

Agro-Tourism As A Tool for Rural Development A Spatial Analysis of Tourism Potential in Ahmednagar District

Dr. Gautam Dashrath Kelkar

Associate Professor, Jamkhed Mahavidyalaya, Jamkhed
gautam.kelkar20@gmail.com

Abstract: *Agro-tourism has become one of the new strategies of fostering development in the rural areas through the integration of both agriculture and tourism. This paper examines the spatial distribution and tourism potential of agro-tourism in Ahmednagar district, based on a GIS-based analysis, and tehsil-based data. The study assesses physical, socio-economic and infrastructural indicators that affect the development of agro-tourism. GIS mapping methodology is used to determine high, medium and low potential areas within the tehsils. The results indicate that areas with ideal irrigation, accessibility, and variety of crops like Rahuri, Shrirampur and Nagar are characterized by greater agro-tourism potential. On the other hand, tehsils that are prone to drought have low potential. The research finds that with policy interventions and development of infrastructure, agro-tourism can play an important role in income diversification, creation of employment and rural development that is sustainable..*

Keywords: GIS mapping, spatial analysis, Ahmednagar, rural development, Agro-tourism

I. INTRODUCTION

Agro-tourism is a type of sustainable tourism whereby visitors get to experience the life of agriculture, the rural culture, and activities that are held on farms. Agro-tourism is the income source agro-based rural farmers in India can utilize as an alternative source of income, whilst maintaining their traditional practices in India, where agriculture is the main source of the rural livelihood. The Maharashtra state and Ahmednagar district especially, have a great future in agro-tourism owing to its wide agro-climatic zones, crop distribution and cultural heritage.

The rain-shadow district of Maharashtra, Ahmednagar, has spatial differentiation in agriculture, water resources and infrastructure among its tehsils. This difference renders it a perfect test case to be analyzed by space analysis through GIS methods. The use of geospatial tools facilitates the identification of appropriate areas where agro-tourism development can be undertaken and also evidence-based planning.

The purpose of this study is to assess the agro-tourism opportunities at tehsil scale based on GIS mapping and to determine the role of agro-tourism in enhancing rural development.

1.1. Study Objectives.

- To examine agro-tourism potential, as per tehsil, in Ahmednagar district.
- To determine the spatial differences with GIS mapping.
- To determine the contribution of agro-tourism in rural development.
- To propose policy recommendations towards sustainable agro-tourism development.

II. LITERATURE

Agrawal (2019) has discussed the importance of rural tourism in facilitating sustainable growth and emphasized agro-tourism as a good diversification strategy in terms of income generation. The paper has focused on the fact that the



combination of agriculture and tourism improves the livelihood of the locals and at the same time maintains the culture of the rural areas. It also realized that those areas that have good infrastructure and community involvement are likely to be more successful in the development of agro-tourism¹.

Lane and Kastenholz (2019) discussed the modern trends in rural tourism and emphasized the role of experiential tourism in drawing people. They found that agro-tourism offers genuine rural experiences, which enhance tourist engagement and satisfaction. Another key point that the authors made is that the sustainability of rural tourism destinations over time depends on strategic planning and collaboration with its stakeholders².

Joshi and Sharma (2020) devoted their attention to the use of GIS methods in tourism planning and showed how the use of spatial analysis helps to reveal the areas that could be used in tourism. In their study, they found that GIS based mapping enhances decision making because of the combination of environmental, infrastructural and socio-economic elements. The paper is a resounding argument in favour of the application of geospatial tools in determining agro-tourism potential in regional levels³.

Kumbhar (2017) has compared agro-tourism within the state of Maharashtra and has discovered that farmer's involvement is a key factor in the success of agro-tourism. The paper emphasized that agro-tourism not only enhances the farm earnings, but also raises awareness of the urban visitors on the farm practices. Nonetheless, issues like inadequacy of training and marketing were cited as key obstacles to its growth⁴.

Singh (2020) spoke about the connection between tourism and rural livelihoods and noted that agro-tourism helps to generate jobs and reduce poverty. The research indicated that sustainable rural tourism demanded supportive policies, development of infrastructure and capacity building. It concluded that proper planning and governance of agro-tourism can make it a powerful tool to minimize disparities in a region⁵.

III. STUDY AREA: AHMEDNAGAR DISTRICT

Ahmednagar District is located in the state of Maharashtra and is one of the largest districts in the state. The district exhibits significant spatial diversity in terms of physical, agricultural, and socio-economic characteristics, making it suitable for spatial analysis-based studies.

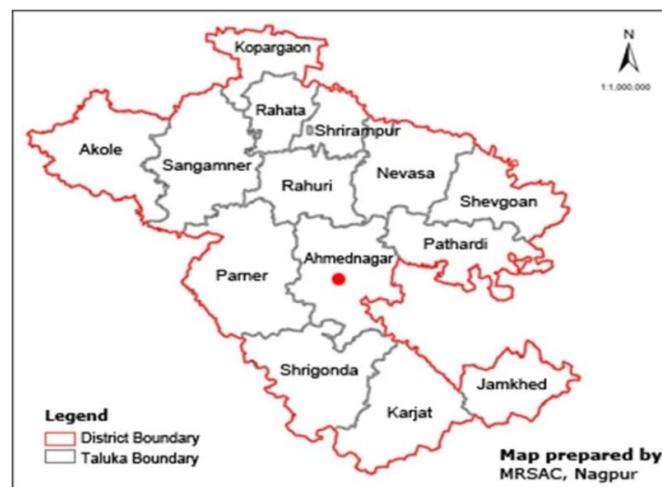


Figure 1: Map of Tehsils of Ahmednagar district.

¹ Agrawal, S. (2019). Rural tourism and sustainable development. *Journal of Rural Studies*.

² Lane, B., & Kastenholz, E. (2019). Rural tourism: New concepts. *Tourism Management*.

³ Joshi, P., & Sharma, R. (2020). GIS-based tourism planning in India. *Environmental Studies Journal*.

⁴ Kumbhar, V. (2017). Agro-tourism in Maharashtra. *Agricultural Economics Review*.

⁵ Singh, K. (2020). Sustainable rural livelihoods and tourism. Springer.



Figure 1 presents the tehsil-wise administrative structure of Ahmednagar district. The district consists of 14 tehsils, namely: Ahmednagar (Nagar), Rahuri, Shirampur, Sangamner, Kopergaon, Akole, Parner, Shrigonda, Karjat, Jamkhed, Pathardi, Shevgaon, Rahata, and Nevasa.

These tehsils show strong spatial variation in irrigation availability, agricultural productivity, and tourism potential. For example, Rahata tehsil includes Shirdi, a globally recognized religious tourism centre. Nevasa is located near the confluence of the Godavari and Pravara rivers, while Akole represents hilly and forested terrain. On the other hand, Pathardi and Shevgaon are relatively drought-prone regions influenced by limited irrigation facilities near the Jayakwadi command area.

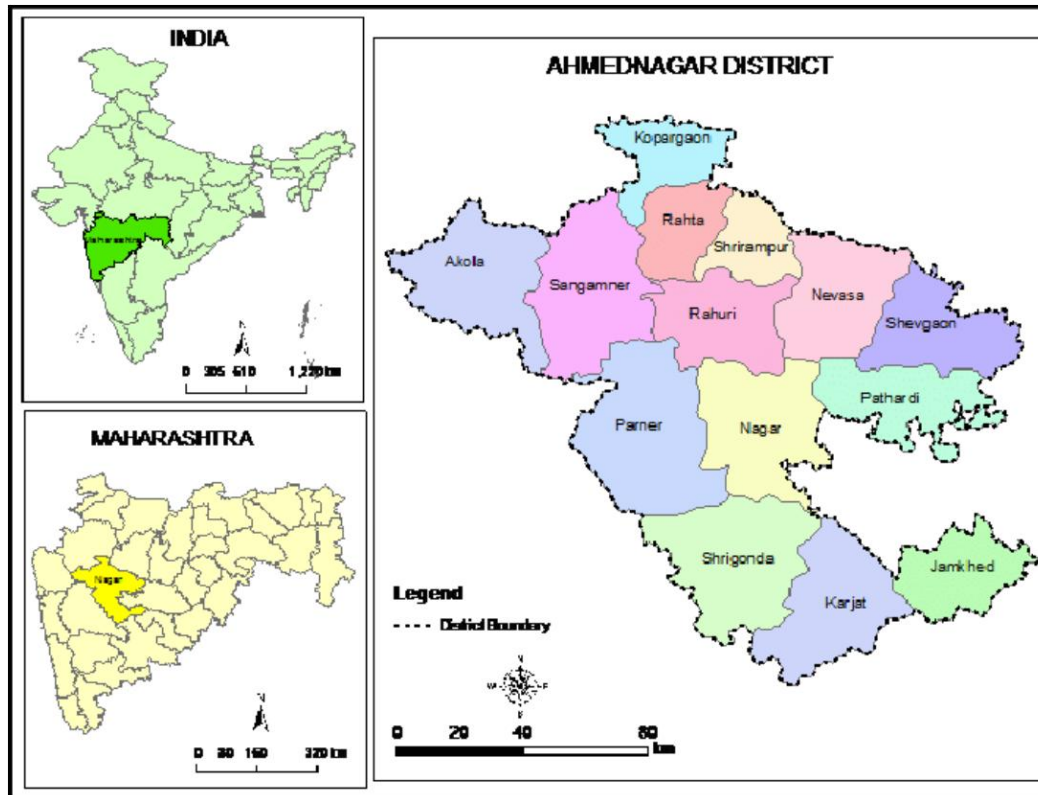


Figure 2: Location Map of Study Area

Figure 2 shows the geographical location of Ahmednagar district within Maharashtra and India. The map highlights the hierarchical positioning of the district at three levels:

- India (national context)
- Maharashtra State (state context)
- Ahmednagar District (regional focus area)

This location map helps in understanding the regional setting of the study area and its connectivity with surrounding districts such as Nashik, Pune, Aurangabad, Beed, and Osmanabad. The district lies in the rain-shadow region of the Western Ghats, which significantly influences its agricultural and water resource distribution.

Key characteristics:

The existence of large rivers: Godavari and Pravara.

Pattern of different crops: sugarcane, grapes, cereals.

Differences in irrigation facilities.

Both developed and drought-prone areas.



IV. DATA SOURCES AND METHODOLOGY

4.1 Data Sources

Census information (population, literacy)
Agricultural statistics (crop pattern, irrigation)
Tourism information (established agro-tourism centres)
Satellite data (DEM, land use/land cover)
Toposheets (Survey of India)

4.2 Methodology

The paper will use a spatial analysis method based on GIS:

1. Collection of tehsil-wise data
2. Thematic layer preparations:
Land use/land cover.
Irrigation
Accessibility (roads)
Agricultural diversity
3. Weight assignment of variables.
4. Overlay analysis using GIS
5. Classification of agro-tourism potential zones:
High
Moderate
Low

V. AGRO-TOURISM POTENTIAL ANALYSIS ON A TEHSIL BASIS

The agro-tourism potential analysis on a tehsil-by-tehsil basis shows that there is a high level of spatial variation across the Ahmednagar district. Tehsils such as Rahuri, Shrirampur, Nagar and Kopargaon have high potential because they are better irrigated, have diversified crops and are more accessible. Sangamner exhibits moderate agro-tourism potential due to balanced availability of resources and infrastructure. This discussion reveals that agro-tourism development is strongly related to the agricultural productivity, connectivity, and the availability of resources and requires the region specific planning and policy support⁶.

Table 1: Tehsil-wise Agro-Tourism Potential Indicators in Ahmednagar District

S.No	Tehsil	Irrigation (%)	Crop Diversity	Accessibility	Potential Level
1	Rahuri	High	High	Good	High
2	Shrirampur	High	Moderate	Good	High
3	Nagar	Moderate	High	Excellent	High
4	Sangamner	Moderate	Moderate	Good	Medium
5	Kopargaon	High	Moderate	Good	High
6	Akole	Moderate	Moderate	Moderate	Medium
7	Parner	Low	Moderate	Moderate	Medium
8	Shrigonda	Low	Moderate	Moderate	Medium
9	Karjat	Low	Low	Moderate	Low
10	Jamkhed	Low	Low	Poor	Low
11	Pathardi	Low	Low	Poor	Low

⁶World Tourism Organization.(2021). Rural tourism and development report.



12	Shevgaon	Low	Low	Poor	Low
13	Rahata	Moderate	Moderate	Good	High
14	Newasa	Moderate	Moderate	Good	Medium

The table shows that agro-tourism potential varies significantly across all 14 tehsils of Ahmednagar district. High potential is observed in Rahuri, Shrirampur, Nagar, Kopargaon and Rahata due to better irrigation, accessibility and tourism influence (e.g., Shirdi in Rahata). Medium potential tehsils include Sangamner, Akole, Parner, Shrigonda and Newasa, while drought-prone tehsils such as Karjat, Jamkhed, Pathardi and Shevgaon fall under low potential category⁷.



Figure 3: “GIS-Based Agro-Tourism Potential Map of Ahmednagar district”

Based on the GIS-based agro-tourism potential map of Ahmednagar district, a distinct pattern of spatial imbalance can be observed across the tehsils. The analysis reveals that regions with better irrigation facilities, fertile soil conditions, and well-developed road connectivity exhibit higher agro-tourism potential.

Tehsils such as Rahuri and Nagar emerge as core areas of high potential due to their diversified agricultural production, availability of water resources, and accessibility to major transport networks. These factors collectively enhance their attractiveness for agro-tourism activities and investment.

In contrast, low potential tehsils such as Jamkhed and Karjat are characterized by drought-prone conditions, limited irrigation infrastructure, and weaker connectivity. These constraints significantly reduce their capacity to support agro-tourism development and limit tourist inflow.

The spatial pattern clearly indicates that agro-tourism potential is closely linked to the combined influence of natural and infrastructural factors, particularly irrigation availability, agricultural productivity, and accessibility. Therefore, the

⁷Patil, S. (2021). Spatial analysis using GIS in agriculture. Geographical Review of India.



findings emphasize the need for **region-specific planning strategies**, where high potential areas are further strengthened, while low potential regions require targeted interventions such as irrigation development, infrastructure improvement, and policy support to enhance their viability.

VI. AGRICULTURAL TOURISM AND ITS CONTRIBUTION TO RURAL DEVELOPMENT.

Agro-tourism helps in the rural development in the following ways:

6.1 Income Diversification

Agro-tourism offers farmers an extra source of income to the traditional agriculture. Tourist activities like farm stays, selling organic products, services of local cuisine and cultural demonstrations help generate revenue. This diversification minimizes the reliance on seasonal agriculture and increases financial security, particularly in agricultural areas with uncertainties and market uncertainties⁸.

6.2 Employment Generation

Agro-tourism creates jobs to farmers in the countryside by creating demand to serve the rural population of facilities such as hospitality, guiding, transportation and production of handicrafts. The involvement of local youth and women in tourism related activities is very beneficial to them. This will curb rural unemployment and migration as well as foster an inclusive economic growth in village communities⁹.

6.3 Infrastructure Development

Agro-tourism will promote rural development infrastructures like roads, sanitation, water supply and communication systems. Investments by government and the private are in high potential regions making them more accessible and connected. The developments do not only contribute to tourism but also enhance the overall living standards of the locals.

6.4 Preservation of Culture

Agro-tourism is important in maintaining the rural traditions, customs, and cultural heritage. Tourists get to experience local festivals, folk art, traditional farm work and food. This helps communities to uphold their cultural identity as they earn money and the knowledge and traditions of the indigenous people are preserved to be used by the new generations.

VII. PROBLEMS OF AGRO-TOURISM DEVELOPMENT.

Agro-tourism development in Ahmednagar district faces several structural and operational challenges that limit its growth and sustainability. The major problems are discussed below:

Lack of Awareness among Farmers

Many farmers are not fully aware of the concept, benefits, and operational aspects of agro-tourism. This lack of knowledge limits their willingness to adopt tourism-related activities and reduces participation in agro-tourism initiatives.

Inadequate Infrastructure in Rural Areas

Basic infrastructure such as roads, transportation, sanitation, accommodation facilities, and communication networks is often underdeveloped in rural regions. This creates inconvenience for tourists and restricts the accessibility of potential agro-tourism sites.

Limited Marketing and Promotion

Agro-tourism destinations suffer from poor visibility due to insufficient marketing strategies. The absence of digital promotion, branding, and organized tourism networks makes it difficult to attract urban tourists and expand the customer base.

⁸Ministry of Tourism, India.(2022). Rural tourism development strategy.

⁹Government of Maharashtra.(2021). Agro-tourism policy report.



Financial Constraints

Small and marginal farmers often face financial limitations in developing agro-tourism facilities such as farm stays, recreational spaces, and visitor services. Lack of access to credit and government support further slows down investment in this sector.

Seasonal Dependency

Agro-tourism activities are largely dependent on agricultural seasons and climatic conditions. Tourist inflow tends to fluctuate throughout the year, leading to irregular income and underutilization of resources during off-seasons.

VII. SUGGESTIONS AND POLICY IMPLICATIONS

Based on the findings of the study conducted in Ahmednagar district, several strategic suggestions and policy measures can be proposed to enhance the development of agro-tourism and ensure balanced regional growth.

Development of Agro-Tourism Clusters

High potential tehsils such as Rahuri, Nagar, Shrirampur, and Kopargaon should be developed as agro-tourism clusters. Cluster-based development can improve resource sharing, attract investment, and create a strong regional tourism network, thereby enhancing overall efficiency and visibility.

Provision of Subsidies and Financial Assistance

The government should provide financial support in the form of subsidies, low-interest loans, and grants to farmers for developing agro-tourism infrastructure such as farm stays, accommodation facilities, and recreational spaces. This will reduce the financial burden on small and marginal farmers.

Promotion of GIS-Based Planning

The use of Geographic Information System (GIS) should be encouraged for scientific planning and decision-making. GIS-based mapping can help identify suitable locations, assess resource availability, and support sustainable and region-specific agro-tourism development.

Capacity Building and Skill Development

Training programs should be organized for farmers and rural youth to enhance their skills in hospitality management, customer service, digital marketing, and agro-tourism operations. Capacity building will improve service quality and increase tourist satisfaction.

Strengthening Marketing and Digital Promotion

Effective marketing strategies, including the use of online platforms, social media, and tourism websites, should be adopted to promote agro-tourism destinations. Creating a strong digital presence will help attract urban tourists and expand the reach of agro-tourism initiatives.

IX. CONCLUSION

The present study highlights the significant potential of agro-tourism as a sustainable strategy for rural development in Ahmednagar district. Using GIS-based spatial analysis, the research reveals that agro-tourism potential is unevenly distributed, reflecting clear regional disparities influenced by irrigation availability, accessibility, agricultural diversity, and infrastructural development.

Tehsils such as Rahuri, Nagar, Shrirampur, and Kopargaon emerge as high-potential zones due to favorable agro-climatic conditions, better connectivity, and diversified cropping patterns. These regions can serve as model agro-tourism hubs, demonstrating best practices for integrated rural development. In contrast, drought-prone tehsils like Karjat, Jamkhed, Pathardi, and Shevgaon exhibit low potential due to water scarcity, poor infrastructure, and limited resource availability.

The study further establishes that agro-tourism is not merely an extension of agriculture but a multi-dimensional development approach that promotes income diversification, employment generation, infrastructure enhancement, and cultural preservation. However, its success depends on effective coordination between local communities, government institutions, and policy frameworks.



For balanced regional development, a differentiated planning strategy is essential. High-potential areas require promotion and investment, moderate regions need infrastructural and skill development support, while low-potential areas demand targeted interventions such as irrigation expansion, financial assistance, and awareness programs. In conclusion, agro-tourism, supported by GIS-based planning and inclusive policy measures, can significantly reduce regional disparities and foster sustainable rural livelihoods in Ahmednagar district.

REFERENCES

- [1]. Agrawal, S. (2019). Rural tourism and sustainable development. *Journal of Rural Studies*.
- [2]. Bhatia, A. (2018). *Tourism development: Principles and practices*. Pearson.
- [3]. Government of Maharashtra. (2021). *Agro-tourism policy report*.
- [4]. Joshi, P., & Sharma, R. (2020). GIS-based tourism planning in India. *Environmental Studies Journal*.
- [5]. Kumbhar, V. (2017). *Agro-tourism in Maharashtra*. *Agricultural Economics Review*.
- [6]. Lane, B., & Kastenholz, E. (2019). *Rural tourism: New concepts*. *Tourism Management*.
- [7]. Ministry of Tourism, India. (2022). *Rural tourism development strategy*.
- [8]. Patil, S. (2021). Spatial analysis using GIS in agriculture. *Geographical Review of India*.
- [9]. Singh, K. (2020). *Sustainable rural livelihoods and tourism*. Springer.
- [10]. World Tourism Organization. (2021). *Rural tourism and development report*.

