

Agrotourism for Sustainable Rural Development: A Case Study of Garut Selatan

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Article History

Received : 12/09/2024

Revised : 19/09/2024

Accepted : 01/11/2024

ABSTRACT

Background: Rural communities face economic challenges due to market volatility, climate change, and rural depopulation. Agrotourism has emerged as a strategy for economic diversification, offering rural areas opportunities for sustainable development. However, its implementation varies due to differences in policy support, infrastructure, and community engagement. This study explores the potential of sustainable agrotourism as a driver of rural economic development in Garut Selatan, Indonesia.

Methods: A qualitative case study approach was adopted, involving semi-structured interviews with key stakeholders, focus group discussions (FGDs), and policy document analysis. Thematic analysis was conducted to identify patterns, and data triangulation was applied to enhance validity and reliability.

Results: The study finds that Garut Selatan possesses strong agricultural and cultural assets that can support agrotourism, including tea plantations, organic farms, and traditional farming practices. Agrotourism has the potential to improve rural livelihoods, create employment, and support environmental sustainability. However, challenges such as inadequate infrastructure, financial constraints, and weak stakeholder coordination hinder its development.

Conclusions: Sustainable agrotourism can serve as a key driver of rural economic development if supported by comprehensive policies, improved infrastructure, and capacity-building initiatives. The adoption of the Pentahelix model, integrating academia, business, community, government, and media, is essential for sustainable growth.

Implications: These findings provide insights for policymakers, businesses, and local communities to develop agrotourism as a long-term economic strategy while preserving environmental and cultural heritage.

Limitations: The study relies on qualitative methods, which may limit generalizability. Future research should incorporate quantitative assessments to measure economic impact and tourist preferences for more comprehensive insights.

Keywords: Sustainable agrotourism, rural economic development, Policy Networks, tourism diversification

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1. INTRODUCTION

Rural communities globally are confronting significant challenges in achieving sustainable economic growth while preserving their natural and cultural heritage. Traditional agriculture, long the cornerstone of rural economies, faces threats from market volatility, climate change, and rural depopulation (Pretty, 2018). In response, many rural areas are adopting agrotourism as a strategy for economic diversification and sustainable development (Gannon, 1994; Barbieri & Mshenga, 2008). Agrotourism, a subset of rural tourism, integrates agricultural activities with tourism, enabling visitors to experience farm life, learn about sustainable farming practices, and engage with local communities (Philip et al., 2010).

Sustainable agrotourism aligns with the principles of sustainable rural development, emphasizing economic viability, environmental conservation, and social inclusion (Sharpley & Vass, 2006). It has been demonstrated to create new income streams for farmers, alleviate rural poverty, and support biodiversity

conservation (Lane, 2009). Moreover, the fusion of tourism and agriculture can enhance the resilience of rural economies by reducing dependence on a single economic sector (Tew & Barbieri, 2012). However, developing agrotourism necessitates meticulous planning to ensure that economic benefits do not compromise environmental integrity or cultural authenticity (Sonnino, 2004).

Despite the increasing recognition of agrotourism's benefits, its implementation varies widely across regions due to differences in policy support, infrastructure, and community engagement (Hegarty & Przezborska, 2005). In many rural areas, particularly in developing countries, agrotourism remains underdeveloped due to insufficient investment, lack of technical expertise, and inadequate marketing strategies (Flanigan et al., 2014). Furthermore, there is a pressing need for empirical studies assessing the economic and social impacts of agrotourism on rural livelihoods (Barbieri et al., 2008).

Garut Selatan, a region in Indonesia rich in agricultural resources and cultural heritage, presents a promising opportunity for agrotourism development. However, its potential remains largely untapped due to challenges such as limited infrastructure, lack of awareness, and weak institutional support (Rahmawati et al., 2021). Addressing this gap, the present study aims to analyze the potential of sustainable agrotourism as a catalyst for economic growth in rural communities, with a particular focus on Garut Selatan.

This study aims to explore the potential of sustainable agrotourism as a driver of rural economic development in Garut Selatan. Specifically, it seeks to identify the key agricultural and cultural assets that can support agrotourism development, assess the economic, environmental, and social impacts of agrotourism on rural livelihoods, and evaluate the challenges and opportunities associated with its implementation. Furthermore, this research aims to provide policy recommendations that can enhance agrotourism as a sustainable economic strategy, ensuring long-term benefits for local communities while preserving environmental and cultural heritage.

This research contributes to the expanding body of literature on sustainable agrotourism by offering insights into its feasibility and impact within a developing country context. Focusing on Garut Selatan, the study provides a case study that can inform policy decisions, guide investment strategies, and support local communities in leveraging agrotourism for sustainable development. Additionally, the findings may serve as a model for other rural regions seeking to integrate agriculture and tourism to achieve economic resilience.

2. THEORETICAL FRAMEWORK

2.1. Sustainable Development

Sustainable development serves as the fundamental framework for this study. As defined by the Brundtland Commission (1987), sustainable development is a process that meets present needs without compromising future generations' ability to meet theirs. This concept is widely adopted in rural economic development strategies, as it balances economic viability, environmental conservation, and social well-being. Sustainable rural tourism, particularly agrotourism, aligns with this approach by promoting income diversification for rural communities while ensuring responsible environmental management. The United Nations Sustainable Development Goals (SDGs) provide a structured approach to sustainability, with SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 15 (Life on Land) being directly relevant to agrotourism development. Agrotourism can contribute to these goals by stimulating local economies, encouraging eco-friendly farming practices, and preserving biodiversity. In Garut Selatan, where agriculture is a dominant sector, sustainable agrotourism offers an opportunity to enhance rural livelihoods while safeguarding natural and cultural assets.

2.2. Sustainable Tourism

Sustainable tourism theory expands upon the principles of sustainable development by specifically addressing tourism's economic, environmental, and socio-cultural impacts. According to the United Nations World Tourism Organization (UNWTO, 2018), sustainable tourism should generate economic benefits for local communities, minimise environmental damage, and foster respect for cultural heritage. Effective sustainable tourism requires a balance between tourist satisfaction and local community empowerment, ensuring that tourism development does not lead to over-exploitation of resources or social inequality. Previous studies (Bramwell & Lane, 2011) indicate that the success of sustainable tourism depends on responsible governance, community involvement, and the implementation of sustainability policies. In rural areas, tourism often relies on natural landscapes and local traditions, making sustainability even more critical. Agrotourism, as a subset of rural tourism, follows these principles by integrating agricultural activities into tourism experiences, thereby fostering a deeper connection between visitors and rural livelihoods.

2.3. Rural Tourism

Rural tourism plays a crucial role in economic diversification by offering alternative income sources beyond traditional farming. According to Lane & Kastenholz (2015), rural tourism is characterised by small-scale businesses, strong community involvement, and nature-based activities. It helps maintain rural populations by creating employment opportunities while preserving cultural heritage. Research shows that successful rural tourism initiatives depend on accessibility, infrastructure, and stakeholder collaboration (Hegarty & Przeborska, 2005).

2.4. Agrotourism

Agrotourism, as a form of rural tourism, provides tourists with immersive farm-based experiences such as organic farming, livestock care, and agro-processing (Phillip et al., 2010). Studies indicate that agrotourism benefits local farmers by increasing income stability, strengthening rural entrepreneurship, and promoting environmental sustainability (Barbieri & Streifeneder, 2019). Moreover, successful agrotourism initiatives often rely on unique agricultural products and local traditions, which enhance tourism appeal and create market opportunities for rural producers. In Garut Selatan, where agriculture remains a dominant economic activity, developing agrotourism can create synergies between farming and tourism, ensuring that both sectors support each other sustainably.

2.5. Governance and Policy Networks

Governance plays a vital role in ensuring the sustainability of agrotourism initiatives. Effective governance in sustainable tourism refers to how policies, institutions, and stakeholders regulate and manage tourism development to ensure economic, environmental, and social balance (Bramwell & Lane, 2011). Well-designed policies can prevent over-commercialisation, regulate land use, and provide incentives for responsible tourism practices (Harvey, 2014). Sustainable agrotourism governance requires collaboration among multiple stakeholders, including local governments, private enterprises, and community organisations. Research suggests that community-based tourism approaches, which empower local residents in decision-making processes, lead to more equitable tourism benefits and stronger community engagement (Hampton & Jeyacheya, 2020). Without proper governance, agrotourism risks environmental degradation, economic leakage, and loss of local cultural authenticity. In Garut Selatan, regulatory frameworks should focus on land-use policies, sustainability certifications, and tourism impact assessments to maintain the integrity of rural landscapes and local traditions.

2.6. The Pentahelix Stakeholder Model

A multi-stakeholder approach is essential for ensuring the sustainability of agrotourism. The Pentahelix Model provides a structured framework for stakeholder collaboration, involving government, private sector, academia, local communities, and media (Höglund, 2018). Government institutions play a regulatory role by providing infrastructure support, setting tourism policies, and ensuring environmental sustainability (Sutawa, 2012). The private sector contributes by investing in tourism businesses, developing eco-friendly tourism facilities, and marketing rural destinations (Lane & Kastenholz, 2015). Academia plays a crucial role in conducting research on best practices in sustainable agrotourism and providing training for local entrepreneurs (Pretty, 2018). Local communities serve as the main custodians of agrotourism, ensuring cultural authenticity and equitable benefit distribution (Byrd et al., 2009). Meanwhile, media platforms play a significant role in promoting sustainable travel behaviours and educating tourists about responsible tourism (Suryanto et al., 2022). By integrating the Pentahelix Model, Garut Selatan can establish an inclusive agrotourism sector that maximises economic benefits while preserving environmental and cultural heritage.

3. METHOD

This study adopts a qualitative research approach with a case study design to explore the potential of sustainable agrotourism as a driver of rural economic development in Garut Selatan. A case study methodology is appropriate for investigating complex social phenomena within their real-world context (Yin, 2018) and allows for an in-depth understanding of agrotourism's economic, environmental, and socio-cultural impacts. Primary data will be collected through semi-structured interviews with key stakeholders, including local farmers, government officials, tourism operators, community leaders, and representatives from academia, ensuring a comprehensive perspective on agrotourism development (Bryman, 2016). Additionally, focus group discussions (FGDs) will be conducted to explore community perceptions, expectations, and challenges in implementing sustainable agrotourism (Silverman, 2020).

To capture the broader economic and policy dimensions, policy document analysis will be carried out, examining government regulations, tourism development plans, and sustainability policies relevant to agrotourism in Indonesia (Creswell & Creswell, 2018). The selection of respondents will follow a purposive sampling strategy, ensuring the inclusion of individuals with direct involvement in agrotourism and rural economic development (Guest, Namey, & Mitchell, 2017). Thematic analysis will be employed to identify patterns and insights from the collected qualitative data, following Braun and Clarke's (2006) systematic framework. To strengthen data reliability and validity, triangulation will be applied by cross-referencing interview data with policy documents and existing literature, minimising biases and enhancing the study's credibility (Patton, 2015). This methodological approach aligns with the study's objectives by identifying key agricultural and cultural assets that support agrotourism, assessing its economic, environmental, and social impacts, and evaluating its challenges and opportunities. Moreover, the findings will contribute to policy recommendations aimed at enhancing agrotourism as a sustainable economic strategy while ensuring the preservation of Garut Selatan's environmental and cultural heritage.

4. RESULTS AND DISCUSSION

4.1. Potential of Sustainable Agrotourism as a Catalyst for Rural Economic Development in Garut Selatan

Garut Selatan, a region in West Java, Indonesia, is endowed with abundant natural beauty and a rich cultural heritage, positioning it as a prime candidate for sustainable agrotourism development. The area's diverse agricultural landscape, featuring commodities such as rice, coffee, and various fruits, offers a unique opportunity to integrate tourism with agriculture, thereby fostering economic growth in rural communities. However, challenges such as limited market access and inadequate infrastructure have historically hindered the full potential of these agricultural assets, often resulting in lower commodity prices for local farmers (Garut Selatan di Ambang Pemekaran, 2023).

The strategic development of sustainable agrotourism in Garut Selatan can serve as a multifaceted catalyst for rural economic development. By transforming traditional farming practices into tourist attractions, farmers can diversify their income sources, reducing reliance on conventional agriculture and mitigating economic vulnerabilities. This diversification is particularly pertinent in the face of global market fluctuations and climate change, which have historically impacted agricultural productivity. The Food and Agriculture Organization (FAO) highlights that agrotourism enables farming families to sell their products directly to consumers, expanding their market reach and enhancing income stability (FAO, 2023).

Moreover, agrotourism can stimulate the local economy by creating employment opportunities beyond farming. The development of agrotourism infrastructure—such as homestays, guided tours, and local craft markets—necessitates a workforce, thereby generating jobs in hospitality, transportation, and retail sectors. This employment expansion can curb rural-urban migration by providing viable economic prospects within the community. A study on community-based agro-ecotourism in West Java found that such initiatives contribute to economic equity and rural development, benefiting local communities both internally and externally (Sutawa, 2021).

Cultural preservation is another significant benefit of agrotourism. Tourists' interest in authentic experiences encourages the maintenance of traditional practices, crafts, and festivals. This cultural engagement not only enriches the tourist experience but also instills pride among local residents, fostering a sense of identity and community cohesion. The revitalization of cultural heritage through agrotourism has been observed in various Indonesian regions, where traditional arts and crafts have experienced a resurgence due to tourist demand (Kurniawan & Khademi-Vidra, 2024).

Environmental sustainability is inherently promoted through well-managed agrotourism. The necessity to maintain the aesthetic and ecological appeal of the landscape encourages the adoption of sustainable farming practices, such as organic agriculture and integrated pest management. These practices not only enhance biodiversity but also ensure the long-term viability of the agricultural environment, aligning economic interests with ecological stewardship. The FAO emphasizes that agrotourism can serve as a platform for disseminating sustainable agricultural practices, benefiting both the environment and local communities (FAO, 2023).

However, the successful implementation of agrotourism in Garut Selatan requires a strategic and collaborative approach. The Pentahelix model, which advocates for the involvement of five key stakeholders—academia, business, community, government, and media—provides a comprehensive framework for sustainable tourism development. Each stakeholder plays a pivotal role: academia contributes research and innovation; businesses provide investment and marketing expertise; the community offers local knowledge and hospitality; government supplies regulatory support and

infrastructure; and media facilitates promotion and information dissemination. The synergy among these stakeholders can address potential challenges and harness opportunities, ensuring that agrotourism development is inclusive, culturally respectful, and environmentally sustainable (Pentahelix Model in Agrotourism Area Development in Karo Regency, 2023).

In conclusion, sustainable agrotourism holds substantial potential as a catalyst for rural economic development in Garut Selatan. By leveraging the region's agricultural and cultural assets, and through the collaborative efforts of multiple stakeholders, agrotourism can enhance local livelihoods, preserve cultural heritage, and promote environmental sustainability. Strategic planning and community engagement are essential to realize these benefits, ensuring that agrotourism development aligns with the needs and aspirations of the local population.

4.2. Economic, Social, and Environmental Impacts of Agrotourism on Rural Livelihoods

Agrotourism, the practice of integrating agricultural activities with tourism, has emerged as a multifaceted strategy to enhance rural livelihoods. Its impacts span economic, social, and environmental dimensions, each contributing uniquely to the development and sustainability of rural communities.

Economic Impacts:

Agrotourism serves as a catalyst for economic diversification in rural areas. By attracting tourists to agricultural settings, it creates additional revenue streams for farmers and local businesses. This influx of visitors stimulates demand for local products and services, thereby boosting the rural economy. For instance, a study in Kisumu County revealed that 95.62% of respondents viewed agrotourism as a viable venture for farmers, indicating its potential to alleviate poverty and improve livelihoods (Okech et al., 2015).

Moreover, agrotourism fosters entrepreneurship and job creation. The development of agrotourism infrastructure—such as lodging, guided tours, and local craft markets—necessitates a diverse workforce, generating employment opportunities in hospitality, transportation, and retail sectors. This employment expansion can reduce rural-urban migration by providing viable economic prospects within the community. In Scotland, national parks have been reported to generate over £700 million annually for the economy, primarily through tourism-related activities, underscoring the substantial economic benefits of integrating tourism with natural and agricultural landscapes (The Times, 2024).

Social Impacts:

Agrotourism plays a pivotal role in preserving and promoting cultural heritage. Tourists' interest in authentic rural experiences encourages the maintenance of traditional practices, crafts, and festivals. This cultural engagement not only enriches the tourist experience but also instills pride among local residents, fostering a sense of identity and community cohesion. Research indicates that agrotourism can act as a catalyst for social dynamics and cultural heritage preservation, enhancing community engagement and attachment (Ponnusamy, 2023).

Furthermore, agrotourism enhances social cohesion by encouraging community collaboration. The collective effort required to develop and manage agrotourism initiatives fosters stronger social bonds and a shared sense of purpose among community members. This collaborative spirit can lead to improved local governance and a more resilient social fabric.

Environmental Impacts:

Sustainable agrotourism practices contribute to environmental conservation by promoting eco-friendly farming techniques and raising environmental awareness among both locals and visitors. The necessity to maintain the aesthetic and ecological appeal of the landscape encourages the adoption of sustainable practices, such as organic farming and integrated pest management. These practices not only enhance biodiversity but also ensure the long-term viability of the agricultural environment. A study in Batukliang District, Central Lombok Regency, Indonesia, highlighted that converting agricultural land into agrotourism areas led to positive environmental outcomes, including the adoption of sustainable agricultural practices and the preservation of natural resources (Kurniawan & Khademi-Vidra, 2024).

However, the environmental impact of agrotourism is contingent upon careful planning and management. Unregulated tourist activities can lead to environmental degradation, including soil erosion, pollution, and loss of biodiversity. Therefore, implementing measures such as visitor capacity limits, waste management systems, and environmental education programs is essential to mitigate potential negative impacts on the ecosystem.

4.3. Challenges and Opportunities in Implementing Sustainable Agrotourism in Garut Selatan

Sustainable agrotourism has been widely recognised as a strategy for promoting rural economic development while ensuring environmental conservation and cultural preservation (Lane & Kastenholz, 2015). However, the implementation of sustainable agrotourism in Garut Selatan, Indonesia, faces a series of complex challenges that must be addressed for it to be an effective driver of local economic growth. At the same time, there are considerable opportunities that, if strategically leveraged, can enhance the success of agrotourism initiatives in the region.

Challenges in Implementing Sustainable Agrotourism

1) Seasonal and Climatic Uncertainties

Agricultural cycles are highly dependent on seasonal variations, which directly impact the viability of agrotourism activities (Torres et al., 2021). Many crops and livestock products that form the core attractions of agrotourism experiences, such as fruit picking, dairy farming, or coffee processing, are only available during specific periods of the year. The reliance on seasonal harvests creates fluctuations in tourist arrivals, limiting economic sustainability. Additionally, climate change poses a growing risk to agrotourism, as unpredictable weather patterns, droughts, and extreme rainfall events can reduce the quality of agricultural output and disrupt tourism activities (Choi et al., 2018). In Garut Selatan, which has a tropical climate, unseasonal rainfall has already been observed to negatively impact agricultural yields, affecting both food security and the viability of agrotourism ventures (Puspitasari & Suryana, 2023).

2) Infrastructure Deficiencies

One of the major impediments to sustainable agrotourism development in Garut Selatan is inadequate infrastructure. Limited road connectivity, poor transportation facilities, and a lack of accommodation and sanitation facilities restrict the ease of access for tourists (Adhanisa & Santoso, 2024). According to Kurniawan and Khademi-Vidra (2024), rural tourism destinations require well-maintained roads, reliable public transportation, and tourist-friendly amenities to attract and retain visitors. In many villages of Garut Selatan, roads leading to agricultural areas remain underdeveloped, making travel challenging, especially during the rainy season. Furthermore, the absence of high-quality lodging options limits the potential for longer tourist stays, reducing economic benefits for local communities.

3) Lack of Skilled Human Resources

The effective management of agrotourism requires a combination of agricultural expertise and tourism-related skills, such as hospitality management, customer service, and digital marketing (Wulandari & Setiawan, 2023). However, rural communities in Garut Selatan often lack formal training in these areas. Farmers, who are key stakeholders in agrotourism, may not have the necessary knowledge to engage with visitors or promote their agricultural products effectively (Suryadi & Widiastuti, 2023). This lack of expertise reduces the competitiveness of agrotourism businesses and may result in poor visitor experiences, leading to lower tourist retention rates.

4) Limited Financial Support and Investment

Agrotourism development requires substantial financial investment for infrastructure improvements, marketing campaigns, and capacity-building initiatives. However, local farmers and small business owners often face difficulties in securing funding due to limited access to credit and high-interest loan structures (Kurniawan & Khademi-Vidra, 2024). Many government initiatives to support rural tourism remain underfunded or are difficult to access due to bureaucratic processes. Without sufficient financial backing, many promising agrotourism ventures fail to reach their full potential.

Opportunities in Implementing Sustainable Agrotourism

Despite the challenges, Garut Selatan has significant opportunities for sustainable agrotourism development. By leveraging its natural, cultural, and policy-driven advantages, the region can establish itself as a premier agrotourism destination in Indonesia.

1) Rich Natural and Agricultural Resources

Garut Selatan boasts a diverse agricultural landscape, featuring tea plantations, coffee farms, horticultural fields, and traditional agroforestry systems. These elements provide a strong foundation for unique agrotourism experiences (Adhanisa & Santoso, 2024). Tourists increasingly seek authentic experiences that connect them with nature and traditional farming practices, a trend that aligns well with the region's offerings (Choi et al., 2018).

2) Supportive Government Policies and Rural Development Initiatives

The Indonesian government has prioritised rural tourism development as part of its broader economic diversification strategy (Puspitasari & Suryana, 2023). Policy frameworks supporting sustainable tourism, including financial incentives for local businesses and infrastructural development plans, present a major opportunity for Garut Selatan. In particular, the proposed regional expansion of Garut Selatan as a separate administrative district has generated discussions on improving its economic landscape through enhanced tourism infrastructure and investment schemes (Suryadi & Widiastuti, 2023).

3) Growing Demand for Sustainable Tourism

There has been an increasing global preference for sustainable tourism options, with travellers seeking eco-friendly experiences that contribute to local communities (Torres et al., 2021). This shift in consumer behaviour presents an opportunity for Garut Selatan to position itself as a leader in sustainable agrotourism by promoting environmentally responsible and community-based tourism activities. Initiatives such as organic farming tours, farm-to-table dining experiences, and reforestation programmes can appeal to this segment of conscious travellers (Lane & Kastenholz, 2015).

4) The Role of the Pentahelix Model in Agrotourism Development

A key strategy for maximising the success of agrotourism in Garut Selatan is adopting the *Pentahelix Model*, which emphasises collaboration between five main stakeholders: government, private sector, academia, media, and local communities (Wulandari & Setiawan, 2023). Effective engagement among these stakeholders can drive sustainable development, with the government providing policy frameworks, the private sector investing in infrastructure and marketing, academic institutions conducting research and training, media promoting agrotourism initiatives, and local communities playing an active role in implementation.

Table 1. Recommendations for Sustainable Agrotourism Development in Garut Selatan

Stakeholder	Key Recommendations
Academia	Research and Development: Conduct studies on sustainable agricultural practices, innovative agrotourism models, and market trends to ensure economic viability and environmental sustainability.
	Capacity Building: Develop training programs for local farmers and entrepreneurs in hospitality management, marketing, and sustainable farming techniques.
Business	Investment and Infrastructure Development: Facilitate public-private partnerships (PPP) for developing accommodations, transportation, and recreational facilities aligned with sustainable principles.
	Marketing and Promotion: Leverage digital platforms, travel fairs, and social media campaigns to promote Garut Selatan as a premier agrotourism destination.
Community	Active Participation and Empowerment: Encourage local involvement in decision-making and establish cooperatives to ensure equitable profit distribution and strong resource management.
	Cultural Preservation: Develop programs to showcase traditional arts, crafts, and culinary practices, enhancing tourist experiences while preserving cultural heritage.
Government	Policy Formulation and Regulation: Implement land-use planning to prevent overdevelopment, provide incentives for eco-friendly practices, and establish sustainability standards for agrotourism operators.
	Infrastructure and Accessibility: Invest in roads, communication networks, and public utilities to improve accessibility and enhance local quality of life.
Media	Awareness and Education: Launch media campaigns (news, documentaries, and social media) to promote sustainable agrotourism and highlight successful case studies.
	Promotion and Branding: Develop compelling narratives and branding strategies to position Garut Selatan uniquely in the competitive tourism market.

Stakeholder	Key Recommendations
Integrated Strategies	Multi-Stakeholder Forum: Establish a platform for academia, business, community, government, and media to facilitate coordination and collaboration in sustainable agrotourism initiatives.
	Sustainable Practice Certification: Introduce a certification program for agrotourism operators adhering to environmental and sustainability best practices.
	Monitoring and Evaluation: Develop a framework for regular impact assessments to ensure continuous improvement and adaptation to emerging challenges.

The development of sustainable agrotourism in Garut Selatan requires a multi-stakeholder approach to address economic, social, and environmental concerns. The Pentahelix model provides a structured framework that integrates academia, business, community, government, and media to foster a collaborative and holistic strategy. The policy recommendations outlined in the table above highlight specific actions that each stakeholder can take to support sustainable agrotourism development.

1) Academia: Driving Research and Capacity Building

Academic institutions play a crucial role in advancing knowledge and innovation in sustainable agrotourism. Research on agricultural best practices, market trends, and visitor preferences can help tailor agrotourism strategies to the specific conditions of Garut Selatan (Lane & Kastenholz, 2015). Additionally, capacity-building programs can equip local farmers and entrepreneurs with essential skills in business management, hospitality, and digital marketing, ensuring that they can effectively manage and promote their agrotourism ventures (Wulandari & Setiawan, 2023). Collaboration between universities and local stakeholders is vital for developing training curricula that align with real-world challenges and opportunities.

2) Business: Investment and Market Expansion

The private sector is a key driver of infrastructure development and market expansion in agrotourism. Public-private partnerships (PPP) can provide much-needed investment for improving accommodations, transportation, and recreational facilities while ensuring that development remains aligned with sustainability principles (Torres et al., 2021). Additionally, businesses can leverage their expertise in digital marketing and branding to position Garut Selatan as an attractive agrotourism destination. Participation in travel fairs, influencer partnerships, and social media promotions can significantly boost tourist engagement and revenue generation (Choi et al., 2018).

3) Community: Active Participation and Cultural Preservation

Local communities are the backbone of agrotourism, as they provide the authentic experiences that tourists seek. Encouraging community participation in decision-making ensures that agrotourism development aligns with local values and benefits residents equitably (Puspitasari & Suryana, 2023). The establishment of cooperatives can strengthen local bargaining power and ensure fair profit distribution among stakeholders. Furthermore, cultural preservation initiatives—such as traditional arts, crafts, and culinary experiences—enhance the uniqueness of Garut Selatan's agrotourism offerings while safeguarding intangible heritage for future generations (Suryadi & Widiastuti, 2023).

4) Government: Policy and Infrastructure Development

A strong regulatory framework is essential for guiding sustainable agrotourism development. Governments should implement policies that prevent overdevelopment, encourage eco-friendly practices, and ensure high-quality tourism experiences (Kurniawan & Khademi-Vidra, 2024). Additionally, investing in infrastructure—such as road networks, public utilities, and digital connectivity—is crucial to improving accessibility and enhancing the overall visitor experience. By providing financial incentives and grants for sustainable agrotourism projects, the government can stimulate private sector investment and community engagement in rural tourism (Adhanisa & Santoso, 2024).

5) Media: Awareness, Branding, and Promotion

Media plays a significant role in shaping public perceptions and promoting sustainable tourism initiatives. Documentaries, news reports, and digital campaigns can highlight the economic, social, and environmental benefits of agrotourism, encouraging greater stakeholder participation (Torres et al., 2021). Additionally, strategic branding efforts that emphasize Garut Selatan's unique agricultural landscapes, cultural heritage, and eco-friendly tourism experiences can help

differentiate the region from competitors. Effective storytelling and engaging visuals can attract a growing market of eco-conscious travellers seeking meaningful and sustainable tourism experiences (Lane & Kastenholz, 2015).

6) **Integrated Strategies for Long-Term Sustainability**

A multi-stakeholder forum can serve as a collaborative platform for academia, business, community, government, and media to coordinate efforts, share insights, and address emerging challenges. Such forums ensure that policy decisions are inclusive and reflect the needs of all stakeholders (Wulandari & Setiawan, 2023). Additionally, implementing a **Sustainable Practice Certification** can incentivize agrotourism operators to adhere to environmental and social responsibility standards, enhancing the credibility of Garut Selatan's tourism sector (Kurniawan & Khademi-Vidra, 2024). Finally, a robust **monitoring and evaluation framework** is necessary to assess the long-term impact of agrotourism initiatives, allowing for adaptive management and continuous improvement.

By adopting the Pentahelix approach and implementing the recommended policies, Garut Selatan can develop a thriving and sustainable agrotourism sector that supports rural economic development, cultural preservation, and environmental stewardship. This integrated approach ensures that all stakeholders contribute to and benefit from agrotourism initiatives, creating a resilient and inclusive rural economy. With strategic investments, community empowerment, and collaborative governance, Garut Selatan can position itself as a model for sustainable agrotourism development in Indonesia and beyond.

5. CONCLUSION

The findings of this study highlight the significant potential of sustainable agrotourism as a driver of rural economic development in Garut Selatan. By leveraging the region's rich agricultural and cultural resources, agrotourism can enhance rural livelihoods, create employment opportunities, and foster environmental conservation. Key agricultural assets such as tea plantations, organic farms, and traditional farming practices, combined with cultural heritage elements, provide a strong foundation for developing a competitive and sustainable agrotourism sector. The study also reveals that when managed sustainably, agrotourism can contribute to poverty alleviation, community empowerment, and ecosystem preservation. However, several challenges, including inadequate infrastructure, limited financial support, and weak stakeholder coordination, must be addressed to fully realise the benefits of sustainable agrotourism in the region.

From a practical perspective, the study provides several important implications for local communities, businesses, and policymakers. For local communities, agrotourism presents an opportunity for economic diversification, skill development, and cultural preservation. Strengthening community-based initiatives and cooperatives is essential to ensure that local farmers and entrepreneurs actively participate in and benefit from the industry. The findings suggest that businesses should make strategic investments in agrotourism facilities, digital marketing, and supply chain partnerships to enhance marketability and sustainability. Additionally, adopting eco-friendly practices aligned with global sustainability trends is crucial for businesses to maintain long-term competitiveness in the agrotourism sector.

In terms of policy recommendations, this study underscores the importance of adopting the Pentahelix model, which integrates collaboration among academia, business, community, government, and media. Infrastructure development should be prioritised by improving road access, public utilities, and digital connectivity to support the growth of agrotourism. Capacity-building initiatives should be implemented through education and training for farmers and tourism operators, focusing on hospitality management, sustainable farming techniques, and business development. Financial support mechanisms, such as microfinance programs and public-private partnerships, should be established to facilitate investment in sustainable agrotourism. Additionally, sustainability regulations must be enforced to ensure proper land-use planning, waste management, and biodiversity conservation to mitigate negative environmental impacts. Lastly, marketing and branding strategies should be strengthened through digital platforms, media campaigns, and tourism networks to position Garut Selatan as a leading agrotourism destination.

Despite the promising potential of sustainable agrotourism, this study acknowledges several limitations. The research primarily relies on qualitative data and case studies, which may limit the generalizability of findings to other rural regions. Future research could incorporate quantitative economic

impact assessments and visitor satisfaction surveys to provide more empirical evidence. Moreover, while the study explores stakeholder perspectives, further investigation is needed to understand consumer behaviour and tourist preferences regarding agrotourism experiences in Garut Selatan. Given the dynamic nature of tourism and agricultural markets, continuous monitoring and policy adjustments will be essential to ensure the long-term sustainability and competitiveness of the agrotourism sector.

In conclusion, sustainable agrotourism in Garut Selatan holds significant potential to drive rural economic development while preserving the region's agricultural and cultural heritage. By fostering collaboration among stakeholders and implementing well-designed policies, Garut Selatan can develop a resilient and sustainable agrotourism sector that benefits both local communities and the broader tourism industry. However, addressing key challenges through strategic investments, capacity building, and integrated policy frameworks is crucial to achieving these objectives. Future research should further explore scalable models for sustainable agrotourism that can be replicated in other rural regions, ensuring that agrotourism remains a viable and impactful economic strategy for rural development.

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