



Regular article

Framework for Rural Development through an Modern Agribusiness System Based on Local Commodities: A Pilot Study in Suci Village, Jember Regency, East Java, Indonesia

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ARTICLE INFO

Article history:

Received 08 December 2025

Accepted 13 December 2025

Available online 31 December 2025

Keywords:

Rural Development

Modern Agribusiness System

Local Commodities

ABSTRACT

The development of agribusiness based on village level flagship commodities cannot be carried out in a partial or fragmented manner. It requires an integrated agribusiness system approach that encompasses the entire value chain from upstream to downstream. The objective of this study is to identify the potential of village flagship commodities within an integrated agribusiness system and to develop an Agribusiness Modernization System (AMS) through a case study conducted in Suci Village, Panti Subdistrict, Jember Regency, East Java. Agribusiness modernization has been shown to facilitate the introduction of appropriate technologies, enhance value-chain efficiency for agricultural products, and strengthen the capacities of farmers and local enterprises. Flagship commodities can be determined not merely by historical quantitative advantages but by competitive potential validated through four empirical domains: (1) biophysical contextuality verification, (2) sensory quality validation, (3) market valuation assessment, and (4) institutional readiness analysis. This study demonstrates that integrating the pillars of socio-economic governance with biophysical potential yields a comprehensive approach to rural development. The Place-Based Commodity Selection Framework provides a definitive answer to the fundamental question of commodity selection by moving beyond descriptive–historical methods toward a prescriptive–strategic paradigm. The four-domain analysis convincingly identifies coffee as the flagship commodity of Suci Village, with validation supported by convergent evidence on biophysical suitability, sensory quality potential, significant economic value opportunities, and institutional preparedness. Thus, this study makes a practical contribution to the development of sustainable and competitive rural agribusiness.

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Introduction

Agribusiness Modernization Systems (AMS) represent an integrated framework that leverages technology, data, and modern governance structures to optimize agricultural production and market linkages (Nikolova et al., 2025). This approach marks a decisive shift from traditional methods, which often rely on localized knowledge and manual processes, towards a model that utilizes precision farming, data-

driven decision-making, and integrated supply chain management (Witjaksono et al., 2024). The theoretical foundations of rural agribusiness development have evolved significantly from production-focused approaches to market-oriented systems thinking. Contemporary perspectives emphasize agricultural innovation systems that integrate technological, institutional, and market dimensions (World Bank, 2006). The sustainable rural livelihoods

<https://doi.org/10.47134/jobm.v3i2.183>

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framework further highlights how communities mobilize various forms of capital—natural, human, social, physical, and financial—to pursue sustainable agricultural development (Scoones, 1998). This transformation is part of a broader "evolutionary transformation of modern agri-food systems," which are increasingly expected to ensure not just profitability but also environmental sustainability and social equity. The core of AMS lies in its ability to bridge the gap between local production and broader market opportunities, moving rural communities from a position of price-takers to value-capturers within regional and global value chains.

In the Indonesian context, agricultural development has transitioned from green revolution paradigms toward agribusiness systems approaches that emphasize value chain integration and market orientation (Wajdah and Nurmalina, 2024). The Ministry of Agriculture's (2019) Millennial Farmer Development Program represents this shift, focusing on market-led agricultural entrepreneurship rather than production enhancement alone. However, implementation challenges persist, particularly in connecting smallholder production with value-added market opportunities (Allali et al., 2024; Clay and Feeney, 2019; FAO, 2017). Desa Suci, an agrarian community in Jember Regency, is characterized by its strategic location on the slopes of Mount Argopuro and a population of 10,133 people across 3,407 households. The local economy is predominantly agricultural, with 64.09% of households engaged in farming, operating within a diverse landscape of plantations, community forests, and rice fields (Suyuthi, 2023). This heavy reliance on agriculture, combined with the village's vision to achieve prosperity through local potential development, underscores the critical need to address the persistent production-market misalignment that limits rural economic advancement.

Rural agribusiness in developing economies consistently grapples with a fundamental production-market misalignment, where local production capabilities remain disconnected from market value opportunities (Stotten and Froning, 2023). This disconnect manifests as a value capture problem, wherein agricultural producers generate substantial value but capture minimal returns within the broader value chain (Gereffi et al., 2005). In Indonesia, this challenge is particularly acute, with smallholder farmers often positioned as price-takers rather than value-capturers within agricultural markets (McCullough et al., 2008). The case of Desa Suci in Panti District, Jember Regency exemplifies this persistent challenge. Despite favorable agro-ecological conditions and diverse commodity potential, local agribusiness development remains constrained by traditional practices and limited market integration. This local-global gap represents a significant development paradox: substantial agricultural potential coexists with limited economic prosperity, creating a cycle of underdevelopment that demands both scholarly attention and practical intervention (Reardon et

al., 2009).

Traditional rural development planning has heavily relied on quantitative methods like Location Quotient (LQ) and Shift-Share Analysis (SSA) for identifying regional competitive advantages (Miller et al., 1991). While these methods provide valuable historical insights into economic structure, they suffer from critical limitations for strategic agribusiness development. Their inherently descriptive and retrospective nature offers limited utility for prescriptive and forward-looking planning required in dynamic market environments (Ewert et al., 2023). The fundamental limitation lies in their orientation: LQ and SSA effectively answer "What have we been good at?" but provide little guidance on "What can we be the best at, in the eyes of the market?" This historical-descriptive paradigm fails to account for evolving consumer preferences, quality differentiation potential, and value-added opportunities that define modern agribusiness competitiveness (Reardon et al., 2019).

To address these limitations, this study proposes an Integrated Place-Based Commodity Selection Framework, representing a paradigm shift from a descriptive-historical analysis toward a prescriptive-strategic planning approach (Slee and Hopkins, 2024). This framework is designed to provide a comprehensive and systematic method for identifying and developing local commodities based on both their intrinsic characteristics and strategic potential (Adjin et al., 2022). The approach integrates four evidence domains for commodity selection, encompassing biophysical uniqueness, sensory quality, market valuation, and institutional readiness. The biophysical uniqueness domain focuses on assessing the 'terroir' and natural capital differentiation that define the distinctiveness of a commodity. The sensory quality domain validates tangible product attributes and quality standards, ensuring that the commodities meet market and consumer expectations. The market valuation domain analyzes the potential for value capture and consumer willingness-to-pay, identifying opportunities for economic competitiveness. Finally, the institutional readiness domain evaluates the capacity of local organizations and communities to engage effectively in market systems and value chain development. Through this research, the study bridges analytical evidence and strategic action, ensuring that local commodity development is both contextually grounded and forward-looking. By bridging the production-market misalignment through this integrated framework, the study aims to transform how rural communities identify and develop competitive advantages in agricultural markets, moving beyond historical patterns to strategic future positioning with actionable implementation pathways.

Methods

Research Design and Approach

The research was conducted through a sequential three-phase implementation process. The first phase, contextual analysis, focused on

understanding the local socio-economic and agro-ecological context. The second phase, evidence collection, involved gathering multi-dimensional data across the four framework domains. The third phase, integrative analysis, synthesized the collected evidence to identify superior commodities.

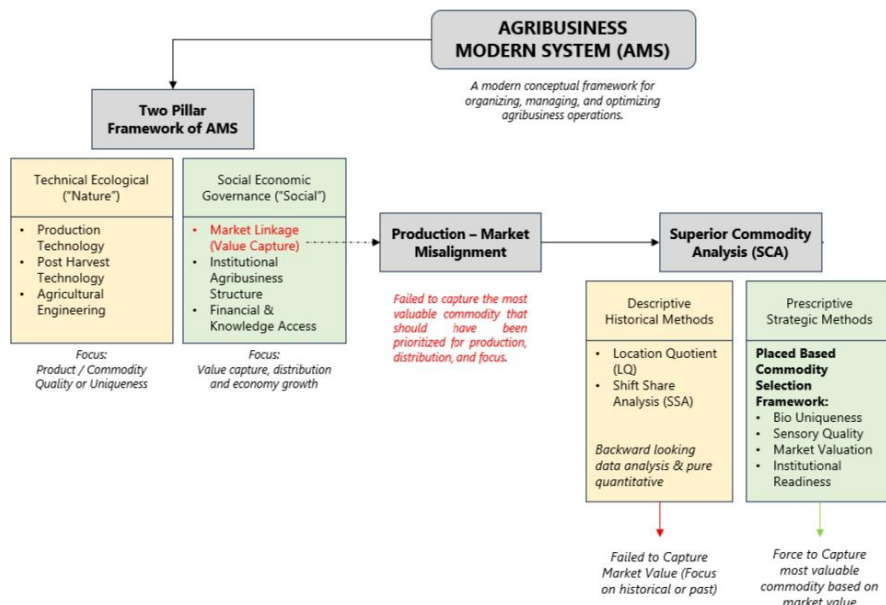


Figure 1. Research Framework

The Place-Based Commodity Selection Framework

The core methodological is the four-domain Place-Based Commodity Selection Framework (Barca et al., 2012), which moves beyond traditional commodity analysis through integrated place-based framework (Barca, 2009; Slee and Hopkins, 2024):

Biophysical Uniqueness

This domain focuses on assessing the natural capital and terroir that enable product differentiation. Data were collected through several methods, including agro-ecological assessment to document existing farming systems and biodiversity; and farmer interviews to gather qualitative data on local ecological knowledge and practices (Mc Guire et al., 2015).

Sensory Quality

This domain validates product quality through standardized evaluation protocols. Data collection involved sample collection of representative products, sensory evaluation by panelists using standard sensory testing methods, and quality consistency assessment to measure variation across seasons and producers. The analysis combined quantitative scoring with qualitative descriptions of sensory attributes that influence consumer preference and willingness to pay.

Market Valuation

This domain analyzes the potential for value capture through market intelligence. Data were gathered using value chain mapping to identify actors, relationships, and value distribution; price premium analysis to

assess quality-based price differentials; consumer research to evaluate preferences and willingness to pay; and competitive analysis to examine competing products and their market positioning (Ma et al., 2024). The analysis integrated both quantitative methods, such as price and conjoint analysis, and qualitative approaches, including in-depth interviews with market actors, to provide a comprehensive understanding of market dynamics.

Institutional Readiness

This domain evaluates the organizational capacity for effective market engagement. The process involved organizational mapping to inventory farmer groups, cooperatives, and village-owned enterprises (BUMDes); governance assessment to evaluate decision-making processes and accountability structures; capacity evaluation to assess technical, managerial, and financial competencies; and network analysis to map relationships with market actors and supporting institutions. Analytical tools from institutional assessment and social network analysis were used to identify both strengths and constraints in collective market engagement.

Data Collection Methods

Data collection in this study employed multiple complementary methods to ensure comprehensive coverage across all framework domains. Household surveys were conducted with a representative sample of farm households to obtain information on production systems, resource constraints, and market channels, contributing

primarily to the biophysical and institutional domains. Key informant interviews involved village officials, traders, processors, and extension agents, generating data on market relationships, value chain dynamics, and institutional constraints, which were used to inform the market, and institutional.

Focus group discussions were carried out with farmer groups, village officials, agricultural extension, agribusiness institutions, to capture community priorities, collective capacities, and development aspirations, linking to the institutional, and biophysical. Sensory evaluation sessions with panelists and provided data on product quality attributes, flavor profiles, and processing methods relevant to the sensory quality domain. Field observations offered direct evidence of farming practices, infrastructure conditions, and environmental characteristics, informing both biophysical and sensory aspects of analysis. Additionally, document reviews of government reports, market studies, and organizational records supplied statistical data, policy context, and organizational histories that supported all domains of the framework.

Data Analysis

Data analysis in this study followed a triangulation protocol designed to integrate findings across multiple methods and framework domains. The process began with within-method analysis, which applied standard statistical techniques for quantitative data and thematic analysis for qualitative information. This was followed by cross-method triangulation, where results from different data collection methods were compared to identify areas of convergence and divergence in the evidence. The next step involved domain integration, synthesizing findings from the four framework domains: biophysical uniqueness, sensory quality, market valuation, and institutional readiness to develop a comprehensive understanding of commodity potential. The outcome of this analysis was a strategic commodity portfolio supported by convergent evidence across the four domains.

Result and Discussion

This section presents the findings from the application of the Place-Based Commodity Selection Framework to Desa Suci, moving beyond traditional descriptive analyses to a prescriptive, multi-dimensional assessment. The framework's four interconnected domains, Biophysical Uniqueness, Sensory Quality, Market Valuation, and Institutional Readiness, collectively build a convergent line of evidence to strategically identify and validate the superior commodity for sustainable agribusiness development. The following integrated analysis demonstrates how Desa Suci's inherent capabilities can be aligned with market opportunities to overcome the persistent production-market misalignment.

Biophysical Uniqueness

The agroecological profile of Desa Suci establishes a compelling foundation for its biophysical uniqueness, positioning coffee as the superior commodity. Situated on the southern slopes of Mount Argopuro, the village encompasses a significant topographic gradient from 300 to 900 meters above sea level, with its commercial plantations operating within this elevational band (Perumda Perkebunan Kahyangan Jember, 2025). This geographic duality, combining lowland areas with nearly 40% hilly terrain, creates a distinct terroir. The region's volcanic andosol soils, derived from Mount Argopuro, provide inherent fertility, yet present a critical paradox as these quaternary volcanic residual soils suffer from structural weakness and significant leaching of major elements, reducing shear strength and nutrient retention capacity (PSLH-EFSD UGM, 2011)). This complex pedological condition is further nuanced by a microclimate characterized by temperatures ranging from 18°C to 29°C, with frequent fog at higher elevations, creating ideal conditions for coffee development (BMKG, 2025).

The analysis reveals a clear zonation of coffee suitability based on elevation gradients. The majority of Desa Suci's plantation area (1,273 hectares) demonstrates high suitability for Robusta coffee (*Coffea canephora*), which thrives at elevations below 1,000 meters (Akbar, 2023). Meanwhile, the upper elevation range (800-900 meters) presents marginal but viable conditions for Arabica coffee (*Coffea arabica*), particularly through compensatory quality-focused post-harvest processing. This elevational specialization is evidenced by the successful operation of Kebun Gunungpasang, which focuses on premium fully-washed Robusta, while the region also produces export-quality Arabica beans commanding premium prices of IDR 130,000-150,000 per kilogram, achieved through meticulous wet processing and rigorous bean selection (Perumda Perkebunan Kahyangan Jember, 2025).

Suci Village, located in Panti District, lies on the slopes of the Argopuro Mountains, characterized by an undulating topography at mid to high elevations. This microclimatic condition generates relatively cool temperatures with substantial diurnal temperature variation, which has the potential to enhance the accumulation of chemical compounds in the robusta coffee beans cultivated in the area. Consequently, robusta coffee from Suci Village possesses the potential to exhibit more complex flavor characteristics compared to typical lowland robusta.

Sensory Quality

Smallholder coffee cultivation on the Argopuro slopes in Desa Suci, located within the Perhutani forest area, is carried out under the canopy of forest trees (shade trees) such as mahogany, sengon, and teak. This shade-grown or agroforestry cultivation system influences the quality and sensory characteristics of the resulting coffee. Shade trees play a critical role in shaping the microclimate of coffee plantations by reducing light intensity, stabilizing humidity, and lowering ambient

temperatures. These conditions slow the ripening process of coffee cherries, resulting in denser beans with a better balance of sugars and a more complex composition of secondary metabolites. Such conditions enhance the complexity of flavor, aroma, and body (Muschler, 2001; Vaast et al., 2006). Studies conducted in various coffee-producing countries have demonstrated that the type and density of shade trees can influence the sensory characteristics of coffee. Coffee cultivated under diverse shade-tree canopies shows significant differences in acidity, aroma, and body compared to unshaded coffee (Bosselmann et al., 2009).

The microclimatic conditions of the Argopuro slopes in Desa Suci create relatively cool temperatures with a pronounced diurnal temperature range, which has the potential to enrich the chemical composition of Robusta coffee beans cultivated in the area. Consequently, Robusta coffee from Desa Suci has the potential to produce more complex flavor characteristics than typical lowland Robusta. Elevation has been shown to significantly affect the chemical composition of coffee beans. Several studies indicate that increasing altitude slows the ripening rate of coffee cherries, allowing for greater accumulation of sugars, organic acids, and secondary metabolites such as phenolics and volatile compounds. Changes in these chemical constituents subsequently influence sensory quality, including increased flavor complexity, more balanced acidity, and richer aroma profiles (Hu et al., 2024; Worku et al 2018; Mehari, 2021). Other environmental factors associated with topography, such as lower average temperatures and larger diurnal temperature variations, further contribute to the development of distinctive flavor profiles (Ahmed, et al., 2021).

The sensory quality evaluation for Desa Suci's coffee reveals significant potential for specialty grade classification despite the absence of direct professional cupping data. While specific sensory profiles for Desa Suci remain undocumented in academic literature, robust regional benchmarks provide compelling evidence for quality projection. The proximity to Kebun Gunungpasang, which produces premium-grade Robusta coffee using full-wash processing methods, establishes a strong quality baseline for Desa Suci's coffee (Perumda Perkebunan Kahyangan Jember, 2025). This institutional standard suggests Desa Suci's coffee likely falls within the commercial plus to specialty grade threshold.

Regional quality benchmarks demonstrate the achievable standards for Jember's coffee. The officially certified Robusta Java Raung Gunitir Geographical Indication coffee consistently scores above 80.00 on the Specialty Coffee Association scale, characterized by caramelly, brown sugar, spicy, and nutty flavor notes with distinctive astringency that forms part of its regional identity (Kemenkumham RI, 2022). Similarly, Robusta Tirtoyudo from the region achieves cupping scores of 75.38 with dominant cocoa, caramel, and peanut notes, despite showing some roasting-related imperfections (Maligan et al., 2022). These established profiles provide crucial reference points for Desa Suci's quality

aspirations.

In this study, a sensory evaluation (hedonic test) of Robusta coffee from the Argopuro foothills was conducted to assess consumer preferences or the degree of liking toward the product. The sensory test was performed on three types of coffee produced from cultivation areas located at different sites along the Argopuro foothills. The tested samples consisted of Robusta Coffee from the Argopuro Foothills A (Sample A), originating from Karangpring Village, Sukorambi Subdistrict; Robusta Coffee from the Argopuro Foothills B (Sample B), produced by farmers in Suci Village, Panti Subdistrict; and Robusta Coffee from the Argopuro Foothills C (Sample C), originating from the Argopuro foothills in Panti Subdistrict. The sensory attributes evaluated included taste, color, aroma, texture, and overall acceptance, using a 1–5 scale (1 = strongly dislike, 2 = dislike, 3 = somewhat like, 4 = like, 5 = strongly like). The study employed 30 untrained panelists, characterized as follows: 20 panelists (67%) were aged 20–40 years, and 10 panelists (33%) were above 40 years; 27 panelists (90%) were male and 3 (10%) were female. Based on coffee consumption frequency, 13 panelists (43%) consumed coffee frequently, 8 (27%) regularly, and 9 (30%) rarely. The results of the sensory (hedonic) analysis of Robusta coffee from the Argopuro foothills are presented in the table 1.

The sensory (hedonic) evaluation results for Robusta Coffee from the Argopuro Foothills B (Sample B), cultivated in Suci Village, indicate that for the taste attribute, most untrained panelists rated the sample as strongly like (27%) and like (27%). For the color attribute, 47% of panelists selected like and 20% strongly like. For aroma, the majority indicated like (40%) and strongly like (27%). For texture, most panelists also selected like (43%) and strongly like (13%). For the overall attribute, 47% rated the sample like and 27% strongly like. Based on these sensory evaluation results, Robusta Coffee from the Argopuro Foothills B—cultivated in Suci Village—was well-liked by untrained panelists with diverse characteristics in terms of taste, color, aroma, texture, and overall acceptance. This finding also indicates that the Robusta coffee from the Argopuro slopes in Desa Suci possesses sensory characteristics that are well-liked by consumers and demonstrates strong market potential, reflecting a positive consumer preference profile

The sensory analysis indicates that Desa Suci's coffee shares the characteristic Robusta attributes of strong body and balanced flavor profile while potentially developing unique terroir-driven characteristics. Evidence from neighboring Argopuro regions shows that innovative processing methods, particularly lactic fermentation, can produce exceptional flavor complexity in Robusta coffees, generating chocolate, papaya, and cabernet-like winey notes (Frothymonkey, 2025).

Strategic recommendations focus on three critical areas: implementing selective harvesting of ripe cherries to ensure raw material quality, standardizing full-wash processing to enhance clean

cup characteristics, and exploring controlled fermentation techniques to develop unique flavor complexity. These approaches, combined with formal quality certification and terroir-specific branding, position Desa Suci's coffee for successful market differentiation and premium pricing in the specialty coffee segment.

Market Valuation

The market valuation analysis for Desa Suci's coffee reveals significant value capture potential through local processing and strategic market positioning. Primary data indicate substantial income differentials between selling raw green beans versus processed coffee. When farmers sell green beans at farmgate prices of IDR 4,000/kg, they capture minimal returns, while local processing into ready-to-market products (OC) commands IDR 55,000/kg, generating gross revenues of IDR 4.4-11 million per hectare and net profits of approximately IDR 4 million per hectare at higher production volumes. This value disparity underscores the critical importance of local hilirisasi for economic sustainability.

The value chain analysis exposes substantial price margins captured by intermediaries, with collectors selling green beans for IDR 8,000-10,000/kg after purchasing from farmers at IDR 4,000/kg. This 50-60% price differential represents significant value leakage from the local economy. With Desa Suci's estimated annual production of 140-225 tons across 200-250 hectares, even processing 10% locally could demonstrate the economic viability of value-added production and provide a compelling proof concept for broader implementation.

Demand for coffee at the local, national, and international levels continues to exhibit an upward trend. In the domestic market, coffee consumption in Indonesia has consistently increased over the past two decades, in line with the growth of coffee-drinking culture, the rising number of coffee shops, and the diversification of coffee-based beverage products. According to data from the International Coffee Organization (ICO, 2021), coffee consumption in Indonesia has risen from an average of 0.8 kg per capita per year in the early 2000s to more than 1.3 kg per capita per year in 2020. This development indicates a strengthening potential in the domestic coffee market. At the global level, coffee remains one of the most highly demanded agricultural commodities after petroleum. Global coffee consumption is projected to continue increasing at an annual growth rate of approximately 2%, driven primarily by emerging demand from Asian countries such as China, South Korea, and ASEAN member states (ICO, 2019). This rising global demand presents substantial market opportunities for Indonesian smallholder coffee, including coffee produced in Desa Suci, to expand its market access. Global market trends further validate coffee's strategic positioning. The specialty coffee market shows growing consumer preference for unique flavor profiles, with Argopuro Arabica demonstrating distinctive tasting notes of strawberry, kiwi, and black

tea that align with market demands for innovative flavors (Tokopedia, 2025).

Desa Suci's competitive advantage is strengthened by several structural factors. Kecamatan Panti demonstrates regional specialization with a Location Quotient exceeding 1 for coffee production, indicating natural export orientation and surplus production capacity (Haryati, 2008). The ongoing Geographical Indication certification for Kopi Robusta Java Argopuro Jember provides crucial product differentiation and brand protection in competitive specialty markets (PPID Kabupaten Jember, 2022). Successful regional models, particularly from neighboring Bondowoso where farmers have achieved European market access through strategic partnerships and value-added products like coffee wine, demonstrate the replicability of premium market penetration strategies (Universitas Jember, 2021).

The institutional landscape presents both opportunities and challenges. The village's IDR 100 million budget allocation for coffee development indicates local government commitment, while partnerships with Perumda Perkebunan Kahyangan provide access to standardized processing facilities and quality control. However, inconsistent implementation of profit-sharing agreements with Perhutani and potential resistance from established collectors represent significant governance challenges that require transparent mechanisms and inclusive engagement strategies.

Theoretical frameworks support the recommended market integration approach. Endogenous Development Theory emphasizes leveraging local resources and capabilities, while Porter's Competitive Advantage framework highlights the importance of product differentiation through unique terroir characteristics and processing methods. The Global Value Chain perspective identifies specific governance points where intervention can enhance local value capture, particularly through direct trade relationships that bypass traditional intermediaries.

Strategic recommendations focus on three priority areas: establishing standardized production recording systems to enable precise evaluation and planning, strategically allocating village funds to post-harvest processing infrastructure and collective marketing mechanisms, and developing inclusive transition models that transform collector roles toward logistics and distribution services within reformed value chains. These approaches collectively address the fundamental market valuation challenges while building sustainable market linkages for Desa Suci's coffee sector.

Institutional Readiness

The agribusiness institutional actors involved in supporting the development of coffee as a leading commodity in Suci Village include cooperatives, the Forest Village Community Institution or Lembaga Masyarakat Desa Hutan (LMDH), the Suci Village Government, the

Village-Owned Enterprise or Badan Usaha Milik Desa (BUMDes), the Forest Farmer Groups or Kelompok Tani Hutan (KTH), the Agricultural Extension Institutions, the Village Technology Service Post or Pos Pelayanan Teknologi Desa (Posyantekdes), Tourism Awareness Groups or Kelompok Sadar Wisata (Pokdarwis), State Forestry Public Company or Perusahaan Umum Kehutanan Negara (Perhutani), local coffee agro-tourism enterprises, the Regional Plantation Company or Perusahaan Daerah Perkebunan (PDP) Kahyangan, as well as external institutions such as the Office of Food Crops, Horticulture, and Plantations of Jember Regency or Dinas Tanaman Pangan, Hortikultura dan Perkebunan (DTPHP), higher education institutions, and banking institutions that facilitate access to capital.

The cooperative (Koperasi) institutions operating in Desa Suci that contribute to the development of coffee farming include the Koperasi Dinoyo Asri Suci and the Koperasi Ketajek Makmur Sejahtera. Koperasi Dinoyo Asri Suci facilitates partnership arrangements between coffee farmers and Perhutani and coordinates the management of Perhutani forest land for coffee cultivation through the LMDH (Forest Village Community Institution). Koperasi Ketajek Makmur Sejahtera in Desa Suci plays a strategic role in serving as a communication bridge between local communities or heirs and the Jember Regency Government, as well as land management authorities such as the regional plantation company (PDP). Through the cooperative, the Ketajek community gains an official mechanism to participate in land dispute resolution, heir verification processes, and the formulation of coffee plantation management programs. Additionally, the cooperative functions as a platform for collective advocacy. Its presence strengthens the bargaining position of farmers and land heirs in securing land tenure rights and ensures access to local economic development programs. This reinforces the notion that the cooperative serves not only as an economic institution but also as an essential governance instrument in community-based agrarian management in the Ketajek area.

The role of LMDH for coffee farmers in Desa Suci is to provide legal access for farmers to cultivate coffee on Perhutani forest land under the forest canopy. This institutional mechanism ensures secure access and legal protection for farmers engaged in coffee cultivation within Perhutani areas, thereby minimizing land conflict risks. LMDH also supports forest conservation through an agroforestry system, in which coffee is cultivated beneath the forest stands, and ensures the involvement of forest-edge communities in maintaining forest sustainability. This partnership arrangement generates mutual benefits: the community gains legal access to Perhutani land for coffee cultivation, reducing the likelihood of forest encroachment, while the forest area benefits from community-based protection reinforced by agroforestry coffee cultivation.

The Village-Owned Enterprise (BUMDes) is one of the key local

economic institutions that plays a vital role in strengthening community-based economic activities derived from local potential, including smallholder coffee production in Suci Village, Panti Subdistrict, Jember Regency. Based on the outcomes of the 2024 and 2025 Village Consultative Meetings (Musyawarah Desa/ MusDes), the community and the village government have agreed upon a strategic direction for local economic development, designating the development of smallholder coffee as one of the priority sectors to be managed under BUMDes business units. BUMDes Desa Suci holds a strategic role not only as a manager of village funds but also as a facilitator and economic incubator for coffee farmer groups. Through the Musdes decisions, BUMDes has been allocated funding to support the development of smallholder coffee across both upstream (cultivation) and downstream (marketing and processing) segments. This institutional support is expected to assist farmers in accessing production inputs, capital financing, technical training, and market channels for their harvests.

The institutional landscape surrounding Suci's Village coffee sector demonstrates considerable readiness for market integration, characterized by established organizational structures and strategic partnerships. The presence of Perusahaan Daerah Perkebunan (PDP) Kahyangan Jember, operating Kebun Gunungpasang in Panti District, become a proven institution in premium coffee production using standardized full-wash processing methods. This Regional Plantation Company (PDP) serves as a quality benchmark and potential technical partner for local development initiatives, offering access to established processing facilities and quality control mechanisms that are essential for meeting export standards.

The role of the local government is highly strategic in advancing smallholder coffee development. One of the concrete forms of support provided by the Jember Regency Government is the establishment of the Coffee Village within the Boma Agrotourism area (Gunung Pasang, Suci Village, Panti Subdistrict). The Coffee Village functions as a center for education, promotion, and coffee-based tourism development, creating opportunities for smallholder coffee farmers to expand their marketing networks. Agrotourism also contributes to diversifying rural household income through the integration of agriculture and tourism activities (Antara & Arifin, 2016). Formal recognition and policy support further reinforce the institutional framework. The designation of Jember as Indonesia's Center for Premium Robusta Coffee in 2021 demonstrates the regional government's strong commitment to developing the coffee sector. The success of the Bondowoso region in penetrating European markets through partnerships between universities and the private sector provides a validated institutional model that can be adapted to the context of Desa Suci, illustrating the replicability of such strategic collaborative arrangements.

The Department of Food Crops, Horticulture, and Plantations of

Jember Regency (DTPHP), together with universities in Jember, supports the development of coffee farming in Desa Suci by providing training, appropriate technology facilitation, and technical assistance to local coffee farmers. The training delivered by DTPHP Jember primarily focuses on upstream cultivation practices, whereas the training provided by university academics encompasses a broader range of topics, covering both upstream and downstream sectors. These training and mentoring activities contribute to improving farmers’ technical and managerial capacities. Demonstrate that farmer capacity-building efforts that integrate both technical and managerial competencies can enhance the competitiveness of smallholder coffee in both local and global markets (Wahyudi and Jati, 2012)

Strategic institutional recommendations focus on three priority areas. First, establishing centralized processing facilities leveraging Panti's production surplus would enable economies of scale in roasting, packaging, and value-added product development. Second, formalizing direct trade partnerships based on the successful Bondowoso model would improve market access and price premiums. Third, implementing coordinated quality control systems across the value chain would ensure consistency and maintain specialty grade standards. These institutional enhancements would position Desa Suci to capitalize on its geographic advantages while addressing current limitations in market connectivity and value capture.

Synthesis Desa Suci's Superior Commodity

The integrated four-domain analysis provides conclusive and multi-faceted evidence for designating coffee as Desa Suci's superior commodity. The Biophysical Uniqueness domain establishes the foundational terroir with its distinct elevational gradient and volcanic soils, while the Sensory Quality domain projects its potential to meet specialty grade standards through strategic post-harvest management. Crucially, the Market Valuation domain quantifies the significant economic opportunity, demonstrating that local value addition can increase returns by over 1300 percent, transforming the local economy. Finally, the Institutional Readiness domain confirms the presence of crucial organizational structures and partnerships necessary to execute this transition.

Collectively, the evidence transcends mere historical production data, instead painting a compelling strategic portrait of what Desa Suci can achieve. The analysis confirms that coffee is not just a traditionally grown crop, but a viable vehicle for sustainable rural development. The identified challenges, from soil conservation and quality standardization to value chain governance, are not barriers to selection, but rather define the precise focus areas for strategic intervention. Therefore, the Place-Based Commodity Selection Framework successfully bridges the production-market gap, providing a validated, evidence-based rationale for focusing development resources on coffee. This sets the stage for the subsequent formulation of targeted strategies to fully realize Desa Suci's potential as a producer of high-value, specialty coffee.

Table 1. Sensory Evaluation (Hedonic Test) Results for Robusta Coffee from the Argopuro Slopes

Scale Criteria	Frequency					Presentage (%)				
	Color	Aroma	Taste	Texture	Overall	Color	Aroma	Taste	Texture	Overall
Robusta Coffee from Argopuro Slopes A (Sample A)										
Strongly Dislike (1)	1	1	4	2	1	3%	3%	13%	7%	3%
Dislike (2)	9	5	8	3	5	30%	17%	27%	10%	17%
Somewhat Like (3)	9	6	6	14	8	30%	20%	20%	47%	27%
Like (4)	10	17	8	10	12	33%	57%	27%	33%	40%
Strongly Like (5)	1	1	4	1	4	3%	3%	13%	3%	13%
Robusta Coffee from Argopuro Slopes B (Sample B)										
Strongly Dislike (1)	1	1	1	1	1	3%	3%	3%	3%	3%
Dislike (2)	3	5	7	6	4	10%	17%	23%	20%	13%
Somewhat Like (3)	6	4	6	6	3	20%	13%	20%	20%	10%
Like (4)	14	12	8	13	14	47%	40%	27%	43%	47%
Strongly Like (5)	6	8	8	4	8	20%	27%	27%	13%	27%
Robusta Coffee from Argopuro Slopes C (Sample C)										
Strongly Dislike (1)	1	1	2	2	1	3%	3%	7%	7%	3%
Dislike (2)	6	5	7	4	5	20%	17%	23%	13%	17%
Somewhat Like (3)	6	8	6	7	5	20%	27%	20%	23%	17%
Like (4)	12	11	10	11	10	40%	37%	33%	37%	33%
Strongly Like (5)	5	5	5	6	9	17%	17%	17%	20%	30%

Source: Primary Data (2025)

Simpulan

The research successfully demonstrates how integrating the Socio-Economic Governance pillar with biophysical potential creates a comprehensive approach to rural development. The Place-Based Commodity Selection Framework provides a definitive answer to the fundamental question of commodity selection by moving beyond descriptive-historical methods to a prescriptive-strategic paradigm.

The four-domain analysis conclusively identifies coffee as Desa Suci's superior commodity, validating this selection through interconnected evidence of biophysical suitability, sensory quality potential, significant market value opportunity, and institutional readiness. This integrated assessment successfully bridges the production-market gap by demonstrating that coffee represents not merely a traditional crop but a viable vehicle for sustainable rural development when approached strategically. The Place-Based Commodity Selection Framework ultimately provides a transformative approach to rural development, enabling communities like Desa Suci to transition from price-takers to value-capturers in global agricultural markets.

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