



Tyobeka, Thabelo¹

A Systematic Literature Review of Coastal and Marine Tourism Within Marine Protected Areas in Sub-Saharan Africa (2015–2025)

ABSTRACT

Coastal and Marine Tourism (CMT) is increasingly acknowledged as a significant component of conservation-oriented development in Sub-Saharan Africa; however, research addressing CMT within Marine Protected Areas (MPAs) remains fragmented. This systematic review synthesised peer-reviewed journal articles published between 2015 and 2025 to identify key characteristics, opportunities, and challenges related to CMT within MPAs and adjacent coastal areas in the context of conservation development. Searches were conducted using the databases Taylor & Francis Online, ScienceDirect, Google Scholar, and EBSCOhost, with the final search completed in November 2025. A structured screening process resulted in the inclusion of 22 systematically relevant articles published across 13 peer-reviewed journals. Inclusion criteria comprised empirical and conceptual peer-reviewed studies focusing on CMT within and around MPAs in Sub-Saharan Africa. Exclusion criteria eliminated grey literature, studies not addressing CMT or MPAs, and publications not written in English. The reviewed literature indicates that CMT within MPAs predominantly focuses on marine wildlife tourism. The synthesis employed a qualitative narrative approach, and study quality was assessed using appropriate evaluation criteria. While CMT is widely perceived as a mechanism for generating financial value and supporting development through enhanced conservation awareness, several studies highlight emerging behavioural disturbances affecting marine species, limited community involvement, and development challenges related to the societal legitimacy of MPAs. Overall, current trends suggest the presence of both substantial opportunities and notable risks, particularly concerning citizen involvement in scientific agendas. Key limitations of this review include publication bias, language restrictions, and reliance on search engines and databases for indexing.

Keywords: coastal tourism, marine tourism, marine protected areas, Sub-Saharan Africa, tourism sustainability, marine wildlife tourism, citizen science

¹ Lecturer, Cape Peninsula University of Technology, Faculty of Business and Management Sciences, Department of Tourism and Events Management, Cape Town, South Africa. Email: tyobekat@cput.ac.za, ORCID: <https://orcid.org/0000-0001-7613-5639>

INTRODUCTION

Coastal and Marine Tourism (CMT) is emerging as a dynamic sector of tourism development in Sub-Saharan Africa, closely linked to Marine Protected Areas (MPAs). As countries in Sub-Saharan Africa transition towards an ocean-based economy, coastal destinations across the region have experienced increasing tourism demand, alongside growing complexity in maritime-related activities (March et al., 2024). The rising interest in coastal and marine environments places MPAs at the intersection of conservation concerns and tourism development objectives, resulting in a complex relationship among conservation, local communities, and revenue generation within MPAs in Sub-Saharan Africa. Much of the existing knowledge on CMT in the region remains dispersed across multiple countries, thematic issues, and methodological approaches within the scientific literature.

Based on previously consulted literature, a diverse range of tourism types operates in and around MPAs. Marine wildlife tourism represents a particularly prominent component, encompassing activities such as shark cage diving, whale watching, dolphin swimming, and whale shark encounters (Haskell et al., 2015; Geldenhuys et al., 2019; Dicken et al., 2025). Studies conducted in Mozambique also demonstrate that dolphin swimming activities constitute a pressure point for dolphin populations, with significant behavioural disruptions observed despite the implementation of control measures (Rocha et al., 2023). Similarly, research from Madagascar highlights both the financial value and conservation importance of marine wildlife tourism, particularly in areas characterised by a high presence of whale sharks (Ziegler et al., 2021).

Another strand of the literature focuses on socio-governance issues. In South Africa, challenges related to community access, historical inequalities, and limited participatory processes have been shown to influence perceived levels of support for MPAs, as well as their management effectiveness (Sowman & Sunde, 2018). More comprehensive evaluations of governance frameworks further identify challenges related to inadequate coordination, weak enforcement, and inequitable benefit distribution, all of which negatively affect conservation outcomes (Kirkman et al., 2023). Perceptions among local residents in Nungwi villages in Zanzibar similarly reveal mixed social impacts of tourism development, including employment opportunities alongside rising living costs and cultural pressures (Timothy & Said, 2023).

Emerging research on visitor engagement and learning offers promising pathways for strengthening linkages between tourism and conservation. Marine citizen science initiatives, both in general terms and through specific examples such as kelp forest projects in South Africa, demonstrate potential to enhance tourists' levels of understanding, critical reflection, and engagement in concrete conservation actions (Lucrezi, 2024; Lucrezi & D'Agnessa, 2025).

Despite the valuable insights provided by the literature, existing research remains fragmented across diverse themes, geographical contexts, and publication outlets. An initial assessment of publication patterns illustrates this dispersion, with the 22 reviewed studies published across no fewer than 13 academic journals. The African Journal of Hospitality, Tourism, & Leisure accounts

for the largest share (18.18%) of the reviewed publications, followed by the Journal of Ecotourism (13.64%) and Tourism in Marine Environments (13.64%). Given the recognised ecological value of MPAs and the growing economic significance of CMT, greater integration of existing evidence is required to more comprehensively inform understandings of opportunities, challenges, and regulatory implications associated with CMT in MPAs. Accordingly, to better identify prevailing patterns in the literature and draw attention to significant research gaps, this systematic literature review focuses on studies published between 2015 and 2025, examining critical issues related to CMT within MPAs in Sub-Saharan Africa. The purpose of this review is therefore to systematically locate, synthesise, and critically evaluate both empirical and conceptual studies of CMT conducted within or in proximity to MPAs across Sub-Saharan Africa.

METHODS

This systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, which facilitate transparency, reproducibility, and the systematic identification, screening, and synthesis of available literature for this study (Dramba et al., 2025). The review aimed to compile peer-reviewed literature focusing on Coastal and Marine Tourism (CMT) within Marine Protected Areas (MPAs), as well as coastal conservation zones in Sub-Saharan Africa, published between 2015 and 2025.

Conceptual Definitions and Analytical Framework

To ensure a clear understanding of the concepts framing the analysis and to maintain consistent use of terminology, this study draws on the concepts of coastal and marine tourism, marine protected areas, the blue economy, and governance.

According to Rogerson and Rogerson (2019), CMT refers to tourism activities occurring within coastal environments or marine ecosystems, including land-based tourism along coastlines and marine-based tourism involving wildlife observation, scuba diving, and boat cruising. In this review, particular emphasis is placed on forms of CMT that involve direct interaction with sensitive marine ecosystems and protected marine spaces (Lucrezi, 2024). Sowman and Sunde (2018) and Kirkman et al. (2023) define MPAs as clearly delineated marine and coastal areas that are effectively or formally managed to achieve the long-term conservation of nature, associated ecosystem services, and cultural heritage. Within this review, MPAs are examined not only as conservation instruments but also as socio-economic and governance spaces where tourism development, local livelihoods, and conservation objectives intersect.

The concept of the blue economy refers to the sustainable use of ocean, marine, and coastal resources to drive economic growth, improve living standards, and generate employment while maintaining the health of marine and coastal ecosystems (Rogerson & Rogerson, 2019; March et

al., 2024). In Sub-Saharan Africa, blue economy policy frameworks increasingly integrate CMT and MPAs as mechanisms to advance both socio-economic development and conservation objectives. The concept of governance refers to the formal and informal institutions, policies, and decision-making arrangements through which MPAs and related tourism activities are planned and managed to ensure effective regulation and conservation outcomes (Hugé et al., 2018; Kirkman et al., 2023).

Together, these thematic concepts provide the analytical foundation for this systematic review, as they enable an integrated examination of how tourism activities within and around MPAs relate to conservation, socio-economic, and governance dimensions under blue economy strategies in Sub-Saharan Africa. To maintain conceptual clarity and terminological consistency throughout the review, the key concepts underpinning the analytical framework are defined in Table 1. These definitions form the basis for the subsequent conceptual synthesis of the literature on coastal and marine tourism in marine protected areas in Sub-Saharan Africa.

Table 1. Key Concepts and Their Application in This Review

Concept	Definition Adopted in This Review	Relevance to Analysis
Coastal and Marine Tourism (CMT)	Tourism activities that take place in coastal and marine ecosystems, for instance, wildlife tourism and nature-oriented tourism.	Core focus of reviewed studies; links tourism demand with ecological and social impacts
Marine Protected Areas (MPAs)	Marine spaces that are legally and effectively governed with the objective of the long-term conservation of ecosystems and cultural values	Spatial and institutional context within which tourism–conservation interactions occur
Blue Economy	Sustainable use of marine resources to drive economic development and maintain the integrity of ecosystems.	Policy framework shaping tourism development and conservation priorities
Governance	Institutional framework, policies, and engagement processes that help govern the administration of MPAs as well as associated tourism	Analytical lens for assessing legitimacy, participation, and management effectiveness

Search Strategy

A structured search of academic databases commonly used in tourism-related research, as well as in environmental science and maritime studies, was conducted using the following search terms:

- Coastal and marine tourism
- Marine protected areas
- Marine conservation
- Marine wildlife tourism
- Sub-Saharan Africa tourism

Boolean operators were applied using combinations such as:

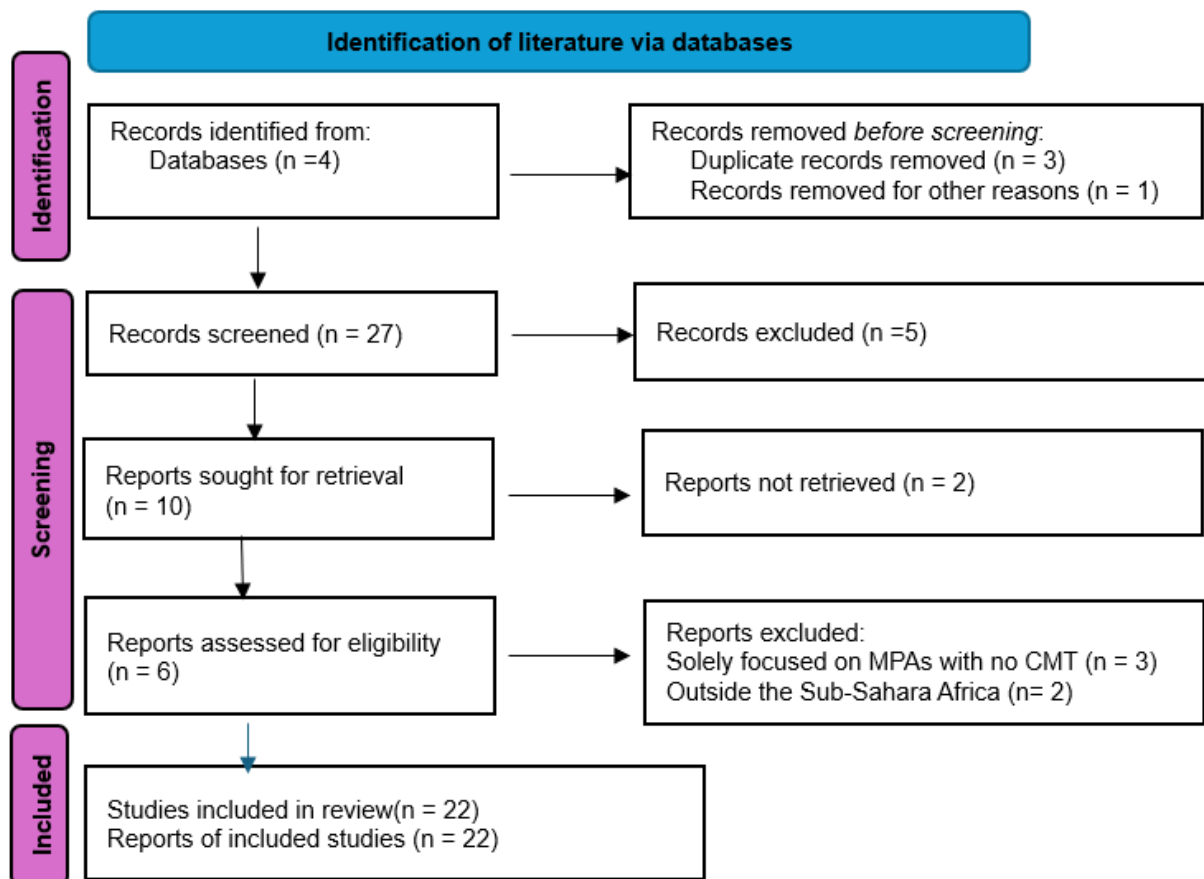
- Coastal tourism AND Marine Protected Areas AND Africa
- Coastal tourism AND community participation AND conservation
- Marine wildlife tourism AND MPA

- Sub-Saharan Africa AND tourism AND MPA
- Blue economy AND tourism AND “marine protected areas”

The articles reviewed comprise peer-reviewed publications in scholarly journals published between January 2015 and November 2025. The databases consulted are listed below, and the process of literature identification through these databases is illustrated in Figure 1.

- Taylor & Francis Online
- ScienceDirect
- Google Scholar
- EBSCOhost

Figure 1. PRISMA Flow Diagram for New Systematic Reviews Which Included Searches of Databases and Registers Only



Source: Page et al., 2021.

Methodological Transparency and Reproducibility

To enhance reproducibility and ensure methodological rigor, this review provides comprehensive documentation of the search process, inclusion and exclusion criteria, and the quality assessment procedure.

Search strings and queries

The searches were conducted using sets of predefined keywords and Boolean operators tailored to each database. The base search strings included: “coastal tourism” OR “marine tourism” AND “marine protected area” OR MPA AND Africa; “marine wildlife tourism” AND “marine protected area”; “blue economy” AND tourism AND “marine protected area”; and “community participation” AND tourism AND conservation. Searches were restricted to articles published in peer-reviewed journals between January 2015 and November 2025, and only English-language publications were considered.

Inclusion and exclusion criteria

Studies were included if they addressed tourism activities within or around Sub-Saharan Africa and presented findings related to ecological/systems, socio-economic, governance, and management issues relevant to tourism. In contrast, exclusion criteria comprised studies that focused solely on fisheries and marine ecology without a tourism component; were conducted outside Sub-Saharan Africa or in Central Sub-Saharan Africa, as this region is not coastal; presented grey or non-scholarly literature; or failed to meet the required quality assessment threshold. The inclusion and exclusion criteria are outlined below.

Studies that met the following criteria were considered for analysis:

- Primarily focused on tourism activities occurring within MPAs, near MPAs, or in designated coastal conservation areas in Sub-Saharan Africa.
- Presented empirical results related to ecological effects, visitor behavior, socio-economic outcomes, community attitudes, governance, and regional management in the context of tourism.
- Published in peer-reviewed journals between 2015 and 2025.
- Written in English.

Studies were excluded if they:

- Focused exclusively on fisheries, marine biology, or conservation without including a tourism component.
- Were conducted outside Sub-Saharan Africa (study area).
- Were conducted in Central Sub-Saharan Africa, as the region is not coastal.
- Were non-empirical in nature (e.g., editorials or commentaries).
- Consisted of reports or grey literature.
- Did not meet the appraisal criteria.

Screening and Coding Processes

The screening process was conducted in three phases: title screening, abstract screening, and full-text screening. Eligible studies were systematically coded according to publication details, study locations, tourism type variables, adopted methodologies, and the primary domains of interest addressed in the studies. These domains included issues related to wildlife tourism. The screening process consisted of the following phases:

1. Title screening, during which records that clearly did not relate to either CMT or MPAs were removed.
2. Abstract screening, which applied both the inclusion and exclusion criteria.
3. Full-text screening, conducted to determine final eligibility for inclusion in the study.

Following this screening procedure, a total of 22 articles were retained for analysis. These articles were subsequently coded based on variables such as source of publication, topic, methodology, and location. A PRISMA flow diagram, presented as Figure 1 above, illustrates the stages of identification, screening, eligibility, and inclusion of articles in this study.

Quality Appraisal

To ensure methodological rigor and minimize potential bias during data interpretation, a structured quality appraisal was conducted for each of the 22 studies included in the review. An appropriate quality assessment checklist was developed, drawing on standards from widely used critical appraisal frameworks. Each study was assessed against ten criteria, including:

1. clarity of the research aims;
2. appropriateness of the study design;
3. clarity of the data collection process;
4. appropriateness of the sampling methodology;
5. rigor of data analysis;
6. clarity of data presentation;
7. discussion of study limitations or potential sources of bias;
8. discussion of ethical considerations;
9. validity of the conclusions drawn; and
10. relevance of the study to the topic of interest.

Each criterion was evaluated using three categories—*Yes*, *Partly*, or *No*—allowing for a transparent and straightforward assessment of the methodological strengths and weaknesses of the studies without reliance on overly prescriptive numerical scoring systems. Studies that performed poorly were excluded, and the search terms were reapplied in the databases to identify replacement studies for those removed.

Data Extraction

A standardized data extraction process was employed to identify relevant information from each paper, including the study location, type of tourism, results related to socio-economic and ecological impacts, issues of governance and management, and community perceptions. Publication characteristics—such as the name of the journal, year of publication, and type of publication—were also extracted to support the analysis of publication trends.

Synthesis Approach

Given the diversity of methodologies and perspectives on CMT within MPAs, a narrative and thematic synthesis approach was deemed appropriate for this review. This approach allows for the integration of findings from diverse studies and facilitates the identification of key themes related to CMT, including wildlife-based tourism, ecological impacts, governance, community perceptions, motivations, and citizen science–based CMT concepts for conservation. Results from descriptive analyses, such as the frequency of studies across different journals, were also incorporated into the synthesis for this purpose.

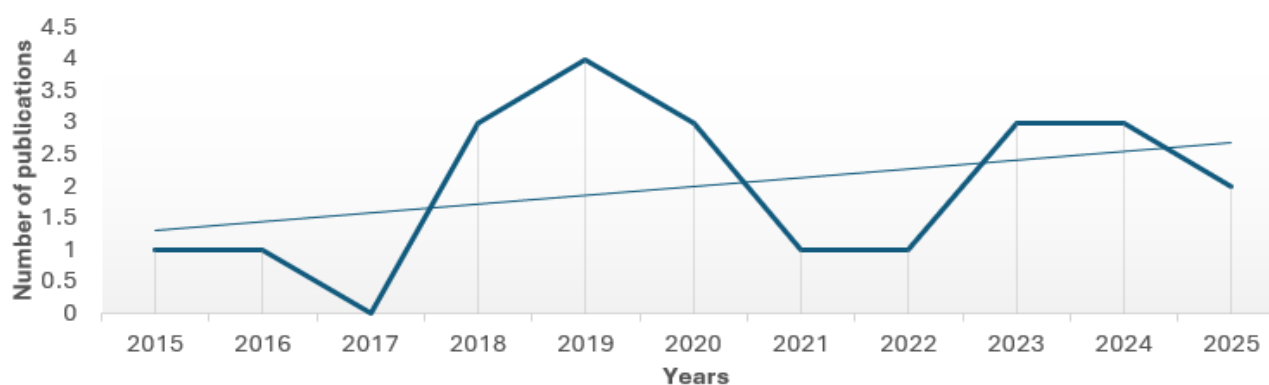
RESULTS

This chapter presents the findings of a systematic review of 22 peer-reviewed studies on CMT in MPAs in Sub-Saharan Africa published between 2015 and 2025. The results are organized thematically and capture both the empirical evidence and its interpretation in order to provide an integrated synthesis of the findings.

Publication Trends and Scholarly Growth in CMT Research

Trends in the volume and focus of publications addressing CMT in relation to MPAs in Sub-Saharan Africa between 2015 and 2025 are illustrated in Figure 2 below. The data indicate a steady increase in scholarly output over the period, with a notable rise in publication intensity from approximately 2020 onward. This pattern reflects growing academic and policy interest in marine conservation and blue economy initiatives, as well as in the role of MPAs as dual-functional spaces that support both marine conservation and tourism development.

Figure 2. Coastal and Marine Tourism in MPAs Publications Between 2015–2025.



Source: Researcher's own construct

Institutional and Geographic Distribution of Research

Table 2 presents the distribution of the reviewed articles across different journals. The *African Journal of Hospitality, Tourism, and Leisure* accounts for the largest share of publications, representing 18.18% of the reviewed articles, followed by the *Journal of Ecotourism* and *Tourism in Marine Environments*, each contributing 13.64%. This distribution indicates that tourism-focused journals serve as the primary outlets for disseminating CMT research related to MPAs.

The growing contribution of journals from other disciplines, including marine policy, ocean and coastal management, and biological conservation, further underscores the interdisciplinary nature of marine tourism research.

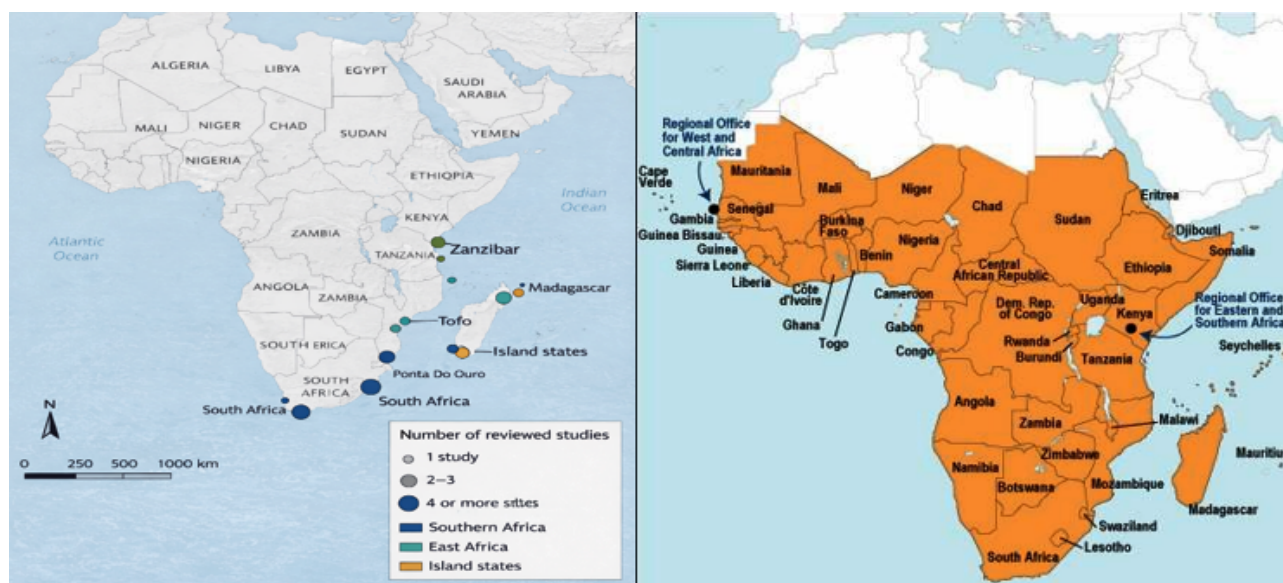
Table 2. Distribution of Articles by Journal

Journal Name	Number of Articles	Percentage (%)
African Journal of Hospitality, Tourism and Leisure	4	18.18%
African Journal of Marine Science	2	9.09%
Oryx	1	4.55%
Ocean and Coastal Management	2	9.09%
Journal of Outdoor Recreation and Tourism	1	4.55%
Journal of Ecotourism	3	13.64%
Tourism in Marine Environments	3	13.64%
The Journal for Transdisciplinary Research in Southern Africa	1	4.55%
Marine Policy	1	4.55%
Biological Conservation	1	4.55%
Urbani Izziv	1	4.55%
PloS One	1	4.55%
Heliyon	1	4.55%

The distribution of research locations shown in Figure 3 reveals a strong concentration of studies in Southern Africa, particularly along the South African coastline, where numerous MPAs and a well-established research infrastructure are present. A secondary concentration is observed along the East African coastline and in island nations, including Zanzibar, Mozambique, and Madagascar. In contrast, there is a pronounced underrepresentation of research in West and Central Sub-Saharan Africa. This imbalance reflects disparities in research infrastructure and capacity rather than shortcomings in the review process.

An analysis of institutional affiliations, as presented in Tables 4 and 5, further confirms this imbalance, indicating the dominance of South African universities as lead institutions. North-West University alone accounted for more than a quarter of the sampled studies. Although cross-border collaborations involving institutions from the United Kingdom, Belgium, and Poland were identified, the relatively low representation of East African institutions highlights persistent inequalities in knowledge production within Sub-Saharan Africa.

Figure 3. Geographical Distribution of CMT Research Sites Within or Adjacent to MPAs in Sub-Saharan Africa (2015–2025).



Note: Circle size indicates the number of studies per location. Source: Researcher's own construct based on reviewed studies; base map adapted from Johnson (2012).

Table 3. Number of Articles per Institutional Affiliation

Affiliation	Number of Articles	Percentage (%)	Affiliation Country
North-West University (TREES)	6	27.3%	South Africa
University of Cape Town (UCT)	1	4.5%	South Africa
University of KwaZulu-Natal	1	4.5%	South Africa
University of Zululand	1	4.5%	South Africa
KwaZulu-Natal Sharks Board	1	4.5%	South Africa
Nelson Mandela University / DFFE	1	4.5%	South Africa
University of Johannesburg	1	4.5%	South Africa
Cape Peninsula University of Technology	1	4.5%	South Africa
Vaal University of Technology	1	4.5%	South Africa
University of Portsmouth	2	9.1%	United Kingdom
University of Exeter	1	4.5%	United Kingdom
Scotland's Rural College (SRUC)	1	4.5%	United Kingdom
University of St Andrews	1	4.5%	United Kingdom
Hasselt University	1	4.5%	Belgium
University School of Physical Education in Wrocław	1	4.5%	Poland
Madagascar Whale Shark Project / Marine Megafauna Foundation	1	4.5%	Madagascar
State University of Zanzibar	1	4.5%	Tanzania

Table 4. Regional Affiliation Breakdown

Region	Number of Articles	Percentage (%)
Southern Africa (South African universities)	13	59.1%
Europe (UK, Belgium, Poland, Scotland)	7	31.8%
East Africa (Zanzibar, Madagascar NGOs)	2	9.1%

Dominance of Marine Wildlife Tourism

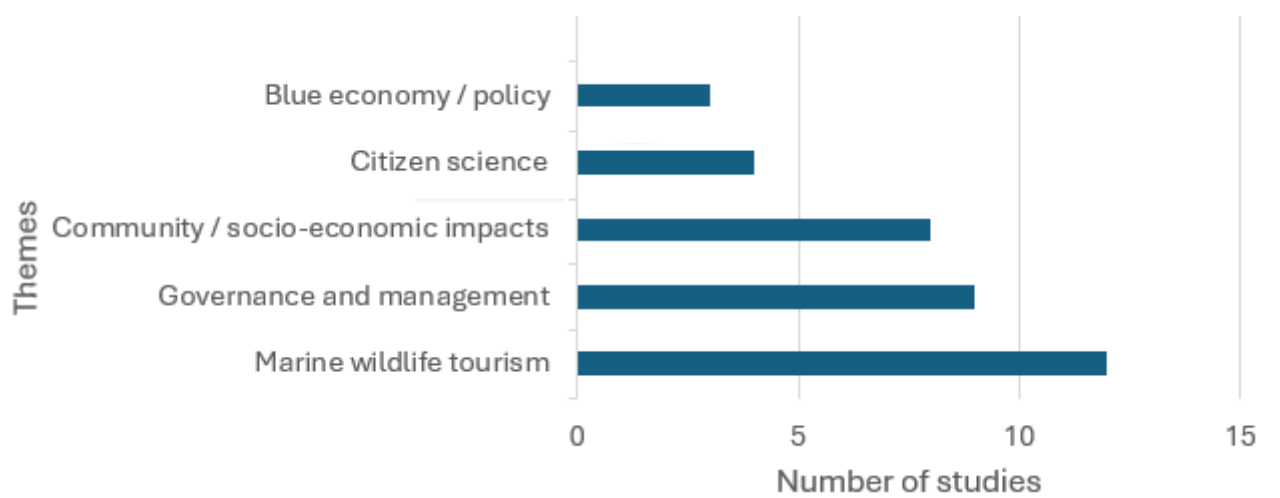
Thematically, marine wildlife tourism emerges as the dominant focus within the reviewed literature, accounting for 54.5% of the studies (Table 3). Activities such as shark cage diving, whale watching, dolphin swim tourism, and whale shark tourism feature prominently both in practice and in the academic literature. The prominence of these activities reflects the role of charismatic marine species within MPAs as key tourist attractions, which underpins their widespread representation in tourism development and in the reviewed studies.

Table 5. Frequency of Major Themes in Reviewed Studies (n = 22).

Theme	Number of Studies	Percentage (%)
Marine wildlife tourism	12	54.5
Governance and management	9	40.9
Community perceptions / socio-economic impacts	8	36.4
Citizen science / education	4	18.2
Blue economy / policy framing	3	13.6

Figure 4 further illustrates the relative weighting of thematic domains, revealing a pronounced emphasis on marine wildlife tourism research, followed by governance and management themes, while comparatively limited attention is devoted to citizen science and blue economy frameworks.

Figure 4. Frequency of Major Thematic Areas Addressed in CMT Research Within MPAs.



Source: Researcher's own construct

The findings consistently indicate that these activities have ecological implications, particularly in governance contexts characterized by weak regulatory enforcement. Documented disturbances to marine wildlife behavioral patterns—such as feeding and resting cycles—have been associated with dolphin swim tourism and whale watching in Mozambique and South Africa. From a socio-ecological systems (SES) perspective, these studies illustrate how tourism demand can place stress on ecosystems, especially where mechanisms to mediate interactions between society and ecology are insufficient. Despite the important role of marine wildlife tourism in financing and promoting conservation, these activities require adaptive and well-regulated management frameworks.

Governance, Policy, and MPA Legitimacy

Governance and management themes are addressed in 40.9% of the reviewed literature, highlighting persistent challenges related to regulatory enforcement, institutional coordination, public engagement, and benefit-sharing. The literature suggests that non-participatory governance arrangements negatively affect the perceived effectiveness and legitimacy of MPAs. In the South African context, a lack of equity and limited community participation in decision-making processes have been linked to opposition toward MPAs and conservation-oriented tourism development. Overall governance assessments emphasize the importance of joint and equitable governance systems that actively involve all stakeholders, including tourism operators and conservation authorities. Such governance systems play a critical mediating role in balancing ecosystem protection with tourism development.

Community Participation and Socio-economic Outcomes

Socio-economic issues are discussed in 36.4% of the reviewed studies. While CMT contributes to employment generation and economic activity, the literature indicates that its socio-economic impacts are often uneven, resulting in increased living costs for coastal communities. Case studies from Zanzibar and South Africa highlight that benefits frequently accrue to a limited group of stakeholders, with minimal gains for local communities. The findings suggest that limited participation and inequitable benefit-sharing contribute to the long-term unsustainability of CMT in MPAs. From a socio-ecological perspective, inequities in both social and ecological dimensions reduce the resilience of social-ecological systems and contribute to system degradation. The results clearly indicate that meaningful community development is essential for sustainable tourism integration.

Citizen Science and Educational Tourism as Emerging Pathways

Citizen science and educational tourism emerge as relatively new and underrepresented themes, appearing in 18.2% of the reviewed studies. Research conducted in South Africa indicates that participation in marine citizen science initiatives enhances tourists' environmental knowledge, critical reflection, and conservation-oriented behavior. Regardless of geographical scale, the findings suggest that citizen science and educational tourism offer promising avenues for rethinking tourism as a proactive component of conservation efforts rather than merely a source of ecological pressure. When framed within a socio-ecological systems approach, these strategies contribute to more integrative and adaptive governance models.

Knowledge Gaps, Regional Imbalances, and Implications for Generalisability

The results reveal pronounced institutional and geographical imbalances in the existing literature. Research is heavily concentrated in South Africa, with minimal contributions from East African island states and no identified studies from West or Central Sub-Saharan Africa. While these patterns reflect disparities in research infrastructure and funding, they raise significant concerns regarding the generalisability of the findings across the broader Sub-Saharan African region. Evidence derived from well-established MPAs and mature tourism systems may not adequately capture the realities of less-studied regions. Consequently, although the thematic findings of this review provide valuable insights into community-based marine tourism within MPAs, they should be applied cautiously when extrapolated to other geographic and institutional contexts.

CONCLUSIONS

This systematic literature review integrates peer-reviewed studies published between 2015 and 2025 that address CMT-related activities occurring within and around MPAs in Sub-Saharan Africa. The review employs a combination of narrative, quantitative, and spatial approaches to examine the interactions between tourism and conservation within a socio-ecological systems (SES) framework. The analysis reveals that the existing body of research is overwhelmingly focused on marine wildlife tourism activities, including shark diving, dolphin swim tourism, whale watching, and whale shark tourism. These activities are widely promoted for their economic value and their role in raising awareness for marine conservation; however, the reviewed literature also documents associated ecological risks. In particular, organized tourism activities that alter marine wildlife behavioral patterns tend to proliferate in contexts characterized by weak regulatory regimes.

These findings underscore the need for robust state- and policy-level frameworks, including co-management arrangements for MPAs, effective enforcement mechanisms, and accountability structures supported by transparent financial benefit-sharing. Such measures are essential to ensure

that tourism activities remain within ecological limits while maintaining stakeholder support. Evidence from community-focused research further indicates that although tourism activities generate employment opportunities, they often result in uneven benefit distribution, exacerbating socio-economic inequalities and, in some cases, provoking resistance to conservation initiatives. Addressing these challenges requires enhanced community engagement, equitable benefit-sharing mechanisms, support for community-managed tourism enterprises, prioritization of local employment and training, and the incorporation of traditional ecological knowledge (TEK) into tourism planning and management processes.

An important emerging trend within the reviewed literature relates to citizen science and educational tourism, which demonstrates growing potential to contribute to ecological knowledge production and conservation management. Although these initiatives remain limited in both geographic scope and number, they suggest that tourism can function as a proactive component of adaptive management rather than merely as an extractive economic activity. This potential may be further strengthened through the integration of citizen science into tourism experiences, the development of conservation- and education-oriented tourism products, and the use of MPAs as living laboratories for research and environmental education aimed at influencing behavioral change through tourism.

The review also highlights fundamental inequalities in knowledge production, particularly in terms of institutional affiliation and geographic focus. The majority of studies are concentrated in South Africa, both with respect to research locations and author affiliations. Contributions from East African island states are comparatively limited, and no studies were identified from West or Central Sub-Saharan Africa. While these patterns largely reflect disparities in research infrastructure and funding, they significantly constrain the generalisability of the findings across the broader Sub-Saharan African context. Nevertheless, no systematic bias was identified in the review process itself. To address these inequities, future research should expand beyond South Africa, incorporate inter- and transdisciplinary approaches, and support long-term monitoring programs to inform tourism and conservation policy across the region.

Taken collectively, the findings suggest that the future of CMT as a sustainable practice within MPAs depends not merely on the expansion of tourism activities, but on the alignment of ecological limits, participatory governance structures, and equitable benefit-sharing mechanisms. Achieving this requires the adoption of low-impact and sustainable tourism models, including regulated visitor numbers, clear guidelines for wildlife interactions, and comprehensive environmental monitoring at the conservation level. Ultimately, the sustainability of CMT within MPAs in Sub-Saharan Africa will be determined by the extent to which tourism development is embedded within inclusive, adaptive governance frameworks that are responsive to socio-ecological feedbacks and supported by an expanded and regionally representative research agenda. This necessitates a shift beyond the commercialization of wildlife-based tourism toward more integrative and conservation-oriented models.

REFERENCES

- Brett, M. R. (2019). An assessment of coastal tourism amenities for the South Coast region, KwaZulu-Natal, South Africa. *African Journal of Hospitality, Tourism and Leisure*, 8(3), 1-38. https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_24_vol_8_3_2019.pdf
- Dicken, M., Towner, A., Mauz, B., & Mauz, R. (2025). Assessing the socio-economic value of shark diving in the Protea Banks Marine Protected Area, South Africa. *African Journal of Marine Science*, 47(1), 19–29. <https://doi.org/10.2989/1814232X.2024.2446308>
- Dramba, T., Popa, A.-E., Porocho, M., Bacoanu, G., Esanu, I. M., Popa, E., & Porocho, V. (2025). Palliative care in chronic heart failure: A systematic review of its impact on symptoms, Quality of life, and decision-making process. *Diseases*, 13(12), 389. <https://doi.org/10.3390/diseases13120389>
- du Preez, M., & du Plessis, E. (2024). Who is visiting South African beaches and why? *African Journal of Hospitality, Tourism and Leisure*, 13(1), 1–9. https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_1_13_1_1-9.pdf
- Geldenhuys, L., Van der Merwe, P., & Saayman, M. (2019). Determining the market for marine wildlife tourism in South Africa. *African Journal of Hospitality, Tourism and Leisure*, 8(4), 1–18. https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_24_vol_8_4_2019_nwu.pdf
- Gounden, R., Munien, S., Gounden, D. & Perry, N.S. (2020). Visitor profiles of coastal and marine tourism sites in the Eastern Cape, South Africa. *African Journal of Hospitality, Tourism and Leisure*, 9(6), 1060–1075. https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_11_9_6_1060-1075.pdf
- Haskell, P. J., McGowan, A., Westling, A., Méndez-Jiménez, A., Rohner, C. A., & Collins, K. M. (2015). Monitoring the effects of tourism on whale shark *Rhincodon typus* behaviour in Mozambique. *Oryx*, 49(3), 492–499. <https://doi.org/10.1017/S0030605313001257>
- Hugé, J., Munga, C., Dahdouh-Guebas, F., & Koedam, N. (2018). Exploring coastal development scenarios for Zanzibar: A local microcosm-inspired Delphi survey. *Ocean & Coastal Management*, 158, 83–92. <https://doi.org/10.1016/j.ocecoaman.2018.03.005>
- Johnson, I. (2012). Citizen revolution in Tunisia and regional contagion: Lessons for Sub-Saharan Africa. *Journal of Sustainable Development in Africa*, 14(7), 26–41. <https://jsd-africa.com/Jsda/Vol14N7Winter2012A/PDF/Citizen%20Revolution%20in%20Tunisia.Idowu%20Adetayo%20Johnson.pdf>
- Kelly, R. P., Fleming, A., Pecl, G. T., von Gönner, J., & Bonn, A. (2020). Citizen science and marine conservation: A global review. *Phil. Trans. R. Soc*, 15(10), 375. <https://doi.org/10.1098/rstb.2019.0461>
- Kirkman, S., Kowalski, P., Mann, B., Branch, G., van der Bank, M., Sink, K., & Petersen, S. (2023). The road towards effective governance and management of marine protected areas in South Africa: evolving policies, paradigms and processes. *African Journal of Marine Science*, 45(2), 63–86. <https://doi.org/10.2989/1814232X.2023.2203186>

- Kruger, M., Van der Merwe, P., & Saayman, M. (2018). A whale of a time! An experience-based typology of visitors to a South African whale-watching festival. *Journal of Outdoor Recreation and Tourism*, 24, 35–44. <https://doi.org/10.1016/j.jort.2018.10.005>
- Lucrezi, S. (2024). Assessing tourists' perceptions to support the sustainable development of swim-with-dolphin tourism. *Journal of Ecotourism*, 23(4), 703–721. <https://doi.org/10.1080/14724049.2024.2307368>
- Lucrezi, S., & D'Agnessa, A. (2025). Tourists' behavioural intention to participate in marine citizen science: A South African case study. *Journal of Ecotourism*, 24(3), 237–266. <https://doi.org/10.1080/14724049.2024.2390440>
- Lucrezi, S. (2024). Impacts of participation in scientific activities on marine tourists' engagement and individual learning outcomes. *Tourism in Marine Environments*, 19, 77–94. <https://doi.org/10.3727/216901924X17200766329319>
- Mabaleka, N., Ntloko, N., & Swart, K. (2020). Profiles of tourists participating in shark cage diving in Gansbaai, South Africa. *The Journal for Transdisciplinary Research in Southern Africa*, 16, 264–270. <https://doi.org/10.4102/td.v16i1.772>
- March, A., Bennett, M., Germishuizen, M., Evans, T., & Failler, P. (2024). The status of Blue Economy development in Africa. *Marine Policy*, 165, 106205. <https://doi.org/10.1016/j.marpol.2024.106205>
- Mgadle, A., Dube, K., Lekaota, L. (2022). Conservation and sustainability of coastal city tourism in the advent of sea level rise in Durban, South Africa. *Tourism in Marine Environments*, 17, 179–196. <https://doi.org/10.3727/154427322X16599399156575>
- Olearnik, J., & Barwicka, K. (2019). Chumbe Island Coral Park (Tanzania) as a model of an exemplary ecotourism enterprise. *Journal of Ecotourism*, 19(4), 373–387. <https://doi.org/10.1080/14724049.2019.1700511>
- Palomo, L. E., & Hernández-Flores, A. (2019). Application of the Ostrom framework in the analysis of a social-ecological system with multiple resources in a marine protected area. *PeerJ*, 7, e7374. <https://doi.org/10.7717/peerj.7374>
- Partelow, S. (2024). A meta-analysis of social-ecological systems framework case studies: Identifying solutions and frontiers. *People and Nature*, 6(1), 1229–1247. <https://doi.org/10.1002/pan3.10630>
- Rocha, D., Drakeford, B., Marley, S. A., Potts, J., Hale, M., & Gullan, A. (2020). Moving towards a sustainable cetacean-based tourism industry – A case study from Mozambique. *Marine Policy*, 130(27), Article 104048. <https://doi.org/10.1016/j.marpol.2020.104048>
- Refulio-Coronado, S., Lacasse, K., Dalton, T., Humphries, A., Basu, S., Uchida, H., & Uchida, E. (2021). Coastal and marine socio-ecological systems: A systematic review of the literature. *Frontiers in Marine Science*, 8, 648006. <https://doi.org/10.3389/fmars.2021.648006>
- Rocha, D., Marley, S. A., Drakeford, B., Potts, J., & Gullan, A. (2023). Effects of dolphin-swim activities on the behaviour of an Indo-Pacific bottlenose dolphin population off the south coast of Mozambique. *Biological Conservation*, 279, Article 109949. <https://doi.org/10.1016/j.biocon.2023.109949>

- Rogerson, C., & Rogerson, J. (2019). Emergent planning for South Africa's blue economy: Evidence from coastal and marine tourism. *Urbani izziv*. 30, 24–36. <https://doi.org/10.5379/urbani-izziv-en-2019-30-supplement-002>
- Sowman, M., & Sunde, J., (2018). Social impacts of marine protected areas in South Africa on coastal fishing. *Ocean and Coastal Management*, 157, 168–179. <https://doi.org/10.1016/j.ocecoaman.2018.02.013>
- Temple, A. J., Tregenza, N., Amir, O. A., Jiddawi, N., & Berggren, P. (2016). Spatial and Temporal Variations in the Occurrence and Foraging Activity of Coastal Dolphins in Menai Bay, Zanzibar, Tanzania. *PloS one*, 11(3), e0148995. <https://doi.org/10.1371/journal.pone.0148995>
- Timothy, V. L., & Said, S. K., (2023). Perception of residents on the impacts of beach tourism: The case of Nungwi village in Zanzibar, Tanzania. *Heliyon*, 9, e21816 <https://doi.org/10.1016/j.heliyon.2023.e21816>
- Ziegler, J., Diamant, S., Pierce, S., Bennett, R., & Kiszka, J. (2021). Economic value and public perceptions of whale shark tourism in Nosy Be, Madagascar. *Tourism in Marine Environments*, 16, 167–182. <https://doi.org/10.3727/154427321X16223819324721>

Ez a mű a Creative Commons Nevezd meg! – Ne add el! – Ne változtasd! 4.0 nemzetközi licence-feltételeinek megfelelően felhasználható. (CC BY-NC-ND 4.0)
<https://creativecommons.org/licenses/by-nc-nd/4.0/>

This open access article may be used under the international license terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 (CC BY-NC-ND 4.0)
<https://creativecommons.org/licenses/by-nc-nd/4.0/>

