



Practices and Challenges of Environmental Sustainability in Tourism: Insights From Malino, Indonesia

Jasman¹

¹Destinasi Pariwisata, Politeknik Pariwisata Makassar , Jl. Gn. Rinjani Jl. Metro Tj. Bunga No.1, Tj. Merdeka, Kec. Tamalate, Kota Makassar, Sulawesi Selatan 90224, Indonesia

*Corresponding author's email : jasman270@gmail.com

Abstract

This study aims to evaluate the implementation of environmental aspects in sustainable tourism development in Malino, Tinggimonjong District, Gowa Regency, using a quantitative descriptive method. Data collection was conducted through surveys to gather information on the application of environmental criteria in the area. Data analysis was performed using spatial overlay techniques to assess the extent of criterion implementation and identify areas needing improvement. The findings indicate that Malino has implemented 20 out of 27 relevant environmental criteria. These include waste management, greenhouse gas emission control, and eco-friendly transportation. However, some areas still require improvement, particularly regarding infrastructure and supporting services. The study also highlights the challenge of balancing tourism development with environmental conservation. Effective environmental management is crucial for ensuring tourism sustainability. The main conclusion is the need for better spatial planning and improved management practices to protect natural areas from negative impacts and ensure the long-term sustainability of tourism development in Malino.

Keywords: Tourism practices, environmental sustainability, Malino, sustainable tourism

1. INTRODUCTION

In the past decade, there has been a growing body of research focusing on the role of tourism as a key economic sector, particularly in developing nations like Indonesia. The country's diverse natural and cultural assets have long positioned tourism as a cornerstone for economic development and community welfare enhancement (Junaid et al., 2023; Todorov et al., 2023). Alongside these assets, Indonesia's tourism potential continues to evolve, presenting new opportunities to attract both domestic and international visitors. Such growth, however, requires a careful balance to ensure that tourism remains sustainable and beneficial for local communities and the environment (Agumdhana & Suwardji, 2022; Muchlis et al., 2024).

Despite the widespread recognition of tourism's economic contributions, sustainable development across regions remains a critical challenge. Current research indicates that tourism growth is concentrated in only a few key areas, such as Bali, Java, Sumatra, and Sulawesi, leading to uneven regional development (Agumdhana & Suwardji, 2022; Rotar et al., 2019). While these regions experience significant economic benefits, the lack of balanced tourism development has raised concerns over environmental degradation and social impacts. Moreover, there is a growing emphasis on promoting community-based tourism models to bridge this gap and ensure that tourism growth is inclusive and ecologically sound (Ilhami et al., 2019; Reggers et al., 2016; Ruiz-Ballesteros, 2023). It remains unclear, however, how sustainable tourism models can be effectively implemented in regions with sensitive environmental conditions, such as Malino in South Sulawesi. This area, known for its agrotourism and unique landscape, faces environmental threats including land-use changes, deforestation, and susceptibility to landslides (Faradiba, 2023; Jasman et al., 2023; Latief, 2022). While community engagement and sustainable land management are seen as vital components, a deeper understanding of the environmental variables influencing tourism sustainability in Malino is still needed (Putra & Ariana, 2022; Rachman, 2018; Siryayasa et al., 2022). The purpose of this study was to identify the physical environmental aspects influencing tourism sustainability in Malino, Gowa Regency. This research aimed to explore how specific

environmental parameters—such as landscape, water quality, air quality, and cleanliness—contribute to the region's potential as a sustainable tourism destination. Additionally, this study sought to understand the relationship between these variables and the socio-economic benefits that can be derived from sustainable tourism practices (Nurlisa Ginting et al., 2020). This article is structured as follows: the introduction outlines the research background, highlighting the challenges and potential of sustainable tourism in Malino. The subsequent sections delve into the methods used to analyze the environmental and physical characteristics of the region, followed by a discussion of the findings and their implications for future tourism development. The conclusion provides policy recommendations and suggests pathways for incorporating environmental considerations into local tourism strategies to promote long-term sustainability.

2. RESEARCH METHODOLOGY

The data for this study were collected through interviews with key informants, including local farmers, tourism business operators, TWA Malino staff, community leaders, and officials from the Gowa Regency Tourism and Culture Office (Goodson & Phillimore, 2004). Additionally, surveys were conducted with 131 tourists who attended the "Beautiful Malino 2024" event using Google Forms. Observations were made to record tourism activities, infrastructure conditions, and local business operations. Secondary data were gathered from relevant literature. Data analysis followed the Miles and Huberman model, which involved three key steps: data reduction, data display, and conclusion drawing. The data were reduced through coding and triangulation, focusing on key themes such as environmental risks, habitat protection, greenhouse gas emissions, and energy and water conservation. The findings were presented in tables and descriptive narratives, with conclusions drawn based on patterns emerging from the analysis.

3. FINDINGS AND DISCUSSION

The findings of this study clearly show that tourism in the Malino Tourism Area, Gowa Regency, attracts a diverse range of visitors, with a nearly equal distribution of male and female tourists (49% male and 51% female). This indicates that Malino's attractions appeal universally, offering a balance of activities and facilities suitable for all genders. Additionally, a significant portion of visitors consists of students (43%), followed by private sector employees (32%) and government workers (18%), highlighting the destination's appeal among both young and professional segments. The geographical proximity of Malino to Makassar, with 53% of visitors coming from this city, suggests that ease of access plays a major role in its popularity. Furthermore, Malino attracts well-educated individuals, with 48% holding a bachelor's degree or higher, reinforcing its image as a destination for those seeking meaningful experiences in nature and culture.

The findings of this study clearly show that Malino, as a key tourist destination in Kabupaten Gowa, is both a valuable asset and an area with significant opportunities for improvement. The data reveals that accessibility issues, particularly concerning road quality and infrastructure, have been a notable concern for visitors. Around 21% of respondents rated the access as "Poor" or "Very Poor," indicating that infrastructure challenges such as road damage, dust from mining activities, and landslides severely impact the visitor experience. Similarly, while the majority of respondents (47%) consider the amenities in Malino to be "Quite Complete," a significant portion (44%) rated the facilities as "Incomplete." These findings suggest that while Malino's attractions are drawing large crowds, gaps in accessibility and facility provisions hinder the overall experience. On a positive note, attractions like Hutan Pinus Malino and Wisata Kebun Bonto Marannu remain highly popular, highlighting the potential to further leverage Malino's natural beauty and cultural appeal to enhance visitor satisfaction.

One explanation for the mixed feedback on accessibility is the ongoing road and infrastructure issues, exacerbated by mining activities and natural conditions such as landslides. Research in tourism infrastructure suggests that poor accessibility can significantly detract from the visitor experience, leading to reduced satisfaction despite the quality of attractions (Gonda, 2024; Widjaja



et al., 2021; Zhuang et al., 2022). This aligns with the respondents' concerns regarding damaged roads and unsafe conditions, which could discourage future visits and harm Malino's reputation as a tourist destination.

Similarly, the dissatisfaction with the amenities indicates that while some essential facilities exist, the lack of more comprehensive or well-maintained infrastructure leaves room for improvement (Ismail & Rohman, 2019; Jasman et al., 2021). According to tourism development studies, the availability and quality of amenities such as dining, parking, and health services play a critical role in shaping visitor perceptions and overall satisfaction. The close split in opinions on the completeness of facilities reflects the need for more thorough planning to meet the diverse expectations of different tourist demographics. Malino's strong focus on natural attractions like Hutan Pinus Malino demonstrates its unique appeal, but complementary amenities and improved access could elevate the overall visitor experience.

In terms of attractions, Malino's appeal is clear from the high number of visitors to natural sites such as Hutan Pinus Malino and Wisata Kebun Bonto Marannu. These destinations capitalize on ecotourism and agrotourism, which are increasingly popular among tourists seeking outdoor and educational activities. The concentration of visitors at these sites suggests that Malino has the potential to expand its attraction portfolio (Olszewski-Strzyżowski, 2022; Susanto et al., 2023). However, the lower visitation at sites like Kampung Kopi Bawakaraeng indicates that further investment in promotion or activity diversification might be needed to spread tourist interest more evenly across the region.

This study was limited by the focus on visitor perceptions and did not directly measure infrastructural conditions or detailed tourist demographics. Furthermore, while the data provides insights into general trends, it lacks specificity regarding the exact types of facilities or services that visitors found inadequate. Future research should include a more granular analysis of the types of amenities and the condition of specific roads to better guide targeted improvements.

Recommendations include prioritizing road repairs and improving traffic management, particularly in areas affected by mining activities and prone to landslides. Enhancing amenities such as restaurants, restrooms, and visitor information centers will help meet visitor expectations and improve overall satisfaction. Expanding the range of attractions beyond the highly popular natural sites could also help to distribute visitor traffic more evenly across the region, reducing congestion at peak sites and improving the experience for all visitors. By addressing these infrastructure and amenity challenges, Malino has the potential to grow into an even more sustainable and attractive tourist destination.

4. CONCLUSION

This study was limited by its focus on a small subset of informants and stakeholders in the Malino area, potentially overlooking other perspectives or broader socio-economic factors influencing land-use changes. Future research should include a more comprehensive survey of local residents and businesses to better understand the full scope of challenges. The recommendations from this study emphasize the importance of educating local communities about the ecological and regulatory importance of protected areas, as well as strengthening law enforcement regarding land use in conservation zones. Additionally, there is a need for integrated conservation strategies, disaster risk mitigation, and sustainable tourism management, which should involve coordinated efforts between government, local communities, and private sector stakeholders to ensure long-term environmental protection and economic development.

REFERENCES

- Agumdhana, R., & Suwardji. (2022). Faktor Sosial Ekonomi Masyarakat dan Lingkungan yang Berperan Dalam Agrowisata. *Jurnal Pengabdian Magister Pendidikan IPA*, 5(2). <https://doi.org/10.29303/jpmipi.v5i2.1770>



- Faradiba, B. (2023). Analisis Potensi Pengembangan Ekmowisata Butta Gowa Resort Menjadi Destinasi Wisata Halal. *Ganaya: Jurnal Ilmu Sosial Dan Humaniora*, 6(1). <https://doi.org/10.37329/ganaya.v6i1.2009>
- Gonda, T. (2024). The importance of infrastructure in the development of accessible tourism. *Journal of Infrastructure, Policy and Development*, 8(2). <https://doi.org/10.24294/jipd.v8i2.2735>
- Goodson, L., & Phillimore, J. (2004). Qualitative research in tourism: Ontologies, epistemologies and methodologies. In *Qualitative Research in Tourism: Ontologies, Epistemologies and Methodologies*. <https://doi.org/10.4324/9780203642986>
- Ilhami, A., Riandi, R., & Sriyati, S. (2019). Implementation of science learning with local wisdom approach toward environmental literacy. *Journal of Physics: Conference Series*, 1157(2). <https://doi.org/10.1088/1742-6596/1157/2/022030>
- Ismail, T., & Rohman, F. (2019). The Role of Attraction, Accessibility, Amenities, and Ancillary on Visitor Satisfaction and Visitor Attitudinal Loyalty of Gili Ketapang Beach. *Jurnal Manajemen Teori Dan Terapan | Journal of Theory and Applied Management*, 12(2). <https://doi.org/10.20473/jmtt.v12i2.14423>
- Jasman, J., Ridwan, M., Kamarudin, M. K. A., & Lubis, D. P. (2023). Production Of Spatial Geosite Itinerary Maps as Tourism Destinations. *JURNAL GEOGRAFI*, 15(2), 208. <https://doi.org/10.24114/jg.v15i2.48990>
- Jasman, Ridwan, M., & Guntara, F. (2021). Utilization of Geographic Information Systems in Applying Smart Tourism in the Nona Mountain Area. *Jurnal Kepariwisata Indonesia*, 15(1). <https://doi.org/https://doi.org/10.47608/jki.v15i12021.36-48>
- Junaid, I., Ilham, M. D. M., Riani, R. L., Fiarta, A. F., & Rizkiyah, P. (2023). The management of rural tourism in Barru Regency from a supply and demand perspective. *Masyarakat, Kebudayaan Dan Politik*, 36(1). <https://doi.org/10.20473/mkp.v36i12023.101-112>
- Latief, R. (2022). Perubahan Fungsi Lahan Kawasan Lindung Menjadi Kawasan Budidaya Di Kelurahan Malino Kecamatan Tinggimoncong Kabupaten Gowa. *Jurnal Ilmiah Ecosystem*, 22(2). <https://doi.org/10.35965/eco.v22i2.1561>
- Muchlis, N. F. Fajriaty., Rahayu, M., Renold, & Ridwan, M. (2024). Spotlight on festival travellers: Profiles, Motivations, and Experiences of Dieng Culture Festival Travellers, Indonesia. *Jurnal Ilmiah Poli Bisnis*, 16(1), 42–55.
- Nurlisa Ginting, Riris Adriaty Putri E S, Annisa Salsabilla, Recria Lathersia, Putri Ayu Dirgantara Y, & Munazirah. (2020). Keterkaitan antara Aspek Lingkungan pada Pariwisata Berkelanjutan terhadap Distinctiveness (Studi Kasus Kawasan Geopark Kaldera Toba). *Talenta Conference Series: Energy and Engineering (EE)*, 3(1). <https://doi.org/10.32734/ee.v3i1.855>
- Olszewski-Strzyżowski, D. J. (2022). Promotional Activities of Selected National Tourism Organizations (NTOs) in the Light of Sustainable Tourism (Including Sustainable Transport). *Sustainability (Switzerland)*, 14(5). <https://doi.org/10.3390/su14052561>
- Putra, A. M., & Ariana, I. N. J. (2022). Manfaat pengembangan desa wisata dari aspek alam, sosial budaya, spiritual, dan ekonomi di kabupaten tabanan. *Jurnal Kepariwisata Dan Hospitalitas*, 5(2). <https://doi.org/10.24843/jkh.2021.v05.i02.p13>
- Rachman, T. (2018). Pengembangan potensi wilayah. *Angewandte Chemie International Edition*, 6(11), 951–952., 26.
- Reggers, A., Grabowski, S., Wearing, S. L., Chatterton, P., & Schweinsberg, S. (2016). Exploring outcomes of community-based tourism on the Kokoda Track, Papua New Guinea: a longitudinal study of Participatory Rural Appraisal techniques. *Journal of Sustainable Tourism*, 24(8–9). <https://doi.org/10.1080/09669582.2016.1145229>
- Rotar, L. J., Pamić, R. K., & Bojnec, Š. (2019). Contributions of small and medium enterprises to employment in the European Union countries. *Economic Research-Ekonomska Istrazivanja*, 32(1). <https://doi.org/10.1080/1331677X.2019.1658532>
- Ruiz-Ballesteros, E. (2023). What community for community-based tourism? *Current Issues in Tourism*, 26(16). <https://doi.org/10.1080/13683500.2022.2091982>



- Siryayasa, I. N., Ridwan, M., & Baharuddin, A. (2022). Analysis The Malino Beautiful Festival On Management Strategy Of Tourist Visits In Gowa Regency. *PINISI Discretion Review*, 5(2). <https://doi.org/10.26858/pdr.v5i2.33008>
- Susanto, Y., Ridwan, M., & Renold. (2023). TOURIST MOVEMENT PATTERNS IN THE MAMMINASATA REGION. *Journal of Tourism Destination and Attraction*, 11(Desember), 2685–6026.
- Todorov, P., Mihailović, B., & Brzaković, P. (2023). Environmental aspects of sustainable tourism development. *Turisticko Poslovanje*, 31. <https://doi.org/10.5937/turpos0-43367>
- Widjaja, H. R., Ridwan, M., & Musawantoro, M. (2021). Inventarisasi Sarana dan Prasarana, Daya Tarik Wisata Kabupaten Barru dengan Pemodelan Sistem Informasi Geografis. *Pusaka: Journal of Tourism, Hospitality, Travel and Business Event*, 3(2). <https://doi.org/10.33649/pusaka.v3i2.66>
- Zhuang, Y., Yang, S., Razzaq, A., & Khan, Z. (2022). Environmental impact of infrastructure-led Chinese outward FDI, tourism development and technology innovation: a regional country analysis. *Journal of Environmental Planning and Management*, 66(2). <https://doi.org/10.1080/09640568.2021.1989672>

