



The Role of Government Schemes and Support in Agri-Tourism in Kerala: Challenges to Sustainable Development in the Age of Artificial Intelligence

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Abstract

Agri-tourism, also referred to as agricultural or farm tourism, has gradually evolved as a significant component of rural and sustainable tourism across the globe. Tracing its roots to nineteenth-century Europe, where urban populations sought respite from industrial cities in rural landscapes, agri-tourism has grown into a multidimensional sector promoting recreation, education, and rural development. In India, with its agrarian base and socio-economic dependence on agriculture, agri-tourism offers unique opportunities to connect farming with tourism and cultural heritage. Kerala, popularly known as "God's Own Country," has emerged as a fertile ground for integrating agriculture with tourism due to its diverse cropping patterns, cultural richness, and strong tourist inflows. This paper examines the role of government schemes and support in developing agri-tourism in Kerala, while also exploring the challenges to sustainability in the era of artificial intelligence. The discussion highlights the dual potential of agri-tourism as a source of supplementary income for farmers and as a tool for rural development, cultural preservation, and environmental awareness. The study relies primarily on secondary sources, including government reports, Kerala Economic Reviews, Census data, and academic literature. Findings indicate that while agri-tourism has considerable potential in Kerala, its sustainability depends on inclusive policies, technology integration, and community participation.

Keywords: Agri-tourism, sustainable development, artificial intelligence, Kerala, government schemes

Introduction

Agri-tourism represents a form of tourism that blends agricultural activities with recreation and education, providing tourists with direct engagement in rural life. Beyond its recreational appeal, agri-tourism serves broader objectives: it offers farmers an alternative source of income, fosters environmental awareness, and contributes to cultural preservation. In Kerala, where agriculture remains central to rural livelihoods despite structural shifts in the economy,

agri-tourism has acquired increasing significance. The combination of Kerala's lush landscapes, spice plantations, coconut groves, paddy fields, and high levels of human development makes the state an ideal location for agri-tourism ventures. Moreover, the global demand for sustainable and experience-based tourism further amplifies Kerala's potential in this niche sector.



Historical Context and Growth

The historical evolution of agri-tourism reflects changing socio-economic dynamics worldwide. In nineteenth-century Europe, particularly in Italy, France, and Switzerland, urban residents sought the countryside for rest and educational experiences. The twentieth century saw the expansion of farm tourism in North America, where farmers diversified incomes by hosting farm stays, harvest festivals, and “pick-your-own” activities. In India, the sector gained traction in the early 2000s, with Maharashtra pioneering organized agri-tourism initiatives. Kerala followed this trend, integrating agri-tourism into its model of “responsible tourism.” Farmers and cooperatives in Kerala began offering tourists authentic experiences such as paddy cultivation, toddy tapping, fishing, bullock-cart rides, and traditional cooking, thereby linking agriculture with cultural immersion and economic diversification.

The rise in tourist arrivals in Kerala further illustrates the demand for diversified tourism experiences. As shown in **Figure 1**, while the state witnessed a steady rise in domestic and foreign tourists until 2019, the COVID-19 pandemic led to a sharp decline. However, the recovery has been strong, with tourist numbers in 2023 surpassing pre-pandemic levels. This revival presents an opportunity to strengthen agri-tourism as part of Kerala’s tourism diversification strategy.

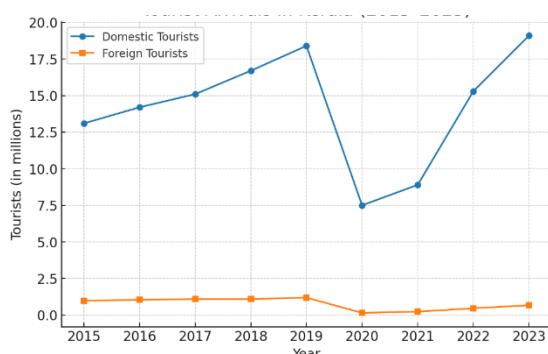


Figure 1: Tourist Arrivals in Kerala, 2015 - 2023
Source - Kerala Tourism Statistics, Department of Tourism, Government of Kerala (annual reports).

Agri-Tourism in Kerala: Potential and Opportunities

Kerala’s agrarian diversity and cultural heritage offer immense scope for agri-tourism. Regions like Wayanad, Munnar, Idukki, and Kumarakom have already become popular hubs where tourists can experience coffee and spice plantations, tea gardens, and rice paddies, while also engaging with local traditions. The benefits extend beyond farm incomes: rural infrastructure is improved, employment opportunities expand, and indigenous knowledge systems are preserved.

A growing number of farmers are diversifying into agri-tourism. While the majority remain dependent solely on traditional farming, an estimated 35 percent of farmers in Kerala have begun incorporating small-scale or full-scale agri-tourism initiatives such as homestays, spice tours, or organic farming workshops. This trend, depicted in **Figure 2**, highlights the gradual but steady expansion of agri-tourism as an alternative livelihood strategy.

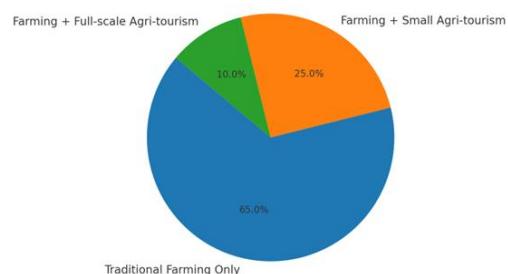


Figure 2 Farmer Participation in Agri-Tourism Activities in Kerala

Source: Kerala State Planning Board. (2023). Economic Review 2023. Government of Kerala

Role of Government Policies and Schemes

Government intervention has been instrumental in shaping the growth of agri-tourism. National-level schemes such as the Swadesh Darshan programme and the National Rural Tourism Mission have provided support for rural and farm-based tourism. In Kerala, state-level tourism policies have increasingly integrated agri-tourism into the broader tourism framework. Incentives in the form of subsidies,



capacity-building programmes, and certification schemes encourage farmers to diversify into tourism while adopting sustainable practices. Rural infrastructure development, skill enhancement for hospitality and entrepreneurship, and public-private partnerships further strengthen the institutional framework for agri-tourism. These initiatives not only expand the economic base of rural households but also reinforce Kerala's branding as a sustainable tourism destination.

Challenges to Sustainability in the Age of Artificial Intelligence

Despite its potential, agri-tourism faces several challenges, particularly in maintaining sustainability. Rapid commercialization of tourism, environmental degradation, and cultural commodification pose risks to its long-term viability. The integration of artificial intelligence presents both opportunities and challenges.

AI-driven tools can optimize resource use through precision farming, enhance visitor experiences through chatbots and personalized itineraries, and improve operational efficiency through predictive maintenance and smart booking systems. AI also enables better environmental monitoring and supports market insights for farm diversification. Yet, adoption remains uneven. As

Figure 3 shows, precision irrigation and market platforms are the most widely adopted AI tools among Kerala's agri-tourism ventures, while more advanced applications like chatbots and predictive maintenance are still in their early stages.

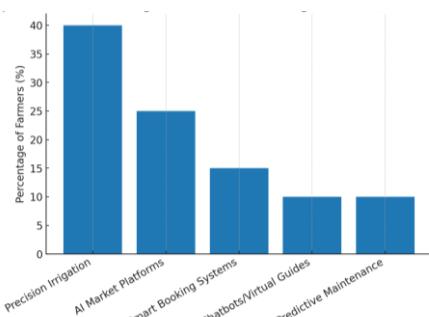


Figure 3: Adoption of AI Tools in Agri-Tourism and Farming in Kerala

NABARD. (2022). *Digital Agriculture: Emerging Technologies and Innovations*. Mumbai: National Bank for Agriculture and Rural Development.

While these technologies hold promise, they may also exacerbate the digital divide, marginalizing small farmers who lack resources or digital literacy. Ensuring inclusivity, affordability, and capacity-building must therefore remain priorities in Kerala's agri-tourism strategy.

Conclusion

Agri-tourism in Kerala embodies a promising pathway for sustainable rural development by combining agriculture, tourism, and cultural heritage. With strong government support, increasing tourist demand, and the emerging role of artificial intelligence, the sector is poised for significant growth. However, sustaining this growth requires conscious policy measures that balance economic benefits with ecological conservation and cultural integrity. The future of agri-tourism in Kerala depends on the state's ability to harness government schemes effectively, promote community participation, and adopt technologies in ways that empower rather than marginalize rural communities. If managed inclusively, agri-tourism can evolve into a resilient model of sustainable development in the digital age.

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