Vol.6 No. 2 (2025), Halaman 225-233

GEOGRAPHIA
Jurnal Pendidikan dan Penelitian Geografi

ISSN: 2774-6968

STRATEGIES FOR SUSTAINABLE MANGROVE TOURISM DEVELOPMENT IN BULU CINDEA

Nurul Maghfira[1], Abdul Malik[2*], Muhammad Yusuf[3], Rahma Musyawarah[4]

[1]Study Program of Geogrphy Education, Postgraduate Program, Universitas Negeri Makassar, Indonesia
[2*,3,4]Department of Geography, Faculty Mathematics and Natural Sciences, Universitas Negeri Makassar, Indonesia

Email: nurulmaghfira278@gmail.com[1], abdulmalik@unm.ac.id[2*], m.yusuf@unm.ac.id[3], rahma.musyawarah@unm.ac.id[4]

Journal Website: http://ejurnal.unima.ac.id/index.php/geographia

DOI: 10.53682/gjppg.v6i2.12729
(Accepted: 18-10-2025; Revised: 02-11-2025; Approved: 06-11-2025)

ABSTRACT

This study explores the potential and challenges of developing mangrove tourism in Bulu Cindea, South Sulawesi Province, Indonesia, within the framework of the blue economy. The research assesses the feasibility of leveraging the region's natural beauty and strategic location to promote sustainable tourism while addressing existing weaknesses and threats. Using a SWOT analysis, the study identifies key strengths, such as the area's scenic vistas, accessibility, and broad mangrove ecosystems, alongside weaknesses, including inadequate promotion, limited professional expertise, and insufficient community involvement. Growth opportunities include economic development, strategic location, community support, and social media marketing, while threats involve facility damage, competition, pollution, and declining tourist interest. The research employs qualitative and quantitative methods to evaluate these factors, offering strategic recommendations to enhance the management and promotion of mangrove tourism. These recommendations include improving promotional strategies, upgrading infrastructure, developing professional skills, involving local communities, and implementing effective environmental protection measures. The findings contribute to sustainable tourism by demonstrating how targeted interventions can address barriers to development and align with blue economy principles, ensuring economic benefits and ecological preservation. This study provides valuable insights for policymakers, local stakeholders, and tourism developers seeking to foster sustainable tourism practices in similar environmental contexts.

Kata Kunci: *Blue economy, Mangrove tourism, South Sulawesi, Sustainable development, SWOT analysis*

INTRODUCTION

Climate change, environmental degradation, and growing economic demands have become major challenges for many countries, particularly those with abundant natural resources like Indonesia (Raihan et al., 2023; Malik et al., 2023). In recent decades, the concept of the blue economy has emerged as a sustainable solution to address these challenges, especially in utilizing marine and coastal ecosystems. The blue economy emphasizes the wise exploitation of natural resources and

considers ecological sustainability and the empowerment of local economies (Adiprayoga & Samiaji, 2021). One tangible application of this concept can be seen in environmentally-based tourism development, such as mangrove tourism (Phelan et al., 2020; Picken, 2023).

Mangrove forests are one of the most critical ecosystems found along Indonesia's coastlines (Suhardi et al., 2024; Malik et al., 2017). These ecosystems serve as carbon sinks and natural barriers against coastal erosion (Temmerman et al., 2023) and as habitats for various species of flora and fauna, including fish, birds, and other marine organisms (Kathiresan, 2021). Mangroves also have great potential to be developed as tourism destinations (Malik et al., 2019; 2024). Mangrove tourism preserves the mangrove ecosystem and can positively impact the local economy through sustainable tourism activities (Tjahjono et al., 2022; Blanton et al., 2024; Malik et al., 2024).

Bulu Cindea Village, located in Pangkajene and Islands Regency (Pangkep), South Sulawesi, Indonesia, is one area with significant potential for developing blue economy-based mangrove tourism. The village has extensive mangrove forests and biodiversity that support tourism development (Ali et al., 2020). However, despite its great potential, managing mangrove tourism in Bulu Cindea Village still faces challenges, including limited infrastructure, minimal tourism promotion, and low community awareness of the importance of mangrove conservation. Therefore, it is crucial to formulate an effective and sustainable tourism management strategy based on the strengths of the blue economy that can empower the local community while preserving the ecosystem.

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is one practical approach to formulating a management strategy (Adiprayoga & Samiaji, 2021). This analysis helps to identify the strengths, weaknesses, opportunities, and threats facing the development of mangrove tourism (Titisari et al., 2022; Swangjang & Kornpiphat, 2021) in Bulu Cindea Village. For instance, strengths can be derived from the area's natural beauty and ecological potential, while weaknesses may include lacking infrastructure and management capacity. Opportunities arise from the increasing global awareness of the importance of sustainable tourism, whereas threats could involve environmental degradation or competition with other nearby tourism destinations (Blanton et al., 2024).

Despite the existing research on mangrove conservation and its tourism potential, there remains a research gap regarding the application of the blue economy in local tourism management, particularly in Bulu Cindea Village. Most of the current literature focuses on the ecological conservation of mangroves or the general economic impacts of tourism without holistically integrating the blue economy concept. Furthermore, each region has unique social, economic, and ecological characteristics, necessitating management approaches tailored to local conditions (Picken, 2023).

This study aims to fill this gap by focusing on the blue economy-based management of mangrove tourism in Bulu Cindea Village. Specifically, the objectives of this research are: (1) to identify the potential and challenges faced in the development of mangrove tourism in Bulu Cindea Village, (2) to formulate management strategies based on SWOT analysis, and (3) to provide concrete recommendations to improve sustainable mangrove tourism management. This research is expected to contribute significantly, not only in academic discourse but also in practical applications for local tourism management. Hence, it can be a reference for policymakers and tourism actors in optimizing Indonesia's blue economy-based mangrove tourism potential.

RESEARCH METHODS

This study employed a mixed-methods approach to achieve its objectives, incorporating qualitative and quantitative techniques to comprehensively understand mangrove tourism's current status and potential in Bulu Cindea Village.

Data Collection

Quantitative data was collected through surveys and structured questionnaires (Tjahjono et al., 2022) administered to local communities, tourism operators, and visitors to capture their perceptions, economic impacts, and management practices concerning mangrove tourism. In addition, secondary data on mangrove conditions, tourist statistics, and economic indicators was obtained from relevant local and regional agencies.

Complementing this, qualitative data was gathered through semi-structured interviews with key stakeholders (Adiprayoga & Samiaji, 2021), such as community leaders, local government officials, and environmental experts, to gain deeper insights into the challenges and opportunities for sustainable tourism. Observational field visits were also conducted to evaluate current tourism practices and their effects on the mangrove ecosystem.

SWOT Analysis

The SWOT analysis was performed to identify the strengths, weaknesses, opportunities, and threats associated with mangrove tourism (Titisari et al., 2022; Swangjang & Kornpiphat, 2021; Adiprayoga & Samiaji, 2021) in Bulu Cindea Village. This analysis was based on the data collected through surveys, interviews, and field observations and helped formulate strategic recommendations for sustainable development.

RESEARCH RESULTS

Based on the SWOT analysis conducted in the Bulu Cindea Tourism Area, it is presented in the following Table 1.

Table 1. Matrix SWOT

IFAS / EFAS	Strengths (S)	Weaknesses (W)
	1. Beautiful scenery. 2. Easy access from urban centers. 3. Natural resources supporting tourism. 4. Large area for tourism. 5. Designated as a tourism spot in Pangkajene and Islands. 6. Good security and comfort.	1. Ineffective promotion. 2. Lack of professional staff. 3. Limited involvement of the local community in management. 4. Insufficient funding. 5. Lack of educational signboards on-site.
Opportunities (O) 1. Economic growth. 2. Strategic location as a transit hub. 3. Support from local communities. 4. Potential for social media promotion. 5. Basic facilities like additional vendors.	S-O Strategies 1. Utilize beautiful scenery, accessibility, and local support to attract tourists. 2. Enhance tourism facilities to meet growing visitor demand. 3. Maximize development planning using existing strengths and community involvement.	W-O Strategies 1. Use social media to promote tourism and support the local economy. 2. Improve facilities through development planning. 3. Increase community involvement and training to boost quality.
Threats (T) 1. Damage to available facilities 2. Competition among tourist attractio 3. Pollution of the mangrove ecosyste due to waste 4. Availability of clean water 5. Decline in tourist interest	S-T Strategies 1. Optimize facility use to prevent damage by irresponsible tourists. 2. Carefully use natural resources to prevent environmental damage. 3. Organize tourist areas meticulously to attract tourists. 4. Customize Bulu Cindea mangrove tourism facilities to reduce competition with other tourist areas. 5. Prevent pollution of organic and inorganic waste at Bulu Cindea mangrove tourism. .	W-T Strategies 1. Maximize promotion effectiveness to attract tourists despite limited resources for tourism development planning at Bulu Cindea mangrove. 2. Enhance professional workforce quality in managing Bulu Cindea mangrove tourism to minimize environmental pollution from improper management. 3. Implement monitoring and evaluation involving local communities to manage Bulu Cindea mangrove tourism better. 4. Monitor and control facility quality and use to prevent damage by irresponsible tourists. 5. Use posters and boards to educate tourists about Bulu Cindea mangrove tourism and encourage environmental cleanliness.

Source: Data Analysis Results, 2024

DISCUSSIONS

Potential and challenges of Bulu Cindea mangrove tourism area

The development of mangrove tourism in Bulu Cindea holds immense potential due to the area's natural beauty, rich biodiversity, and

strategic location. The expansive mangrove forests in the region offer a diverse and pristine ecosystem, which not only supports a variety of marine life but also serves as a natural barrier against coastal erosion, contributing significantly to environmental resilience (Himes-Cornell et al., 2018). These ecological features and the area's scenic landscape create a compelling draw for eco-tourists seeking education and recreation in natural settings. The proximity of Bulu Cindea to major urban centers, such as Pangkajene, further enhances its attractiveness, making it easily accessible for both local visitors and travelers passing through the region. The village's official recognition as a tourist destination also adds to its potential by providing a foundation for future investments in tourism infrastructure and conservation initiatives. This recognition highlights the area's readiness to be developed as a sustainable tourism hub that aligns with blue economy principles, which aim to balance economic development with environmental sustainability (Picken, 2023).

However, despite these strengths, significant challenges must be addressed to fully realize Bulu Cindea's potential as a sustainable tourism destination. One of the key obstacles is the lack of effective promotion. Bulu Cindea struggles to gain widespread attention due to limited marketing efforts, particularly in terms of digital presence and outreach to international tourists. Without targeted promotion, the village's unique ecological and scenic assets remain largely unknown to a broader audience. Another challenge is the shortage of professional management and skilled human resources, which hampers the ability to provide high-quality services and visitor experiences. Tourism development requires trained personnel in eco-guiding, hospitality, and environmental education, but these competencies are currently lacking, limiting the area's capacity to manage and sustain tourism activities (Samal & Dash, 2024).

Furthermore, the involvement of local communities in the management and economic benefits of tourism remains insufficient (Huong Hoang & Trang Nguyen, 2023; Samal & Dash, 2024). For tourism to be sustainable and inclusive, local communities must play an active role as custodians of the natural environment and as direct beneficiaries of tourism income. Limited community participation risks undermining long-term conservation efforts and may lead to unequal distribution of economic benefits (Koda, 2023; Samal & Dash, 2024). Financial constraints also present a major barrier to the development of tourism infrastructure. With limited resources, investing in necessary facilities, such as eco-friendly accommodations, waste management systems, and educational signage that can enhance the visitor experience and support environmental awareness is difficult. Inadequate infrastructure, particularly the lack of informative displays about the importance of mangrove ecosystems, further hinders the potential for educating tourists about the need for conservation (Blanton et al., 2024).

These challenges highlight the need for a comprehensive and strategic approach to developing Bulu Cindea's mangrove tourism. By addressing these issues, such as improving promotion efforts, investing in professional training, fostering community involvement, and securing financial infrastructure support, the village can become a leading example of sustainable tourism, contributing to local economic growth and environmental conservation (Zhang et al., 2022; Chaiyakot et al., 2023; Samal & Dash, 2024).

Management Strategies based on SWOT analysis

Based on the SWOT analysis, the management strategies for Bulu Cindea's mangrove tourism development focus on harnessing the area's strengths, overcoming weaknesses, leveraging opportunities, and mitigating threats. The SWOT matrix, detailed in the Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS), provides a clear framework for developing these strategies (Table 1).

The analysis reveals how internal factors such as natural beauty and external opportunities like community support can drive sustainable tourism growth while addressing limitations such as weak promotion and inadequate infrastructure.

Internal Factors Analysis (IFAS)

The strengths of Bulu Cindea's mangrove tourism stem from its picturesque landscape, easy accessibility from urban areas, and the extensive mangrove ecosystem, which make it a prime destination for tourism. The village's designation as an official tourist destination enhances its appeal, attracting eco-conscious

tourists looking for scenic and accessible nature-based experiences. Additionally, the high levels of security and comfort within the area contribute to a positive visitor experience, encouraging repeat visits (Aimon et al., 2023).

However, weaknesses such as ineffective promotion, a lack of a professional workforce, and insufficient involvement from the local community present challenges to sustainable tourism development. Limited financial resources further hinder efforts to enhance infrastructure, such as installing educational signboards and other facilities to improve the visitor experience and promote environmental awareness. Addressing these weaknesses requires strategic planning and increased investment in marketing, workforce development, and community engagement (Huong Hoang & Trang Nguyen, 2023).

External Factors Analysis (EFAS)

The external environment offers several opportunities to support the growth of mangrove tourism in Bulu Cindea. Economic growth in the region and the strategic location of Bulu Cindea as a transit point to various tourist destinations provide a unique advantage. Community support and the potential for digital promotion through social media present further opportunities to increase visibility and attract more visitors. The growing interest in eco-friendly tourism can also be leveraged to promote Bulu Cindea as a sustainable tourism destination, driving local economic development through an increase in visitor numbers and related economic activities.

However, several threats must be managed to ensure the sustainability of the mangrove ecosystem and the tourism sector's long-term viability. Environmental degradation due to irresponsible tourist behavior, pollution from waste, and potential competition from other tourist destinations pose significant risks (Hasan, 2024). Issues such as ensuring the availability of clean water and maintaining visitor interest over time must also be addressed through effective management and regulatory measures (Moyle et al., 2022).

Management Strategies

Based on the strengths and opportunities outlined in the SWOT analysis, several strategic initiatives can be implemented to enhance the development of Bulu Cindea's mangrove tourism. The Strengths-Opportunities (S-O) strategies maximize the area's strengths and seize external opportunities. For instance, the natural beauty of the mangrove forests and the village's established status as a tourist destination can be leveraged to promote sustainable tourism activities, such as eco-tours, educational programs, and nature walks (Blanton et al., 2024). The accessible location and scenic landscape should be promoted through targeted marketing campaigns that capitalize on digital platforms and social media to attract local and international tourists (Vorobjovas-Pinta & Wilk, 2022). Additionally, the planning and preparation of adequate facilities should align with the increasing number of visitors, ensuring that the tourism infrastructure meets the expectations of tourists (Tjahjono et al., 2022).

To address weaknesses while leveraging opportunities (W-O strategies), efforts should be made to improve promotion through social media and other platforms (Vorobjovas-Pinta & Wilk, 2022). Given the lack of effective marketing and the limited involvement of local communities, increasing community participation in tourism management and development is essential (Islam & Sarker, 2021). Training programs can be introduced to enhance the skills of local stakeholders, enabling them to take on more active roles in tourism operations (Samal & Dash, 2024). This would also help ensure the long-term sustainability of the tourism industry by fostering local ownership and responsibility for preserving the mangrove ecosystem. Financial constraints can be mitigated through partnerships with private investors, government agencies, or non-governmental organizations (NGOs) that support tourism initiatives (Wegner, 2016).

To mitigate threats using existing strengths (S-T strategies), it is crucial to implement sustainable practices that protect the mangrove ecosystem from degradation (Sarker, 2018). For instance, proper maintenance and management of existing facilities can prevent damage caused by careless tourists. Strict regulations should be enforced to ensure that natural resources are used responsibly, preserving the ecological integrity of the mangrove forests. The unique features of Bulu Cindea's tourism offerings, such as educational programs about mangrove conservation, should be emphasized to differentiate the site from other nearby tourist destinations (Kardana et al., 2023).

Furthermore, measures to prevent pollution (Sarker, 2018), such as regular clean-up initiatives and installing waste disposal facilities, should be implemented to protect the ecosystem.

Lastly, addressing weaknesses and threats (W-T strategies) requires community involvement, enhanced workforce training, and strict environmental management (Kala & Bagri, 2018). Promotion efforts should be expanded to attract investment, allowing for more comprehensive tourism facilities to be developed. Improving professionalism among local workers can also help minimize environmental damage caused by ineffective management practices (Kala & Bagri, 2018). A robust supervision and evaluation system involving local communities can help monitor tourism activities and ensure they align with sustainability goals (Samal & Dash, 2024). Additionally, Clear and visible signage and educational materials, such as posters and infographics, should be installed throughout the site to inform visitors about mangrove conservation and encourage responsible behavior (Kala & Bagri, 2018).

CONCLUSIONS

The development of mangrove tourism in Bulu Cindea holds considerable promise due to its remarkable natural beauty, strategic location, and official destination designation**.** Its picturesque landscapes, ease of access from urban centers, and extensive mangrove ecosystems provide a strong foundation for tourism, aligning with blue economy principles that advocate for a balance between economic growth and environmental sustainability. However, realizing this potential faces challenges, including ineffective promotional strategies, a shortage of skilled professionals, limited community engagement, and inadequate infrastructure.

The SWOT analysis reveals Bulu Cindea's strengths and opportunities—such as its scenic beauty and strategic location—are counterbalanced by weaknesses and threats. While the area boasts beautiful panoramas, easy accessibility, and expansive mangrove ecosystems, challenges such as ineffective promotion, insufficient professional expertise, and a lack of community involvement hinder its progress. Financial constraints and inadequate facilities, like educational signboards and visitor amenities, limit its ability to engage tourists fully and showcase the value of the mangrove ecosystem.

To overcome these challenges and leverage existing opportunities, several recommendations are proposed. Firstly, enhancing promotional efforts through social media and other marketing channels can significantly boost visitor numbers and counteract funding limitations. Effective promotion will attract more tourists and increase the visibility of Bulu Cindea as a premier mangrove tourism destination.

RECOMENDATIONS

Improving infrastructure is another crucial step. Investing in upgrades such as educational signboards and visitor amenities will enhance the overall tourist experience and accommodate the growing number of visitors. This facility improvement will provide a more comfortable and engaging tourist environment, contributing to positive experiences and encouraging repeat visits.

Developing professional capacity among local staff is essential for successfully managing tourism activities. Training and professional development will ensure that personnel have the skills for effective tourism management and environmental protection. Well-trained staff will better manage the influx of visitors and uphold sustainability and conservation standards.

Increasing community involvement in tourism management is also recommended. Engaging local communities in the planning and management of tourism activities will foster a sense of ownership and responsibility, ensuring that the benefits of tourism are widely shared and that the local community is actively involved in preserving the mangrove ecosystem.

Implementing measures for environmental protection is vital. Developing and enforcing policies to prevent pollution and manage waste effectively will help preserve the mangrove ecosystem and maintain its appeal to tourists. A clean and well-maintained environment is crucial for the ecosystem's health and visitors' satisfaction.

Finally, a strategic approach to planning and development should be adopted. Continuous assessment and refinement of tourism development plans will help address emerging challenges and seize new opportunities. Structured planning will

facilitate sustainable growth and enhance Bulu Cindea's attractiveness as a tourist destination.

By addressing these recommendations, Bulu Cindea can unlock its full potential as a sustainable mangrove tourism destination. This approach will contribute to local economic development and ensure the conservation and preservation of the mangrove ecosystem, aligning with the principles of the blue economy.

REFERENCES

Adiprayoga, S. N., & Samiaji, J. 2021. Opportunities and Strategies for the Blue Economy Through the Empowerment of Sumatera Coastal Communities in Supporting the Realization of the National Food Security. *IOP Conference Series: Earth and Environmental Science*, *934*(1), 012039. https://doi.org/10.1088/1755-1315/934/1/012039

Aimon, H., Zulvianti, N., & Abror. 2023. Do Sustainable Tourism Development, Psychological Safety, and Halal Friendly Destination Performance Lead to Tourist Electronic Word of Mouth? The Role of Tourist Satisfaction. *International Journal of Sustainable Development and Planning*, *18*(4), 1167–1178. https://doi.org/10.18280/ijsdp.180421

Ali, M., Rusli, M., & Ekawati, S. A. 2020. Identification of economic activity in coastal community (Case study: Bulu Cindea village, Bungoro district, Pangkep region of South Sulawesi). *IOP Conference Series: Earth and Environmental Science*, *419*(1), 012018. https://doi.org/10.1088/1755-1315/419/1/012018

Blanton, A., Ewane, E. B., McTavish, F., Watt, M. S., Rogers, K., Daneil, R., Vizcaino, I., Gomez, A. N., Arachchige, P. S. P., King, S. A. L., Galgamuwa, G. A. P., Peñaranda, M. L. P., al-Musawi, L., Montenegro, J. F., Broadbent, E. N., Zambrano, A. M. A., Hudak, A. T., Swangjang, K., Velasquez-Camacho, L., … Mohan, M. 2024. Ecotourism and mangrove conservation in Southeast Asia: Current trends and perspectives. *Journal of Environmental Management*, *365*, 121529. https://doi.org/10.1016/j.jenvman.2024.121529

Chaiyakot, P., Ruksapol, A., Chaiyaket, W., & Sakunchannarong, N. 2023. Community-Based Tourism Management: Southern Thailand. *Central European Management Journal*, *31*(1), 333–349. https://journals.kozminski.cems-j.com/index.php/pl_cemj/pdf/2023/333.pdf

Hasan, A. A.-T. 2024. An environmental mitigation behavior model predicting waste reduction among young coastal tourists in Bangladesh. *Journal of Hospitality and Tourism Insights*. https://doi.org/10.1108/JHTI-04-2024-0283

Himes-Cornell, A., Pendleton, L., & Atiyah, P. 2018. Valuing ecosystem services from blue forests: A systematic review of the valuation of salt marshes, sea grass beds and mangrove forests. *Ecosystem Services*, *30*, 36–48. https://doi.org/10.1016/j.ecoser.2018.01.006

Huong Hoang, T. T., & Trang Nguyen, T. Q. 2023. Stakeholder Involvement and the Attainment of SDGs at Local Tourism Destinations. *Tourism*, *71*(3), 432–446. https://doi.org/10.37741/t.71.3.1

Islam, M. W., & Sarker, T. 2021. *Sustainable Coastal and Maritime Tourism: A Potential Blue Economy Avenue for Bangladesh* (ADBI Worki, Issue 1293). Asian Development Bank Institute.

Kala, D., & Bagri, S. C. 2018. Barriers to local community participation in tourism development: Evidence from mountainous state Uttarakhand, India. *Tourism*, *66*(3), 318–333.

Kardana, I. K., Kristianto, Y., & Widyatmaja, I. G. N. 2023. Model of Local Community Participation in the Management of the Ngurah Rai Mangrove Forest Area as a Tourist Attraction in Denpasar City, Bali. *International Journal Of Humanities Education and Social Sciences (IJHESS)*, *3*(2). https://doi.org/10.55227/ijhess.v3i2.602

Kathiresan, K. 2021. Mangroves: Types and Importance. In *Mangroves: Ecology, Biodiversity and Management* (pp. 1–31).

Springer Singapore. https://doi.org/10.1007/978-981-16-2494-0_1

Koda, S. H. A. 2023. Strategies for improving community participation in Mangrove Ecosystem Conservation in Teluk Kupang Coastal Areas (A case study of Nunkurus and Oeteta Villages). *IOP Conference Series: Earth and Environmental Science*, *1266*(1), 012029. https://doi.org/10.1088/1755-1315/1266/1/012029

Malik, A., Lynham, J., Ali, M. I., Jalil, A. R., Rahim, A., & Rahmawati, A. 2024. The Value of Mangroves to Domestic Tourists and Local Households in South Sulawesi, Indonesia. *Tourism in Marine Environments*. https://doi.org/10.3727/216901924X17221514868461

Malik, A., Mertz, O., & Fensholt, R. 2017. Mangrove forest decline: consequences for livelihoods and environment in South Sulawesi. *Regional Environmental Change*, *17*(1), 157–169. https://doi.org/10.1007/s10113-016-0989-0

Malik, A., Rahim, A., Jalil, A. R., Amir, M. F., Arif, D. S., Rizal, M., Husain, J., William, D., & Jihad, N. 2023. Mangrove blue carbon stocks estimation in South Sulawesi Indonesia. *Continental Shelf Research*, *269*, 105139. https://doi.org/10.1016/j.csr.2023.105139

Malik, A., Rahim, A., Sideng, U., Rasyid, A., & Jumaddin, J. 2019. Biodiversity assessment of mangrove vegetation for the sustainability of ecotourism in West Sulawesi, Indonesia. *AACL Bioflux*, *12*(4), 1458–1466.

Moyle, B. D., Weaver, D. B., Gössling, S., McLennan, C., & Hadinejad, A. 2022. Are water-centric themes in sustainable tourism research congruent with the UN Sustainable Development Goals? *Journal of Sustainable Tourism*, *30*(8), 1821–1836. https://doi.org/10.1080/09669582.2021.1993233

Phelan, A. Anya, Ruhanen, L., & Mair, J. 2020. Ecosystem services approach for community-based ecotourism: towards an equitable and sustainable blue economy. *Journal of Sustainable Tourism*, *28*(10), 1665–1685. https://doi.org/10.1080/09669582.2020.1747475

Picken, F. 2023. Tourism and the blue economy. *Tourism Geographies*, 1–9. https://doi.org/10.1080/14616688.2023.2291821

Raihan, A., Voumik, L. C., Rahman, M. H., & Esquivias, M. A. 2023. Unraveling the interplay between globalization, financial development, economic growth, greenhouse gases, human capital, and renewable energy uptake in Indonesia: multiple econometric approaches. *Environmental Science and Pollution Research*, *30*(56), 119117–119133. https://doi.org/10.1007/s11356-023-30552-2

Samal, R., & Dash, M. 2024. Stakeholder engagement in advancing sustainable ecotourism: an exploratory case study of Chilika Wetland. *Discover Sustainability*, *5*(1), 50. https://doi.org/10.1007/s43621-024-00233-2

Sarker, S. 2018. Resident's Awareness Towards Sustainable Tourism for Ecotourism Destination in Sundarban Forest, Bangladesh. *Pacific International Journal*, *1*(1), 32–45. https://doi.org/10.55014/pij.v1i1.38

Suhardi, R. M., Rahardi, W., Shih, H.-C., Mantiquilla, J. A., Wu, Y.-H., Shiao, M.-S., & Chiang, Y.-C. 2024. A Review of the Mangrove Ecosystem in Indonesia: Biodiversity, Conservation, and Challenges in Sustainable Management. *Ecological Genetics and Genomics*, 100282. https://doi.org/10.1016/j.egg.2024.100282

Swangjang, K., & Kornpiphat, P. 2021. Does ecotourism in a Mangrove area at Klong Kone, Thailand, conform to sustainable tourism? A case study using SWOT and DPSIR. *Environment, Development and Sustainability*, *23*(11), 15960–15985. https://doi.org/10.1007/s10668-021-01313-3

Temmerman, S., Horstman, E. M., Krauss, K. W., Mullarney, J. C., Pelckmans, I., & Schoutens, K. 2023. Marshes and Mangroves as Nature-Based Coastal Storm Buffers. *Annual Review of Marine Science*, *15*(1), 95–118. https://doi.org/10.1146/annurev-marine-040422-092951

Titisari, P. W., Elfis, E., Chahyana, I., Janna, N., Nurdila, H., & Widari, R. S. 2022. Management Strategies of Mangrove Biodiversity and the Role of Sustainable Ecotourism in Achieving Development Goals. *Journal of Tropical Biodiversity and Biotechnology*, *7*(3), 72243. https://doi.org/10.22146/jtbb.72243

Tjahjono, A., Adi Intyas, C., & Fattah, M. 2022. Mangrove Management Strategy for Sustainable Business Based on Indonesian Ecological Products. *GeoJournal of Tourism and Geosites*, *43*(3), 1045–1055. https://doi.org/10.30892/gtg.43325-919

Vorobjovas-Pinta, O., & Wilk, V. 2022. Marketing Suburban Tourism Destinations on Social Media: The Case of the City of Joondalup, Western Australia. In *Case Based Research in Tourism, Travel, Hospitality and Events* (pp. 219–236). Springer Nature Singapore. https://doi.org/10.1007/978-981-16-4671-3_13

Wegner, G. I. 2016. Payments for ecosystem services (PES): a flexible, participatory, and integrated approach for improved conservation and equity outcomes. *Environment, Development and Sustainability*, *18*(3), 617–644. https://doi.org/10.1007/s10668-015-9673-7

Zhang, C., Xu, Z., Skare, M., & Kraus, S. 2022. Sustainable Tourism Research Progress. *Tourism*, *70*(3), 493–511. https://doi.org/10.37741/t.70.3.11