STRATEGIC POSITION AND AGRIBUSINESS DEVELOPMENT: FARMERS' PERCEPTION OF SUSTAINABLE SACHA INCHI AGRIBUSINESS IN PANGANDARAN REGENCY, WEST JAVA, INDONESIA

Saiful Rahman[1]*, Rudi Priadi[2], Dedi Djuilansah[2], Zulfikar Noormansyah[2]
[1]Doctoral Program in Agribusiness, Graduate School, Siliwangi University, Tasikmalaya.
[2]Lecturer, Doctoral Program (S3) of Postgraduate School, Siliwangi University.
Email: *kampuskarya@gmail.com
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ABSTRACT

The development of underutilized agricultural commodities offers opportunities for rural income diversification, although its sustainability depends on farmers' acceptance, production capabilities, and market accessibility. This study examines farmers' perceptions of sustainable sacha inchi (Plukenetia volubilis L.) agribusiness in Pangandaran Regency, Indonesia, and identifies institutional and economic considerations for its development. A quantitative descriptive survey was conducted in August 2026 involving all 86 identified sacha inchi farmers through a census approach. Data were collected using structured questionnaires, field observations, and stakeholder discussions. Farmers' responses were analyzed using frequency distributions, while internal and external development conditions were assessed through IFAS–EFAS analysis. The results indicate that 60 farmers (69.8%) supported sustainable agribusiness development, 17 (19.8%) were neutral, five (5.8%) expressed uncertainty, and four (4.7%) provided invalid responses. Internal and external factor scores reached 2.49 and 2.88, respectively, suggesting opportunities for development alongside constraints involving technical knowledge, financing, farmer organizations, and

market stability. The findings highlight the importance of institutional strengthening, accessible agricultural extension, quality assurance, and transparent marketing partnerships. Sustainable development requires integrating farmers' acceptance with institutional capacity and reliable market arrangements.

Keywords: farmer-perception; sacha-inchi; sustainable-agribusiness; rural development; agricultural institution

INTRODUCTION

Agricultural diversification has become increasingly important for improving the economic resilience of rural communities, particularly where farming households depend on a limited range of established commodities. The introduction of underutilized crops provides opportunities to broaden agricultural production, create alternative income sources, and develop value-added products. Sacha inchi (*Plukenetia volubilis* L.), a perennial climbing plant originating from the Amazon region, has attracted attention because of its nutritional composition, particularly its high concentrations of unsaturated fatty acids and considerable protein content. The crop also offers potential applications in functional foods, cosmetics, and other agro-industrial products. Nevertheless, the successful introduction of sacha inchi into new agricultural regions requires consideration of agronomic adaptation, cultivation practices, farmer knowledge, and the organization of production systems. Its nutritional and commercial potential alone cannot establish the economic sustainability of farming activities without adequate institutional and market support (Kodahl & Sørensen, 2021).

The transition toward sustainable agriculture involves interactions among production technologies, environmental management, household resources, and socioeconomic institutions. Smallholder farmers frequently encounter difficulties in adopting agricultural innovations because of limited financial resources, insufficient technical assistance, and uncertain access to input and output markets. Research involving smallholder farming systems in Eastern and Southern Africa demonstrates that agricultural transformation depends not only on the availability of improved technologies but also on access to extension services, credit, land, and markets. Although these findings originate from farming systems outside Indonesia, they illustrate the importance of evaluating the institutional conditions accompanying agricultural diversification. For emerging commodities such as sacha inchi, the development of a sustainable agribusiness system therefore requires attention to farmers' production capacities and the economic arrangements supporting cultivation and commercialization (Branca et al., 2022).

Farmers' perceptions constitute an important consideration in understanding agricultural development because favorable attitudes toward an innovation do not necessarily guarantee its adoption or continued application. Farmers may recognize potential economic benefits while remaining constrained by limited information, inadequate production facilities, or uncertain financial returns. Research on smallholder dairy farmers in West Java, Indonesia, demonstrates substantial differences in technological awareness and adoption associated with farmers' socioeconomic characteristics, organizational relationships, and access to extension services. These findings suggest that agricultural development programs should recognize differences among farmers rather than treating farming communities as homogeneous groups. Examining perceptions toward sacha inchi development can therefore provide an initial understanding of acceptance and uncertainty, although perceptions alone cannot establish actual adoption behavior or long-term commitment (Akzar et al., 2023).

The sustainability of emerging agricultural enterprises also depends on farmers' ability to respond to production risks and changing environmental conditions. Agricultural development strategies increasingly emphasize resource-efficient cultivation, environmental protection, and practices that maintain productivity without creating excessive ecological pressures. Research concerning agroecological techniques among African smallholders identifies several approaches relevant to sustainable agricultural management, including soil conservation, biological management, and the integration of locally appropriate cultivation practices. Such approaches provide a useful conceptual basis for evaluating sustainable crop development. In sacha inchi farming, environmental considerations should consequently be incorporated into production planning, including appropriate land management, responsible agricultural input use, and the prevention of avoidable ecological degradation (Akanmu et al., 2023).

Market accessibility represents another important dimension of sustainable agribusiness development. The introduction of a relatively unfamiliar commodity may create opportunities for product differentiation and downstream processing, but producers can encounter uncertainty regarding product standards, buyer requirements, marketing channels, and price formation. Evidence from smallholder agricultural systems indicates that market accessibility can influence farmers' willingness to implement sustainable management practices, particularly

when agricultural improvements require additional investment. These considerations are relevant to sacha inchi because farmers require reliable commercial arrangements before expanding production or investing in postharvest facilities. Market development should therefore address transparency, product quality, buyer relationships, and the distribution of economic benefits throughout the agricultural value chain (Arifalo & Ilesanmi, 2022).

Institutional arrangements can support agricultural sustainability by facilitating collective action, technical assistance, product certification, and access to commercial opportunities. Farmer organizations may reduce individual transaction costs and improve coordination between producers, buyers, extension agencies, and public institutions. However, institutional development does not automatically produce sustainable outcomes, especially when farmers encounter differences in production capacity, organizational participation, or market requirements. Research on oil palm smallholders in Thailand demonstrates that the adoption of sustainability standards is influenced by institutional and socioeconomic conditions, including the characteristics of farmers and the arrangements surrounding certification systems. These findings highlight the need to evaluate institutional support as part of the development of emerging agricultural commodities rather than assuming that production expansion alone will improve sustainability (Nupueng et al., 2023).

Pangandaran Regency, West Java, Indonesia, represents a relevant setting for examining the development of sacha inchi as an emerging agricultural commodity. The original field investigation conducted in August 2026 identified 86 farmers cultivating sacha inchi and documented several development constraints, including limited cultivation and postharvest knowledge, relatively weak farmer organizations, restricted financing opportunities, and uncertain marketing arrangements. Although these conditions indicate challenges for sustainable agribusiness development, they also provide a basis for examining farmers' perceptions and identifying areas requiring institutional intervention. Studies of smallholder climate adaptation demonstrate that technological, informational, financial, and institutional barriers can interact, making it necessary to assess development constraints as interconnected conditions rather than isolated problems (Lamichhane et al., 2022).

This study aims to examine farmers' perceptions of sustainable sacha inchi agribusiness development in Pangandaran Regency and interpret the institutional and economic conditions affecting its development.

Specifically, the study analyzes the distribution of farmers' responses and uses internal and external factor assessments to identify development opportunities and constraints. The contribution of the research lies in integrating descriptive evidence on farmer acceptance with an assessment of the agribusiness environment surrounding an emerging crop. The analysis is intended to inform locally relevant agricultural extension, institutional strengthening, financing arrangements, and market coordination. The findings should be interpreted as a cross-sectional assessment rather than causal evidence of factors determining adoption or proof of long-term economic and environmental sustainability (Mdoda et al., 2023).

METHODOLOGY

This study employed a quantitative descriptive design to examine farmers' perceptions of sustainable sacha inchi (*Plukenetia volubilis* L.) agribusiness development and evaluate the internal and external conditions influencing its implementation. The research was conducted in Pangandaran Regency, West Java Province, Indonesia, in August 2026. The study area was purposively selected because sacha inchi cultivation had been introduced as an emerging agricultural activity in the region. The research focused on the economic, social, institutional, and environmental dimensions of agribusiness development. Descriptive quantitative analysis was combined with strategic assessment to identify existing development conditions and formulate context-specific alternatives. This approach recognizes the importance of examining agricultural sustainability through multiple dimensions while maintaining a distinction between observed conditions and strategic interpretations (Soulé et al., 2021).

The research population consisted of all 86 identified sacha inchi farmers in Pangandaran Regency. A census approach, or complete enumeration, was employed because the population was relatively small and accessible. Accordingly, all 86 farmers were included as respondents, without selecting a separate probability sample. The individual farmer served as the primary unit of analysis, while the agribusiness system provided the contextual unit for strategic assessment. The census design enabled a comprehensive description of the identified farming population, although its results should not be interpreted as statistically representative of sacha inchi farmers outside the study area. The assessment was limited to the conditions observed during the research period. This population-specific approach was used to describe local agricultural conditions rather

than to estimate broader regional or national adoption rates (Breure et al., 2024).

Primary data were collected through structured questionnaires administered during farmer interviews, direct field observations, and discussions with relevant stakeholders. The questionnaire covered four dimensions: cultivation and postharvest practices, economic opportunities and constraints, social and institutional conditions, and environmental considerations. Farmers' responses were classified into agreement, neutrality, and lack of knowledge, while incomplete or inconsistent responses were identified as invalid. Field observations and stakeholder discussions provided supplementary information regarding cultivation conditions, farmer organizations, access to financing, product standards, market opportunities, and production risks. Secondary information was obtained from scientific literature, relevant institutional documents, and official reports. These sources were used to contextualize the findings and support the identification of development factors. The combination of farmer responses and contextual information was intended to provide a multidimensional description of the agribusiness system rather than a direct measurement of its long-term sustainability (Alvarez-Ochoa et al., 2024).

Farmers' perceptions were analyzed using descriptive statistics consisting of frequency distributions and percentages. The frequency of each response category was divided by the total number of respondents and multiplied by 100. The percentage was calculated using Equation (1):

$$\boldsymbol{P} = \left(\frac{\boldsymbol{f}}{\boldsymbol{n}}\right) \times \mathbf{100}\% \quad (1)$$

where P represents the percentage of respondents, f denotes the frequency within each response category, and n represents the total number of respondents (86). The recorded frequencies were 60 respondents expressing agreement, 17 expressing neutrality, five reporting a lack of knowledge, and four providing invalid responses. The corresponding percentages were calculated as 69.77%, 19.77%, 5.81%, and 4.65%, respectively. Invalid responses were retained when describing the overall distribution but excluded from substantive interpretation of farmers' perceptions. Accordingly, the valid-response denominator was 82 farmers. Descriptive analysis was used to characterize the observed distribution without estimating causal relationships or testing differences between respondent groups (Arifalo & Ilesanmi, 2022).

The internal and external conditions of sacha inchi agribusiness were assessed using Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis supported by Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) matrices. Eight internal factors and eight external factors were identified from the original research assessment. The internal factors consisted of four strengths and four weaknesses, while the external factors comprised four opportunities and four threats. Each factor was assigned a weight according to its relative importance, with the total weight in each matrix equal to 1.00. Ratings ranged from 1 to 4 according to the criteria applied in the original assessment. Weighted scores were calculated by multiplying factor weights by their respective ratings. The overall IFAS and EFAS values were obtained by summing the weighted scores. SWOT-based strategic assessment provides a structured means of integrating agricultural development conditions and identifying strategic alternatives, although the resulting priorities depend on the factors and judgments incorporated into the matrices (Aghasafari et al., 2020).

The strategic position of sacha inchi agribusiness was determined by calculating the difference between cumulative strength and weakness scores for the horizontal axis and the difference between cumulative opportunity and threat scores for the vertical axis. The total strength and weakness scores were 1.72 and 0.77, respectively, producing a horizontal coordinate of 0.95. The total opportunity and threat scores were 1.68 and 1.20, respectively, producing a vertical coordinate of 0.48. The resulting coordinates (0.95, 0.48) placed the agribusiness system in the first SWOT quadrant under the analytical framework used in the original study. The identified factors were subsequently combined to formulate Strength–Opportunity (SO), Weakness–Opportunity (WO), Strength–Threat (ST), and Weakness–Threat (WT) strategies. The strategic alternatives were interpreted in relation to farmer capacity building, institutional strengthening, financing, production management, postharvest standards, and marketing partnerships. These alternatives represent analytical recommendations rather than interventions whose effectiveness has been experimentally demonstrated (Batu Bara et al., 2026).

RESULTS AND DISCUSSION

Farmers' Perceptions of Sustainable Sacha Inchi Agribusiness

Farmers' perceptions provide an initial indication of the social acceptance of sacha inchi (*Plukenetia volubilis* L.) as an emerging

agribusiness commodity in Pangandaran Regency. The census conducted in August 2026 involved 86 farmers and identified differences in their responses to sustainable agribusiness development. The findings demonstrate that agreement was the predominant response, although a proportion of farmers expressed neutrality or insufficient knowledge. This distribution suggests that favorable acceptance constitutes an important starting point for development initiatives but does not necessarily indicate farmers' capacity to implement sustainable production practices independently. The distinction between acceptance and implementation is particularly relevant to emerging agricultural commodities because the transition from favorable perceptions to actual investment and sustained cultivation may depend on information, institutional support, and economic opportunities.

Table 1. Distribution of Farmers' Perceptions of Sustainable Sacha Inchi Agribusiness

No	Response category	Frequency	Percentage (%)
1	Agreement	60	69.77
2	Neutral	17	19.77
3	Lack of knowledge	5	5.81
4	Invalid response	4	4.65
	Total	**86**	**100.00**

Source: Primary data processed (2026).

The predominance of agreement indicates that sacha inchi development has a favorable initial social foundation among the surveyed farmers. However, this finding should be interpreted as a measure of expressed perception rather than confirmed willingness to increase cultivation area, invest additional capital, or adopt specific production technologies. The presence of neutral and uncertain respondents also indicates that farmer acceptance is not uniform. These differences are relevant to agricultural extension because farmers may require different forms of assistance according to their understanding of production requirements, market conditions, and perceived economic benefits. The findings therefore support a differentiated development approach that combines technical information, practical demonstrations, and access to reliable market information rather than assuming that a single intervention will be equally appropriate for all farmers.

The four invalid responses require separate methodological consideration. Excluding these responses leaves 82 valid observations, of which 60 represent agreement, 17 neutrality, and five lack of knowledge.

The resulting proportions among valid responses are 73.17%, 20.73%, and 6.10%, respectively. This adjustment does not change the predominance of agreement, but it clarifies the interpretation of farmers' substantive responses. The presence of invalid observations also highlights the importance of questionnaire completeness and consistent response classification. Because the original dataset does not provide item-level responses or a validated perception index, the findings are appropriately interpreted through descriptive distributions rather than statistical models of behavioral intention or adoption.

Internal Conditions of Sacha Inchi Agribusiness Development

The internal factor assessment identified four strengths and four weaknesses associated with sustainable sacha inchi agribusiness development. The strengths concerned farmer acceptance, agroclimatic suitability and land availability, continuous fruiting characteristics, and farmers' previous agricultural experience. The weaknesses included limited technical knowledge, relatively weak farmer organizations, restricted access to financing, and the absence of established product quality standards. The weighted assessment produced a total internal score of 2.49, comprising a strength score of 1.72 and a weakness score of 0.77. These findings suggest that favorable internal conditions coexist with organizational and technical limitations that may restrict the conversion of production potential into stable agribusiness performance.

Table 2. Internal Factor Analysis Summary (IFAS) of Sacha Inchi Agribusiness

Internal factors	Weight	Rating	Score
Strengths			
Farmer acceptance and support	0.15	4	0.60
Agroclimatic suitability and land availability	0.13	4	0.52
Continuous fruiting characteristics	0.10	3	0.30
Farmers' agricultural experience	0.10	3	0.30
Total strengths	**0.48**		**1.72**
Weaknesses			
Limited cultivation and postharvest knowledge	0.15	1	0.15
Weak farmer organizations	0.13	2	0.26
Limited capital and financing access	0.12	1	0.12
Absence of product quality standards	0.12	2	0.24
Total weaknesses	**0.52**		**0.77**
Total IFAS	**1.00**		**2.49**

Source: Primary data processed (2026).

The internal assessment reveals a distinction between agricultural potential and the organizational capacity required to commercialize production. Farmer acceptance and suitable cultivation conditions can support the introduction of sacha inchi, but limited technical knowledge and financial resources may constrain production consistency and the ability to meet buyer requirements. Weak farmer organizations can further restrict collective purchasing, access to technical assistance, and marketing coordination. Consequently, agribusiness development should not be assessed solely through cultivation potential or favorable perceptions. Institutional strengthening and practical technical assistance are necessary components of any strategy intended to improve the reliability of production and commercial participation. The IFAS scores describe the relative evaluations recorded in the study and should not be interpreted as direct measurements of farm profitability or environmental performance.

External Conditions of Sacha Inchi Agribusiness Development

The external assessment identified four opportunities and four threats affecting sacha inchi agribusiness. The opportunities included perceived growth in demand for omega-3-rich products, downstream processing potential, institutional support, and the possibility of developing products for Pangandaran's tourism-related markets. The threats concerned price and market uncertainty, competition from established commodities, pests and diseases, climate-related risks, and competition from other producing regions. The EFAS assessment produced a total score of 2.88, consisting of an opportunity score of 1.68 and a threat score of 1.20. The findings indicate that the assessed opportunities exceeded the assessed threats under the weighting and rating framework applied in the original research.

Table 3. External Factor Analysis Summary (EFAS) of Sacha Inchi Agribusiness

External factors	Weight	Rating	Score
Opportunities			
Demand for omega-3-rich products	0.15	4	0.60
Downstream processing potential	0.14	3	0.42
Government and university support	0.12	3	0.36
Tourism-related product markets	0.10	3	0.30
Total opportunities	**0.51**		**1.68**
Threats			
Price and market uncertainty	0.15	2	0.30
Competition from established commodities	0.12	3	0.36
Pest, disease, and climate risks	0.12	2	0.24

Competition from other regions	0.10	3	0.30
Total threats	**0.49**		**1.20**
Total EFAS	**1.00**		**2.88**

Source: Primary data processed (2026).

The external assessment emphasizes the importance of linking production development to realistic market opportunities. Potential demand for nutritional products and downstream processing may create additional value, but these opportunities remain dependent on consistent product quality, appropriate processing facilities, and reliable buyer relationships. Pangandaran's tourism economy may provide opportunities for local product differentiation, although the study did not directly measure tourist demand or consumer willingness to pay. Price uncertainty and competition therefore remain important considerations when assessing the commercial feasibility of production expansion. The EFAS results should be interpreted as an assessment of perceived strategic conditions rather than independent market forecasts or verified estimates of future demand.

Strategic Position and Agribusiness Development Implications

The strategic position was calculated by comparing the weighted internal and external factor scores. The horizontal coordinate was determined by subtracting weaknesses (0.77) from strengths (1.72), producing 0.95. The vertical coordinate was obtained by subtracting threats (1.20) from opportunities (1.68), producing 0.48. These positive coordinates place the assessed agribusiness system in Quadrant I of the SWOT framework, indicating that the strengths and opportunities identified in the assessment exceed the corresponding weaknesses and threats. This position provides a rationale for considering Strength–Opportunity strategies, although implementation must also address the weaknesses and risks identified in the study. The resulting strategic position is illustrated in Figure 1.

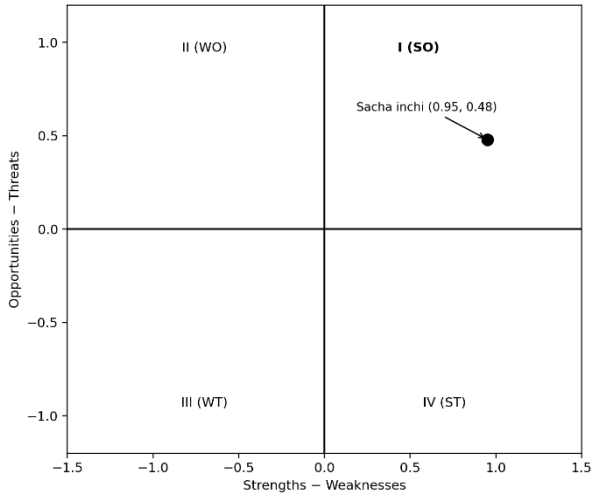


Figure 1. SWOT Strategic Position of Sustainable Sacha Inchi Agribusiness in Pangandaran
Source: Primary data processed (2026).

Institutional Strengthening and Sustainable Agribusiness Development

The combination of favorable farmer perceptions and institutional limitations indicates that strengthening farmer organizations is essential for translating agriculturas interest into sustainable agribusiness participation. Farmer groups and cooperatives may facilitate collective input procurement, agricultural extension, financing access, and product marketing. Nevertheless, organizational membership alone does not guarantee that farmers receive equal benefits. A scoping review of smallholder farmer organizations demonstrates that access to market information, logistical assistance, agricultural training, and financial services constitutes an important component of institutional effectiveness. In Pangandaran, these findings suggest that institutional development should emphasize practical services, transparent management, and accessible support for farmers with different levels of production experience and financial capacity. Such institutional arrangements may help address the weaknesses identified in the IFAS assessment while supporting the development of coordinated production and marketing activities (Bizikova et al., 2020).

The development of collective marketing arrangements also requires attention to farmers' incentives and organizational participation. Evidence from organic rice farmer groups in northeastern Thailand demonstrates that participation in collective marketing is associated with socioeconomic characteristics, farming experience, perceived economic benefits, and

institutional membership conditions. These findings suggest that the establishment of a farmer organization should be accompanied by clear economic functions and mechanisms enabling members to participate in decisions. For sacha inchi farmers in Pangandaran, collective marketing could support product aggregation, coordination of postharvest handling, negotiation with buyers, and dissemination of price information. Effective collective marketing requires institutional arrangements that provide tangible benefits and maintain farmers' participation over time (Methamontri et al., 2022).

Market Accessibility and Agribusiness Sustainability

The findings also emphasize the importance of improving market accessibility before encouraging extensive production expansion. Although the EFAS assessment identified opportunities associated with nutritional products, downstream processing, and tourism-related markets, the original research did not provide transaction-level data on product prices, sales volumes, processing costs, or profitability. Consequently, the commercial potential of sacha inchi remains a strategic opportunity rather than an empirically demonstrated financial return. Research synthesizing smallholder participation in high-value agricultural markets identifies access to credit, productive assets, and cooperative participation as important determinants of market entry. These findings indicate that commercialization strategies should address financial and institutional barriers alongside product development. In Pangandaran, the establishment of transparent purchasing arrangements, product quality requirements, and reliable buyer relationships may therefore be necessary before production expansion can be considered economically sustainable (Ola & Menapace, 2020).

Institutional inclusion represents another important consideration because collective agribusiness arrangements may benefit farmers differently according to their resources and capacity to participate in organizational decisions. Evidence from smallholder dairy producer organizations in Kenya demonstrates that organizational structures can influence both membership opportunities and participation in decision-making. These findings are relevant to sacha inchi development because differences in access to capital, technical knowledge, and marketing information may affect farmers' ability to benefit from collective arrangements. Institutional strengthening should therefore include transparent membership procedures, accountable decision-making, equitable access to information, and mechanisms for representing farmers

with limited resources. Such arrangements can support the social dimension of sustainability while reducing the risk that development opportunities become concentrated among relatively advantaged producers (Mwambi et al., 2020).

Implications for Sustainable Sacha Inchi Agribusiness

The integration of perception analysis and strategic assessment suggests that sustainable sacha inchi agribusiness development should be approached as a coordinated process involving farmer capacity, institutional organization, product quality, and market accessibility. The predominance of favorable perceptions provides a basis for agricultural extension and organizational development, whereas the identified weaknesses indicate the need for practical training, financing arrangements, and production standards. Recent evidence from Indonesian farmer groups indicates that managerial capacity and collective action are associated with improved market accessibility, emphasizing the importance of organizational management in agricultural commercialization. For Pangandaran, these findings support a development framework in which farmer organizations coordinate training, production planning, quality control, market information, and buyer relationships. However, the effectiveness of these interventions should be assessed through subsequent research involving farm-level economic performance, institutional participation, and measurable environmental outcomes (Permadi & Winarti, 2025).

CONCLUSIONS

The findings demonstrate that sustainable sacha inchi (*Plukenetia volubilis* L.) agribusiness development in Pangandaran Regency has a favorable foundation in farmers' perceptions, although several technical, economic, and institutional constraints remain. Of the 86 farmers surveyed, 60 respondents (69.77%) expressed agreement with sustainable agribusiness development, 17 respondents (19.77%) were neutral, five respondents (5.81%) reported insufficient knowledge, and four responses (4.65%) were classified as invalid. These findings indicate that favorable perceptions predominate among the identified farming population but should not be interpreted as direct evidence of adoption readiness, investment capacity, or long-term sustainability. The results emphasize that farmers' acceptance represents an initial condition for agribusiness development rather than a sufficient determinant of its successful implementation.

The internal and external assessments further demonstrate the relationship between agricultural potential and structural development constraints. The IFAS score of 2.49 and EFAS score of 2.88 produced SWOT coordinates of 0.95 and 0.48, respectively, positioning sacha inchi agribusiness in Quadrant I of the applied strategic framework. This position indicates that the assessed strengths and opportunities exceeded the corresponding weaknesses and threats. Nevertheless, limitations involving cultivation and postharvest knowledge, farmer organizations, financing accessibility, product quality standards, and market uncertainty require systematic attention. Sustainable development strategies should therefore integrate agricultural extension, institutional strengthening, appropriate financing arrangements, product standardization, collective marketing, and transparent partnerships with potential buyers. The implementation of these strategies should proceed gradually and consider farmers' actual production capabilities and market conditions.

This study contributes a descriptive assessment of farmers' perceptions and strategic development conditions for an emerging agricultural commodity in Pangandaran Regency. Its findings provide a basis for developing farmer-centered agribusiness initiatives that connect social acceptance with institutional capacity and market accessibility. However, the research was limited to a census of 86 identified farmers during a single observation period, while the strategic assessment relied on weighted evaluations of internal and external factors. The study did not directly measure farm profitability, environmental outcomes, or the effectiveness of proposed interventions. Future research should therefore examine production costs, farm income, market demand, institutional performance, environmental sustainability indicators, and changes in farmers' participation over time. Integrating these measurements would provide stronger empirical evidence for evaluating the economic viability, social inclusiveness, and environmental sustainability of sacha inchi agribusiness development.

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