OPEN ACCESS
Quick Response Code:
Website: https://wgges.us

Manuscript ID:
IJWGAFES-2025-020303

DOI: 10.5281/zenodo.15737824

DOI Link:
https://doi.org/10.5281/zenodo.15737824

Volume: 2
Issue: 3
March
Year: 2025
E-ISSN: 3066-1552

Submitted: *10 Jan 2025*
Revised: *20 Feb 2025*
Accepted: *15 Mar 2025*
Published: *31 Mar 2025*

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How to cite this article:
Lagad, S. J., & Naik, D. B. (2025). An Empirical Examination of The Relationship Between The Geographical Element And The Growth Of Agricultural Tourism In The Pune District. International Journal of World Geology, Geography, Agriculture, Forestry and Environment Sciences, 2(3), 15–21. https://doi.org/10.5281/zenodo.15737824

An Empirical Examination of The Relationship Between The Geographical Element And The Growth Of Agricultural Tourism In The Pune District

Dr. Santosh Jabaji Lagad[1], Dhananjay Bandu Naik[2]

Abstract

Agricultural tourism connects urban visitors with farming life, offers education and recreation while creating jobs, and supports the rural economy. Pune district, the second largest in Maharashtra, spans 15,642 sq.km with a population of 7.5 million (2025), comprising 14 talukas, 25 towns, and 1866 villages, including 1720 sq.km of forest and 9920 sq.km of cultivated land. This study focuses on understanding the current state of agrotourism in the district by examining major agricultural centers and suggesting strategies for its development. It utilizes secondary data from government sources, satellite imagery, and GIS tools to analyze agrotourism potential in Pune, incorporating maps of elevation, rainfall, soil, roads, and tourist spots along with GPS data to assess tourism accessibility and existing sites. Agricultural tourism is on the rise in the district, with regions such as Indapur, Daund, and Baramati suitable for crop-based tourism, whereas areas such as Mulshi, Junnar, and Shirur are favorable for orchards and environmental tourism. The district's diverse geographical and meteorological features provide a strong foundation for promoting sustainable, eco-friendly tourism.

Keywords: *Agricultural Tourism, Rural Economy, Crop-Based Tourism, Environmental Tourism, Sustainable Tourism, Agrotourism Development, Tourism Accessibility.*

Introduction

Agricultural tourism is a business type associated with agricultural products and production processes. Agricultural tourism is a business created for people who are not aware of agricultural areas in urban areas, in which agriculture and agricultural businesses such as livelihoods such as livelihoods such as livelihoods, such as farmers and entertaining them in agricultural education. Tourism has become an integral part of various economies globally and has the ability to create employment opportunities for skilled and needy people.(Chandra Shekhar, 2022) Increasing urbanization and large-scale growth of expanded industries are problems of economic stagnation, so farmers are gradually turning to businesses that preserve the interests of nature, including agro tourism**.** (Mahmoodi, Roman, & Prus, 2022; Al Abri, Gulseven, & Yousuf, 2023; Havale, Birajdar, & Chaudhari, 2023.) Farmers embrace agrotourism as a successful business by enhancing agricultural production, participating in it, developing new markets for purchasing and selling, and maintaining their agricultural businesses to ensure survival in a globally competitive market. **(**Barbieri & Mshenga, 2008;Adom, Alimov, & Gouthami, 2021;) Many scholars have given different definitions of the concept of agrotourism. Van Zyl, Merwe, and Van Der (2021).

According to Some scholars refer to the facilities that farmers give on their properties for business purposes as "working farms" or "agrotourism." (Abadi & Khakzand, 2022; Mahmoodi et al., 2022; Santeramo & Barbieri, 2017

Need of Study

Agricultural tourism is observed in the area around the Pune district in the western state of Maharashtra. Punes are important cities in terms of culture and tourism. Due to the huge population in Pune city, the lives of the people in this place are special about tourism due to the lives of people in this place, many people who cannot go for tourism in many distant regions, should be tourism in the vicinity of Pune city. Therefore, in Pune district, the business of Agro Tourism is widely expanded and the business of the North will expand. Therefore, it is necessary to study the subject of Agro Tourism in Pune district.

At the Agro Tourism Center, tourists from Pune can experience traditional farming methods as well as they can participate in various fields of fields, such as harvesting crops, even the harvest of vegetables. The climate and fertile soil in the Pune district are favorable for the growth of crops such as grape pomegranate strawberries, which can provide sustainable agricultural tourism throughout the year**.**

Study area

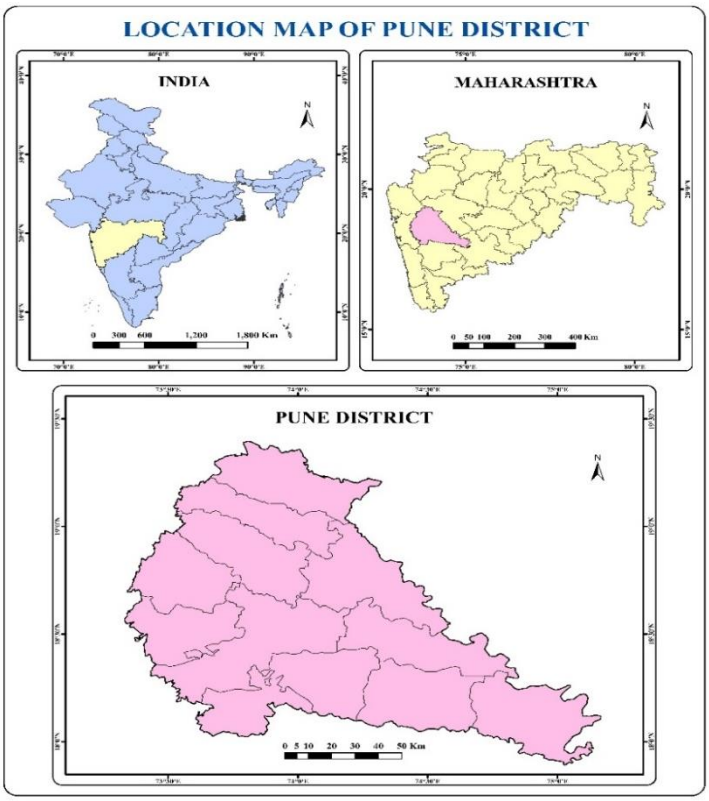

Fig.1- Location Map of Pune

Pune is the second largest district in Maharashtra State with respect to area. The district has a geographical area of 15642 sq.km., which accounts for 5.08% of the total area of the state. It is situated in the western part of the state and lies between north latitude17°54' and 19°24' and east longitude 73°29' and 75°10'. It is bounded by the Ahmadnagar district to the north and east. Satara and Solapur districts in the south and south east, respectively and the Thane and Raigarh districts in north west and west, respectively. For administrative convenience it is divided into 14 talukas Pune City, Haveli, Khed, Ambegaon, Junnar, Shirur, Daund, Indapur, Baramati, Purandhar, Bhor, Velhe, Mulsi and Maval. According to the World Population Review, the population of the district was 7,525,720 as per 2025, according to World Population Review. Census with a density of 462 persons/sq.km. There are 25 towns and 1866 villages in the district, of which 18 villages are not inhabited. The district has 13 Panchayat Samitis, 11 Nagar Parishads, two Municipal Corporation and 1407 Gram Panchayats. As per the land use details (2010-11) the district has an area of 1720 sq.km occupied by forest. The gross cultivable area of the district is 10150 sq.km whereas the net sown area is 9920 sq.km.

Literature review

Agro Tourism is an agricultural initiative that is run for the joy of the tourist and also produces income to the farmer. AFBF (2004). Agricultural tourism is an innovative agricultural business that enhances the popularity of farmers and agricultural businesses by increasing the popularity of agricultural businesses. Kumbhar, V. (2009). The host home should be customized for the agricultural industry to encourage visitors to enhance their involvement in agriculture. Marques H (2006).

Hospality in Indian rural areas should be added to agriculture so that Agro Tourism will develop. Sonnino R. (2004) Agricultural tourism is an alternative activity that connects tourists to different experiences of agriculture, including agricultural products, which are produced in the fields. Maetzold J.A. (2002). Agro Tourism is a model of sustainable development in rural areas. Agro Tourism, which enables agricultural production to the rural social economic and environmental challenges, so that the contribution of Agro Tourism can not only be calculated financially, but also encourages the production of employment and producing their sustainable financial production with their pride. Lane (2009). Agricultural tourism is a connection between producers and consumers that includes various political and moral elements such as local food and agriculture, regional identity, rejuvenating rural communities, building connections with sustainable agriculture in cities, and using economically and socially responsible practices. Barry, J., et.al. (2004) Ammirato, S et.al. (2020). Agricultural tourism is a smart opportunity for the sustainable development of rural areas. Agricultural tourism helps farmers maintain consistency in their agricultural activities and generate additional production through agricultural tourism. In addition, creating a friendly relationship between farmers and tourists helps to create an alternative source of income for farmers. Chatterjee and Prasad (2019) Baipai, Chikuta, Gandiwa, and Mutanga (2022). Agricultural tourism can balance the needs of farmers and urban tourists in rural areas and improve opportunities for social and economic development by reducing cultural and harmful environmental consequences. Barbieri (2019) and Adom et al. (2021)

Aims and Objectives

- To study the current situation of agrotourism business in Pune district

- To analyze the agricultural centers in the study area
- To suggest solutions for the development of agrotourism in the study area

Data and Methodology

The study on agricultural tourism is based on secondary data, including relevant articles, reports of research papers, reports of the Government of India and the website of the Ministry of Government of India and the Maharashtra State Agriculture Ministry as well as information have been made from the Maharashtra State Tourism Development Corporation.

The CartoSat-I satellite data were used to create a Digital Elevation Model (DEM). Using the ArcGIS spatial analysis module, slope, elevation, and drainage maps were extracted from these data. The average annual rainfall map of Pune tehsil was created using rainfall data from the Indian Meteorological Department (IMD). The Bhukosh website was used to create soil maps. Road maps and tourist spot maps were used for proximity research of tourist spots, and GPS data were used to investigate existing tourism.

Geomorphic conditions

Geoturism can boost economic development, community progress and land conservation. It can be developed in a natural landscape where people can experience the aesthetics of terrain. (Newsome & Dowling, 2006). Geomorphic landscapes have led to the development of geo-tourism. (Geneletti & Dawa, 2009; Kale, 2010). The Pune district is part of the Western Ghat and Deccan plateaus. Physiographically, the district can be divided into three distinct belts (1) western belt, (2) central belt, and (3) eastern belt.

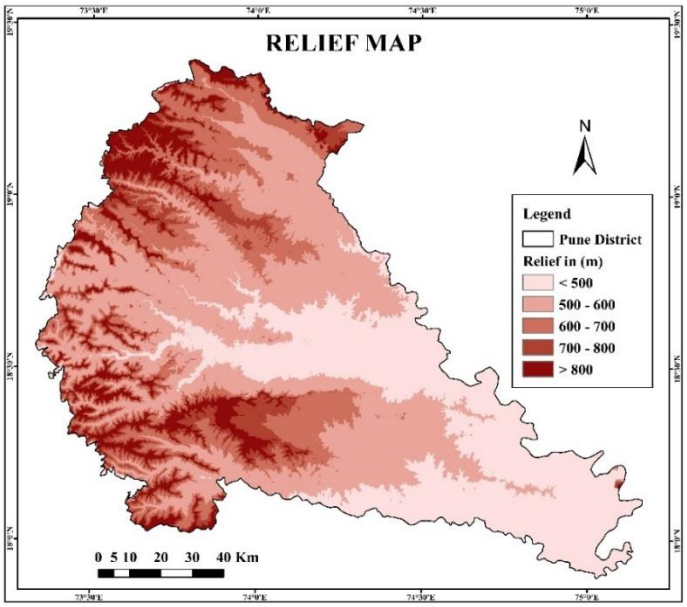

Fig.2- Relief Map of Pune

Relief of Pune District:

Relief maps are instrumental in understanding terrain variations, aiding geography studies, urban planning, environmental assessments, and infrastructure development. They offer valuable insights into the landscape, helping researchers and decision-makers analyze elevation patterns and their implications for regional development

The lowest elevations, below 500 m, are shown in light pink, gradually transitioning to light red in areas between 500 and 600 m. Medium red signifies elevations ranging from 600 to 700 m, whereas dark red marks regions between 700 and 800 m. The highest elevations, above 800 m, are represented by the darkest red shade. This map also features a scale bar illustrating distances of up to 40 km and a compass pointing north, ensuring spatial orientation. Additionally, longitude and latitude markings ranged from 73°30'E to 75°0'E and 18°0 n to 19°0'N, respectively, providing precise geographical coordinates.

Slope of Pune District

Slope of land and agricultural tourism have a close relationship. Different types of soil slopes increase the attractiveness of the terrain. Such different slopes can create attractive and natural landscapes on land, which helps attract tourists.

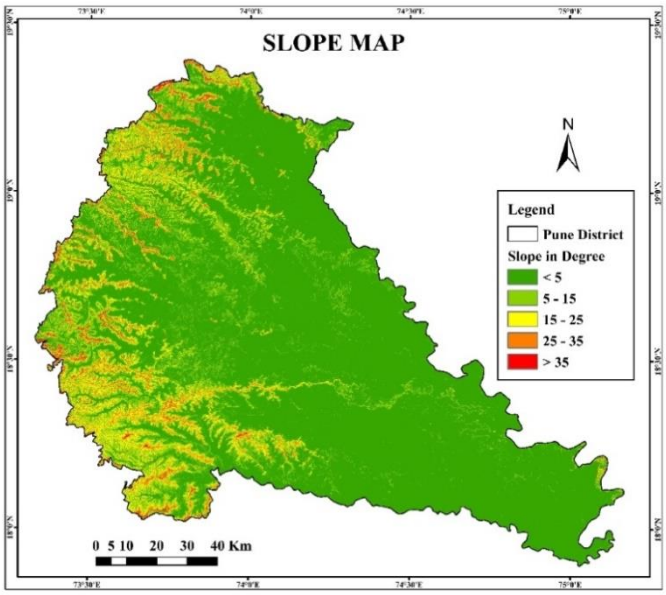

Fig. 4- Slope Map of Pune

The slope map of Pune District presents a detailed visualization of varying degrees of terrain steepness across the region. To enhance readability, it categorizes slopes into five distinct ranges, each represented by a specific color. Areas with a slope of less than 5 °are marked in green, indicating a relatively flat terrain. Light green represents.

The slopes ranged between 5 °and 15 °, showing slightly elevated landscapes. Yellow signifies slopes from 15 °to 25 °, denoting moderate incline. The terrain becomes steeper in orange-colored regions, where slopes fall between 25 °and 35 °. The most rugged landscapes with slopes greater than 35 °are depicted in red. Additionally, the map includes a legend explaining the color classifications, a scale bar displaying distances in kilometers, and a northern arrow for proper orientation. Bounded by latitude and longitude coordinates, this map is a valuable resource for urban planning, agriculture, environmental management, and infrastructure development, aiding decision-makers in understanding the topography of the Pune District.

Climatic conditions

Overall, the climate of the district was agreeable. The winter season is from December to mid-February, followed by the summer season, which lasts up to May. June September is the southwest monsoon season, whereas October and November constitute the post-monsoon season. The mean minimum temperature was approximately 12°C and the mean maximum temperature was approximately 39°C.

Rainfall:

According to the report, 73% of the German tourists interviewed looked into the climate at their vacation spots. Hamilton & Lau (2005). It is hardly surprising that climate change has had an impact on agriculture, given its pervasive effects. Climate change, including rising temperatures, extreme weather events, and fluctuating rainfall, has a significant impact on agricultural output, resulting in inconsistentresults.

Quality and quantity of the products. Scialabba & Müller-Lindenlauf(2010). The need for adaptation and the impact of climate change on tourism is well known. (Kaján & Saarinen, 2013). Public sector organizations have highlighted how climate change poses a dual threat to both agriculture and tourism, impacting agritourism. Stephen P. et.al. (2022)

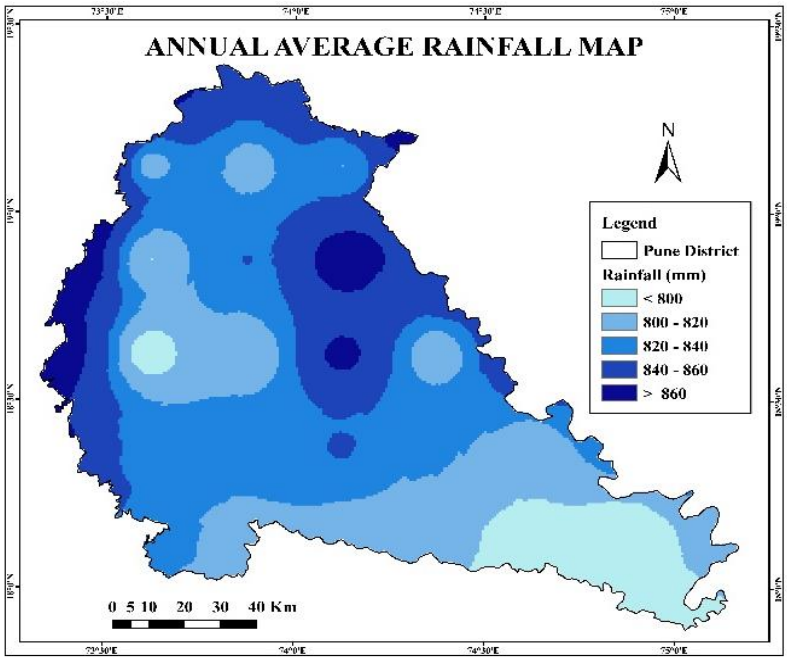

Fig.3- Rainfall Map of Pune

The Pune District's Annual Average Rainfall Map clearly illustrates the range of rainfall, which increases from the southeast to northwest. The Western Ghats are probably responsible for the high rainfall in the northwestern region (over 860 mm), whereas the southern and southeastern regions receive the least amount (less than 800 mm). The management of water resources and agriculture throughout the district was significantly affected by this rainfall pattern.

Analysis of Agrotourism centers in Pune District

Maharashtra was the first state in India to start agro-tourism. The Maharashtra government officially approved the creation of agro-tourism industries by many organizations, associations and NGOs working in the field of agro-tourism. Please provide this word in the scientific sentence. Since the implementation of the Maharashtra State Tourism Policy, 354 farmers and farmers' organizations in the state have started agro-tourism centers, of which the highest number of agro-tourism centers are in Pune District. (Havale, Birajdar, & Chaudhari, 2023).

Table 1.- Development of Agrotourism Centers in Pune District

Sr. No.	Tehsil Name	Agrotourism centers upto 2018	Agrotourism centers upto 2025	Total Agrotourism centers in Pune District
1.	Ambegaon	01	04	05
2.	Baramati	04	05	09
3.	Bhor	07	11	18
4.	Daund	04	11	15
5.	Haveli	13	12	23
6.	Indapur	00	04	04
7.	Junnar	11	13	24
8.	Khed	01	07	08
9.	Mawal	05	07	12
10.	Mulshi	30	22	52
11.	Pune City	00	01	01
12.	Purandar	02	05	07
13.	Shirur	09	15	24
14.	Velhe	06	03	09
Total		93	122	122
Source- Complied by Researcher				

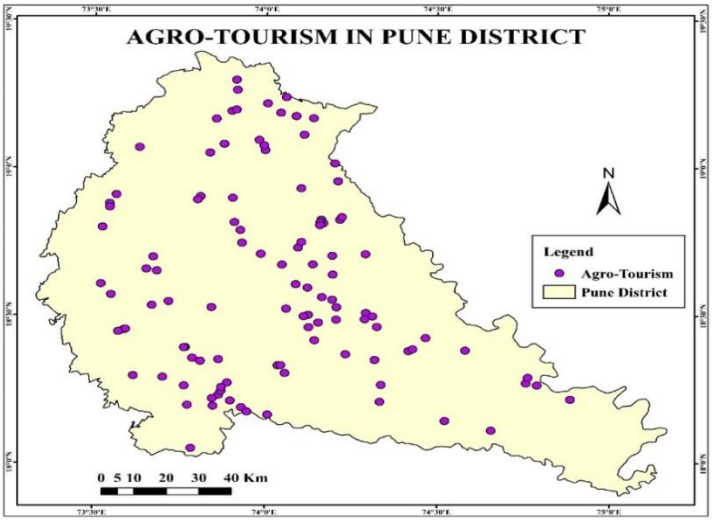

Fig. 5- Location of Agrotourism Centers in

Results and discussion

Agricultural tourism centers in Pune District can be developed according to various levels of height. Soldy areas, such as Indapur, Daund and Baramati are mainly useful for crop farming-based tourism. Medium height areas such as Shirur, Purandar and Khed are suitable for orchards and mixed farming, according to which tourism is possible. Junnar, Ambegaon and Mulshi are favorable for organic farming and environmentally friendly tourism. Thus, mountainous and high areas, such as Velhe, Bhor and Maval create opportunities for mountain farming and natural agricultural tourism.

The distribution of rainfall in Pune District shows geographical disparity in various talukas, which is favorable for the development of region-specific agricultural tourism. Maval, Velhe, Bhor, Ambegaon and Junnar talukas are especially suitable for organic and environmentally friendly agricultural tourism; therefore, it is useful to determine the strategy of taluka-based agricultural tourism.

The geographical slope in the Pune District is an important guide for agricultural resource development. Indapur, Daund, and Baramati with flat terrain can develop crop-based tourism, while on mild slopes, Shirur, Haveli, and Purandar have a favorable environment for horticultural and mixed agricultural tourism. Medium slopes are ideal for Medargaon, Junnar, and Mulshi eco-tournaments, and the best environmental conditions are available for nature-based agricultural conditions in the wells Bhor, Maval, and West Mulshi with high slopes and rocky terrain. An approach based on this slope will make it possible to implement sustainable agricultural cultivation policies in the district.

Agrotourism in Pune District is growing, with 122 centers expected by 2025. Mulshi leads with 52 centers driven by its eco-tourism appeal. Shirur and Junnar showed significant growth, each reaching 24 centers. Bhor, Daund, and Baramati also saw a steady increase. Haveli remains the largest hub, although its growth has slowed down. Indapur emerges with four centers, while Khed and Mawal show moderate growth. Pune City is expected to have 1 center. Purandar benefited from both agricultural and cultural tourism, while Velhe experienced a slight decline. Overall, agrotourism is expanding across the district, with some regions seeing rapid growth and others facing developmental challenges.

Conclusion

Agricultural tourism development in the Pune district can be done on the basis of various geographical, weather and rainfall events. Solid areas such as Indapur, Daund and Baramati are perfect for crop-based tourism, whereas medium-high areas such as Shirur, Purandar and Khed are ideal for orchards and mixed agriculture. Tall regions, such as Junnar, Ambegaon and Mulshi, are favorable for organic and environmental reactions and support intense regions such as wells, dawn and Maval Mountains and nature-based tourism. Various geographical features help to create useful strategies for environmentally friendly agricultural methods.The growth of agrotourism in the Pune District reflects a rising interest in rural and agricultural experiences. Areas such as Mulshi, Shirur, and Junnar are emerging as strong agrotourism hubs, whereas regions such as Pune City and Indapur show early stage development. The overall trend indicates that agrotourism will continue to grow with a significant focus on leveraging the district's agricultural diversity, scenic landscapes, and proximity to urban areas.

Acknowledgment

I would like to express gratitude of my Ph.D. research guide Dr. Santosh J. Lagad and Ph.D. Research center, Department of Geography of K. J.Somayya College, Kopergaon. I am also gives thanks to Dr. N. M. Vibhute for her guidance and kind support during the research paper publication and also thanks to Editor and supporting staff of International Journal of world Geology, Geography, Agriculture, forestry and Environment Sciences for giving the guideline and support for publication.

Financial support and sponsorship

This research received no specifie grant from funding agencies in the public, commercial or not-for-profit sectors.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References:

1. Abadi, A., & Khakzand, M. (2022). Extracting the qualitative dimensions of agritourism for the sustainable development of Charqoli village in Iran: The promotion of vernacular entrepreneurship and environment-oriented preservation perspectives. Environment, Development and Sustainability, 1–63.
2. Adom, D., Alimov, A., & Gouthami, V. (2021). Agritourism as a preferred travelling trend in boosting rural economies in the post-COVID-19 period: Nexus between agriculture, tourism, art and culture. *Journal of Migration, Culture and Society*, *1*(1), 7-19.
3. Adom, D., Alimov, A., & Gouthami, V. (2021). Agritourism as a preferred travelling trend in boosting rural economies in the post-COVID-19 period: Nexus between agriculture, tourism, art and culture. *Journal of Migration, Culture and Society*, *1*(1), 7-19.
4. Al Abri, I., Gulseven, O., & Yousuf, J. B. (2023). Estimating the recreational value of a rural mountain area in the presence of heterogeneous agricultural density on AlJabal Al-Akhdar Oman. Journal of Outdoor Recreation and Tourism, 42, Article 100639. https://doi.org/10.1016/j.jort.2023.100639
5. Ammirato, S., Felicetti, A. M., Raso, C., Pansera, B. A., & Violi, A. (2020). Agritourism and sustainability: What we can learn from a systematic literature review. *Sustainability*, *12*(22), 9575.
6. Baipai, R., Chikuta, O., Gandiwa, E., & Mutanga, C. N. (2022). Critical success factors for sustainable agritourism development in Zimbabwe: A multi-stakeholder perspective.
7. Barbieri, C., & Mshenga, P. M. (2008). The role of the firm and owner characteristics on the performance of agritourism farms. Sociol. Rural, 48, 166–183.
8. Barbieri, L., Ahamed, S., & Bliss, S. (2019). Farming within limits. *Interactions*, *26*(5), 70-73. ISO 690
9. Barry, J., & Hellerstein, D. (2004). Farm recreation. *Chapter in In Outdoor Recreation for 21st Century America, edited by Ken Cordell, Venture Press, State College, PA*, *289*.
10. Chandra Shekhar, 2022 Agro – Tourism Book chapter in GO LOCAL FOR VOCAL Published in Bharti Publication ISBN 978-93- 91681-84-5
11. Chatterjee, S., & Prasad, D. M. V. (2019). The Evolution of Agri-Tourism practices in In-dia: Some Success Stories. *Madridge J Agric Environ Sci*, *1*(1), 19-25.
12. Encyclopedia.com. American Farm Bureau Federation (AFBF). 2004. *The Gale Group Inc.*
13. Geneletti, D., & Dawa, D. (2009). Environmental impact assessment of mountain tourism in developing regions: A study in Ladakh, Indian Himalaya. Environmental Impact Assessment Review, 29(4), 229–242. https://doi.org/10.1016/j.eiar.2009.01.003.
14. Hamilton, J.M. & Lau, M. (2005). The Role of Climate Information in Tourist Destination Choice Decision-Making. Pp. 229-250. In: Gössling, S. and C.M. Hall (eds.). Tourism and Global Environmental Change. London: Routledge.
15. Havale, D. S., Birajdar, S. S., ChaudhariProfessor, C., & Director, D. D. (2023). A SYSTEMATIC LITERATURE REVIEW OF AGRI TOURISM AND SUSTAINABILITY. *The Online Journal of Distance Education and e-Learning*, *11*(1), 563-567.
16. Kaján, E., & Saarinen, J. (2013). Tourism, climate change and adaptation: A review. Current Issues in Tourism, 16(2), 167–195.
17. Kale, V. S. (2010). The Western Ghat: The great escarpment of India. In P. Migon (Ed.), Geomorphological landscapes of the world (pp. 257–264). Netherlands: Springer. https://doi.org/10.1007/978-90-481-3055-9_26.
18. Kumbhar VM. Agro-tourism: Scope and opportunities for the farmers in Maharashtra. 2009.
19. Lane, B. (2009). Rural tourism: An overview. *The SAGE handbook of tourism studies*, 354-370.
20. Maetzold JA. Nature-based tourism & agritourism trends: unlimited opportunities. *Kerr Center for Sustainable Agriclture*. 2002.
21. Mahmoodi, M., Roman, M., & Prus, P. (2022). Features and challenges of agritourism: Evidence from Iran and Poland. Sustainability, 14, 4555. https://doi.org/10.3390/ su14084555
22. Marques H. Searching for complementarities between agriculture and tourism—the demarcated wine-producing regions of northern Portugal. *Tourism Economics*. 2006; 12(1): 147-155.
23. Newsome, D., & Dowling, R. (2006). The scope and nature of geotourism. In D. Newsome, & R. Dowling (Eds.), Geotourism. London: Routledge. https://doi.org/10.4324/ 9780080455334
24. Santeramo, F. G., & Barbieri, C. (2017). *On the demand for agritourism: a cursory review of methodologies and practice. Tourism Planning and Development, 14 (1), 139–148*.
25. Scialabba, N. E.-H., & Müller-Lindenlauf, M. (2010). Organic agriculture and climate change. Renewable Agriculture and Food Systems, 25(2), 158–169
26. Sonnino R. For a 'piece of bread'? Interpreting sustainable development through agritourism in Southern Tuscany. *Sociologia Ruralis*. 2004; 44(3): 285-300. doi: 10.1111/j.1467-9523.2004.00276.x
27. Stephen Pratt, Alminda Magbalot-Fernandez, Yasuo Ohe (2022) Motivations and constraints of developing agritourism under the challenges of climate change: The case of Samoa. International Journal of Tourism Research, 1–13. https://doi.org/10.1002/jtr.2525.
28. Van Zyl, C. C., Merwe, & Van Der, P. (2021). The motives of South African farmers for offering agri -tourism. Open Agriculture, 6, 537–548.