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AGRITOURISM - A DOUBLE-EDGED STRATEGY FOR RURAL DEVELOPMENT AND ENVIRONMENTAL SUSTAINABILITY

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Abstract:

Agritourism in Maharashtra has emerged as a significant livelihood diversification strategy for farming communities, offering supplementary income and fostering rural development. While the sector contributes positively to sustainable agriculture and environmental conservation, it also poses potential ecological risks when implemented without adequate regulatory oversight. Effective tourism strategies of a developing country can create revenue generating opportunities and provide sustainable employment for semi-skilled or unskilled workers. Effective tourism development demands a holistic mindset and a diverse investment strategy that spans the entire industry. Within this framework, this paper scrutinizes the double-edged impacts of agritourism simultaneously stimulates rural economic vitality, safeguards invaluable cultural patrimony, and enhances visitor literacy regarding agricultural practices. On the other hand, challenges such as increased environmental tracks, over tourism, and potential interruption of local traditions are discussed as well. This article reviews recent empirical studies, regional assessments, and sectoral analyses to highlight the environmental risks associated with agritourism across different Indian contexts, and argues for policy, planning, and regulatory reforms to minimize ecological damage.

Keywords: *Agritourism, sustainable agriculture, employment, environmental risks*

Introduction:

Agritourism is defined as the integration of tourism with agricultural activities, enabling visitors to experience rural lifestyles, farming practices, and local ecology. In Maharashtra, agritourism has experienced rapid growth due to rising urban interest in rural experiences and the necessity for farmers to diversify income sources (Reddy et al., 2017). Agriculture and its related activities are on the edge of a change for both the farmers as well as consumers. Agritourism is one such activity where people from the outside visit a farm on vacation and these activities includes farm stays, experiential farming, agro-ecological tours, and rural homestays embedding local culture and tradition. Agritourism has been defined and labelled in various ways in the literature provide a typology of definitions of Agritourism (Philips et al., 2010). Agri-tourism is any practice on a working farm that is designed to attract visitors. (Barbieri and Mshenga, 2008).

The conception has been successfully enforced in Indian countries like Maharashtra, Kerala, Rajasthan, Goa, Jharkhand, Gujarat, Punjab and Himachal

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Pradesh. pastoral tourism creates Employment for pastoral people and generates income for them. The villagers can provide better food and education for their children and their quality of life will improve. They have a supplementary source of income along with their agricultural income (Yavanarani, 2013). Despite its promise, agritourism often occurs in environmentally sensitive rural or semi-rural areas, which may lack the infrastructure and regulations to manage increased resource use, waste, land-use change, and biodiversity pressures. This review examines the documented environmental hazards linked to agritourism across India focusing on land-use conflict, waste and water management, biodiversity impact, and ecosystem fragility. This expansion, however, raises critical concerns regarding environmental sustainability. This paper analyses the environmental benefits and hazards associated with agritourism in Maharashtra, with a focus on its implications for sustainable resource management and ecological conservation.

Agritourism in India: Growth, Promise, and Underlying Pressures

Agritourism's potential as a sustainable rural development model, especially in small-scale, experience-based formats that more closely resemble ecotourism than mass tourism. Nevertheless, several structural challenges accompany agritourism's expansion across diverse Indian geographies: poor rural connectivity, limited infrastructure, seasonal dependency, and the risk of land-use shifting away from agriculture toward tourism infrastructure undermining long-term agricultural productivity. These pressures create a foundation where environmental hazards can emerge especially where regulations, planning, and ecological awareness are weak or absent.

Empirical Evidence of Environmental Hazards in Indian Agritourism : In comparative study carried on environmental hazards of agritourism across India and Kenya it was observed, roughly 38% of agritourism respondents reported environmental degradation primarily caused due to increased waste generation and excessive water use. Simultaneously, 37% reported human–wildlife conflicts, especially when farms are located adjacent to forested or natural habitats. While about 73% of respondents felt agritourism promoted eco-friendly farming including organic farming, water conservation, composting and supported biodiversity conservation (Thakur et al., 2025).

In ecologically fragile mountain regions, unregulated tourism and rural-tourism development pose acute threats. The expansion of tourism infrastructure, increased human presence, slope-stability risks, water-resource pressure, and biodiversity disturbances together threaten the fragile Himalayan ecology (Singh S et al., 2025).

Various descriptions and conceptual reviews of agritourism in India showed that although agritourism is often promoted as a sustainable tourism model, it may lead to land-use conflicts, monoculture land pressure, diversion of agriculture for tourism infrastructure, and over-exploitation of natural resources especially water and soil if not managed carefully (Dsouza K J et al., 2024).

Major Dimensions of Environmental Risk from Agritourism:

Based on the literature and observed cases, the environmental hazards from agritourism in India across regions can be broadly grouped as follows:

1. **Land-Use Change & Land-Use Conflict**

   Agritourism often incentivizes conversion of farmland or natural land into lodging, guest houses, tourist amenities sometimes permanently. This conversion may reduce the land available for cultivation, degrade soil health, reduce biodiversity, and shift rural economies away from

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agriculture. The risk is particularly high in monoculture-dominant agricultural regions where tourism viability undermines agricultural sustainability (Wondirad, A. et al., 2019)

2. **Resource Pressure: Water and Soil**
   Rural tourism increases demand for water (sanitation, accommodation, kitchens, landscaping), amplifying stress on groundwater or irrigation resources — especially critical in drought-prone or water-scarce regions. In mountain or fragile ecosystems, such extraction can disturb hydrological balance, degrade soil, and reduce water availability for farming and local communities (Thakur et al., 2025).
3. **Waste Generation and Pollution**
   Increased tourist footfall often leads to generation of solid waste (plastics, packaging, food waste), sewage, and wastewater which many rural areas lack capacity to manage. This can lead to contamination of soil, surface water, and groundwater, harming local ecology and public health (Thakur et al., 2025).
4. **Biodiversity Loss and Wildlife Conflicts**
   Generally, agritourism farms lie adjacent to forests or natural habitats, increased human presence, noise, introduced waste, and land-use change can disturb wildlife, fragment habitats, and heighten the risk of human–wildlife conflict. The construction and presence of roads have fragmented grass cover, leading to severe ecological consequences for native plant and animal species. Moreover, these areas experience greater disturbance and invasion by non-native species, facilitated by traffic moving into previously undisturbed habitats (Kamuaro, 2007). Ecotourism impacts species by assigning them market value; certain species, previously unvalued or little-known locally, become highly sought-after commodities. This commodification can erase the plants' social or cultural value and lead to overproduction within protected areas, often extending to the commodification of local people and their images as well (Higginbottom, K. 2006)
   Conversely, studies conducted in zoos suggest that the presence of tourists, along with their associated noise and unusual behaviour, might induce stress in the animals. However, zoo-based studies indicate that tourists may stress animals due to the noise and unusual behaviour they introduce. Based on zoo research, the noise and unusual behaviour brought by tourists could, conversely, lead to stress for the animals
   (Sherwen and Hemsworth, 2019).
   In agrotourism locations—such as petting zoos, open farms, and pasture tours the mere presence of tourists constitutes a significant environmental variable known as the "Visitor Effect." The volume of tourists, combined with unpredictable behaviours such as loud noises, chasing, or improper touching, can trigger distinct stress responses in farm animals (Lee, S et al., 2022). These responses often manifest as displacement activities like excessive grooming or scratching, avoidance behaviours, or hyper-vigilance, where the animal prioritizes monitoring the human threat over eating or resting. However, maintaining livestock in established social groups (flocks, herds, or sounders) can mitigate these negative impacts. The presence of familiar conspecifics provides a "social buffer," encouraging natural behaviours and reducing the perceived threat of human interaction (Quadros S et al., 2014).
5. **Ecological Sensitivity in Fragile Regions (Mountains, Hills, Sensitive Land Cover)**
   The environmental hazard posed by unregulated agritourism is particularly acute in ecologically fragile regions, encompassing mountainous and hilly terrains, forest-edge areas, and biodiversity-

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OPEN ACCESS Original Research Article

rich ecosystems, where the carrying capacity is inherently low (Newsome et al., 2012). In these sensitive zones, even moderate tourist footfall and small-scale infrastructure development can quickly lead to irreversible damage, including accelerated soil instability on slopes, degradation of pristine vegetation, and disruption of critical wildlife corridors (Nepal, 2002). The pressure to introduce intensive agricultural methods or construct non-local accommodations in these vulnerable habitats directly undermines conservation efforts, turning an intended sustainable practice into a rapid driver of ecosystem degradation where recovery is slow and costly.

6. **Unplanned Expansion of Agri-tourism Sector**

Unregulated expansion of the tourism sector presents a critical threat to global ecological stability, generating a cascade of significant environmental challenges. This unplanned development often necessitates the conversion and fragmentation of natural habitats to construct essential infrastructure like resorts, roadways, and tourist amenities, leading directly to biodiversity loss and the displacement of native wildlife (Gössling & Peeters, 2015). The subsequent alteration of natural landscapes disrupts vital local ecosystems, intensifying problems such as soil erosion and the contamination of water bodies through inadequate waste and sewage management (Buckley, 2004). Furthermore, the sheer volume of increased visitor activity places unsustainable stress on fragile environments, while the associated surge in resource consumption, particularly energy for transport and accommodation, contributes significantly to greenhouse gas productions and climate change (Hall & Lew, 2009). Without stringent planning and adherence to sustainable protocols, the short-term economic gains from tourism risk the irreversible damage of the very natural capital that forms its basis, thereby undermining both long-term environmental and economic sustainability (Liu, 2003).

7. **Structural and Governance Challenges**

Many agritourism efforts suffer from lack of adequate infrastructure (waste management, water supply, sanitation), weak regulatory oversight, absence of capacity-building for rural stakeholders and limited awareness of sustainable tourism practices (Florek-Paszkowska et al., 2021 & Choma´c-Pierzecka, 2024)

8. **Major Underlying Risk Drivers**

a. **Economic incentive over ecological incentive:** Short-term gains from tourism (income from stays, services) sometimes outweigh long-term agricultural or ecological incentives leading to prioritization of tourism infrastructure over sustainable farming or land conservation (Honey, M. 2008).

b. **Weak planning and regulation:** In many rural zones, there is no clear zoning, environmental regulation, or carrying-capacity assessment to guide agritourism development. Consequently, infrastructure proliferates informally, often without impact assessments (Gossling, S., 2015).

c. **Lack of rural infrastructure:** Many agritourism sites lack proper waste disposal, sewage treatment, water-management systems making them ecologically unsustainable from the outset (Goswami, D. 2020).

d. **Limited awareness / capacity:** Farmers and rural entrepreneurs often lack training in sustainable tourism practices, waste management, eco-friendly building, or community-based resource management (Oyewole, S.O. et al., 2020 & Barros-Rodríguez et al., 2021).

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EIIRJ Electronic International Interdisciplinary Research Journal

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OPEN ACCESS Original Research Article

e. **Ecological fragility of many rural zones targeted:** Many agritourism ventures are located in ecologically sensitive zones — hills, mountains, forest-edge, water-scarce regions — where even small perturbations can trigger disproportionate damage (Rusu, S. 2007).

9. **Agritourism's Double-Edged Role - Potential vs Hazard:**

Agritourism in India offers a route to sustainable rural livelihoods, preservation of rural culture, small-scale ecologically mindful tourism, and community-based economic diversification, preservation of cultural heritage, and the promotion of agricultural knowledge and understanding among visitors (Sarkar, Sukanta-2010).

On the other hand, if pursued without ecological safeguards, it can transform rural ecologies, degrade land and water resources, strain biodiversity, and erode agricultural potential permanently. Thus, agritourism's environmental desirability is not intrinsic, it depends heavily on how it is designed, regulated, managed, and embedded within local ecological and social systems (Popescu et al.,2023; Ammirato et al., 2020).

Conclusion:

Agritourism in Maharashtra offers a potent livelihood diversification strategy for farming communities, successfully stimulating rural economic vitality, preserving cultural heritage, and promoting agricultural literacy among urban visitors. However, as this review of empirical evidence and sectoral analysis highlights, this rapid expansion is accompanied by significant, often unmanaged, ecological risks.

The key environmental hazards identified includes, land-use change and conflict which converts farmland for tourism infrastructure, acute resource pressure especially on water and soil in sensitive regions, inadequate waste generation and pollution management, and negative impacts on biodiversity related to habitat fragmentation and human-wildlife conflict. These issues are compounded by the inherent ecological fragility of many rural zones and critical structural and governance challenges, such as weak regulation and a dominant economic incentive over ecological sustainability.

Ultimately, agritourism's role is inherently double-edged as it presents a path for sustainable rural growth and conservation, but only if it is designed, regulated, and managed with stringent ecological safeguards. To mitigate the potential for irreversible environmental damage, the sector demands immediate policy, planning, and regulatory reforms that enforce carrying-capacity assessments, ensure robust waste and water management infrastructure, and prioritize long-term ecological health over short-term economic gains. Without such an integrated and holistic strategy, the very natural and cultural capital upon which agritourism relies risks being permanently damaged.

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