities. Coconut sugar is strongly influenced by sap quality, fuel costs, family labour, and daily selling prices. Spices, by contrast, are more heavily shaped by harvest cycles, drying quality, and fluctuations in market demand. Consequently, the economic stability of farming households in Kemawi depends greatly on their capacity to manage uncertainty in both prices and product quality.

Price Fluctuations and the Vulnerability of Farming Households

Interview findings show that price fluctuations constitute one of the principal sources of economic pressure on farmers. When prices fall, farmers face problems that are both immediate and acute: sales revenues are no longer commensurate with the labour and production costs already incurred. Among coconut sugar farmers, declining prices undermine daily income because production is continuous. Among spice farmers, low prices often mean that harvests are either not sold immediately or are sold with only a very narrow margin.

The economic resilience of farming households here is determined not merely by the size of their income, but by their ability to absorb shocks without falling directly into crisis. Households without savings, access to credit, or commodity reserves are far more vulnerable when prices decline. This shows that the economic vulnerability of farmers in Kemawi is structural in nature: it is rooted in dependence on primary commodities, weak market access, and the absence of adequate risk-protection instruments.

Market Structure and the Weak Bargaining Position of Farmers

One of the major findings of this study is that commodity market structures in Kemawi remain heavily dependent on collector traders. In both coconut sugar and spices, farmers more often sell their produce to middlemen or intermediary traders who possess stronger access to markets outside the village. Within such a pattern, farmers tend to become price takers rather than price makers. They accept prevailing prices, often without sufficient comparative information.

In the case of coconut sugar, the supply-chain study of *Kelompok Tani Sekar Mancung* in Kemawi Village similarly shows that the flow of products, money, and information involves artisans, collectors, farmer groups, and buyers. This finding is important because it demonstrates that even where a supply-chain structure exists, the position of producers remains highly influenced by costs and by their relationships with collectors. In other words, the existence of a supply chain does not automatically strengthen farmers' bargaining position.

Under such conditions, price fluctuations impose their heaviest burden on farmers. When prices are low, farmers often have little choice

but to continue selling, especially when commodities are perishable or when they urgently need cash. This is the clearest expression of the weak bargaining position of small farmers within an unequal market structure.

Adaptive Strategy: Processing Coconut Sugar into Crystal Sugar

Field findings show that one of the most important adaptive strategies in Kemawi Village is the processing of coconut sugar into crystal sugar. Economically, this strategy is highly rational. Crystal sugar has a higher added value, a longer shelf life, and a broader market reach than ordinary moulded coconut sugar. This finding is consistent with a study from UIN Saizu, which shows that product innovation in *Kelompok Tani Sekar Mancung* increased both the selling value and the competitiveness of organic coconut sugar in Kemawi, and was even said to have reached export markets (Laili, 2018). Thus, the processing of coconut sugar into crystal sugar is not merely a product variation, but a tangible expression of the adaptive capacity of farming households.

Figure 1. *Crystal sugar processed by farmers in Kemawi Village*

Source: *Researcher's field documentation, 2025*

From the perspective of economic resilience, processing coconut sugar into crystal sugar strengthens at least three aspects. First, it increases value added at the village level. Second, it extends shelf life, so that farmers are not compelled to sell immediately when prices are unfavourable. Third, it opens up access to wider markets, including those demanding more practical and hygienic products. In other words, this strategy helps farmers move from merely selling semi-processed raw materials to offering processed goods with a relatively stronger bargaining position.

Adaptive Strategy in Spices: Drying as a Means of Preserving Quality and Selling Flexibility

In the case of spices, the most apparent adaptive strategy is drying. Farmers recognise that moisture content strongly determines both quality and selling price. For that reason, spices are not sold immediately in fresh condition, but are dried first so that their quality improves and their shelf life is extended. Although simple, this strategy is highly important because it gives farmers greater flexibility in determining when to sell.

Figure 2. *Drying spices as a strategy for preserving quality and extending shelf life*

Source: Researcher's field documentation, 2025

Unlike fresh produce, which deteriorates quickly, dried spices give farmers room to avoid complete submission to daily price pressure. Within the framework of economic resilience, this represents both absorptive and adaptive capacity: farmers reduce the risk of quality loss,

prolong product longevity, and create greater room for manoeuvre in selling their outputs. Drying also demonstrates how farmers make use of local resources—sunlight, drying space, and traditional knowledge—to respond to market uncertainty at minimal cost.

The Economic Resilience of Kemawi Farmers: Adaptive, but Not Yet Transformative

If read through the resilience framework, the strategies of producing crystal sugar and drying spices show that farmers in Kemawi possess a fairly strong adaptive capacity. They are not entirely passive in the face of price fluctuations, but instead attempt to transform the form of their commodities so that selling values improve and the risk of loss declines. This is an important finding, because it demonstrates that the economic resilience of farming households can be built upon simple innovations rooted in local knowledge.

However, such resilience cannot yet be described as transformative. The reason is that the fundamental roots of the problem remain unchanged: farmers' bargaining position is still weak, access to direct markets remains limited, and village economic institutions are not yet strong enough to negotiate prices, organise collective marketing, or provide adequate financing. In other words, farmers have become capable of adjusting to market pressures, but not yet sufficiently powerful to alter the market structures that render them vulnerable.

Implications for Village Economic Development

The case of Kemawi shows that strengthening farmers' economic resilience cannot be achieved merely by encouraging production. Much more important is the promotion of further processing, the strengthening of economic institutions, and the expansion of market access. The crystal sugar industry in Kemawi has already shown an important embryonic development in that direction, as evidenced by studies of supply chains and product innovation in the village. The same can be developed for spices through stronger post-harvest systems, quality standardisation, and more coordinated marketing.

Accordingly, the economic resilience of farming households in Kemawi should not be read merely as an ability to "survive," but as an opportunity to develop a value-added village economic model. Within this model, farmers do not merely sell raw outputs, but gradually become stronger village economic actors across production, processing, and distribution.

Conclusion

The economic resilience of farming households in Kemawi Village is strongly affected by fluctuations in the prices of its principal commodities, especially coconut sugar and spices. As small-scale farmers who still depend on traditional production patterns and limited marketing channels, they remain highly vulnerable to changes in market prices. A market structure dominated by intermediary traders weakens farmers' bargaining position and causes price declines to have direct consequences for household income stability.

Even so, Kemawi farmers demonstrate a tangible adaptive capacity. In coconut sugar production, processing into crystal sugar generates added value, extends shelf life, and broadens market access. In spice production, drying serves to preserve quality and provides flexibility in the timing of sales. Both strategies play an important role in strengthening the economic resilience of farming households because they reduce dependence on the sale of raw materials when prices are low.

However, the resilience that has emerged remains adaptive rather than transformative. Unequal market structures, farmers' weak bargaining position, and limited support from village economic institutions mean that the innovations pursued by farmers have not yet

been able to fundamentally alter the economic relations that disadvantage them. For that reason, strengthening the economic resilience of farmers in Kemawi requires follow-up measures that not only promote product value addition, but also reinforce institutions, market information systems, and fairer distribution access.

Recommendations

First, efforts to strengthen the economic resilience of farmers in Kemawi Village should be directed towards the further development of processed agricultural products, especially coconut sugar and spices, so that farming households do not remain overly dependent on the sale of raw materials.

Second, the village government and related institutions need to strengthen farmers' economic institutions, such as farmer groups, cooperatives, or joint business units, so that processing, marketing, and the procurement of raw materials can be organised collectively and thereby strengthen farmers' bargaining position.

Third, farmers' access to market information, post-harvest training, packaging, and digital marketing should be expanded so that processed products from Kemawi can reach wider markets and generate more stable income.

Fourth, future research may be directed towards value-chain analysis of coconut sugar and spices in Kemawi Village in order to map more precisely the points at which price inequalities occur and the opportunities for policy intervention.

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