

Environmental and Socio-Economic Impact Assessment of Tourism Operations in Tanga District Tanzania

Charles Michael¹ and Ladislaus Batinoluho²

¹Tanzania Forest Services (TFS)

²

The Open University of Tanzania; Email: darksky.tanzania@gmail.com

Corresponding email: darksky.tanzania@gmail.com

Abstract

There is limited understanding of the impact of environmental and socio-economic aspects along beaches in Tanzania especially in Tanga District. The coastal beaches of Tanga District are experiencing an increase in tourism activities, which has generated both environmental challenges and socio-economic opportunities. Through mixed research methods, this paper revealed that, the primary tourism activities along the beaches of Tanga District are accommodation operations, snorkeling and scuba diving, sport fishing, boat trips, paddle boarding, beach camping, cultural beach walks, windsurfing, and swimming. These activities contribute to employment creation and revenue generation but also pose environmental risks, including increased solid waste, marine ecosystem disturbances, coral reef degradation, marine pollution, coastal erosion, and degradation of mangrove ecosystems. Social consequences experienced include cultural shifts, land-use conflicts, marginalization of local communities, increased risk of social vices, pressure on local culture and lifestyle, displacement and loss of land, seasonal income instability, and rising living costs. Although stakeholders recognized both positive and negative outcomes, few key strategies such as regular beach clean-ups, environmental education, coral reef protection, improved waste management and pollution control, and stronger community participation were identified as essential, yet their implementation remains not effective. The study concludes that sustainable beach tourism in Tanga District beaches require stronger community participation, improved waste and ecosystem management, including planning processes, and wider adoption of ecotourism practices.

Keywords: *Tourism operations, Socio-economic impacts; Coastal environment; Sustainability; Tanga District, Tanzania.*

1.0 INTRODUCTION

Tourism is among the fastest-growing economic sectors, contributing to over 10% of the world Gross Domestic Product (GDP) and generating employment and income opportunities in many developing nations (United Nations World Tourism Organization [UNWTO], 2022). Coastal and beach destinations remain the most visited tourist sites, accounting for nearly 80% of all global tourist activities (United Nations Environment Programme [UNEP], 2021). While tourism enhances economic growth, it simultaneously creates problems including solid waste generation, pollution, ecosystem degradation and sociocultural transformations (Baloch et al., 2023). Recognizing these dual impacts of tourism, international bodies including the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), and the United Nations World Tourism Organization (UNWTO) have emphasized the integration of Environmental and Social Impact Assessments (ESIA) into tourism development frameworks to balance growth with sustainability.

Across Africa, coastal tourism contributes substantially to national Gross Domestic Product (GDP), yet it is increasingly linked to environmental pressures and social disruption. Countries such as South Africa, Kenya, Egypt, and Morocco have established Environmental and Social Impact Assessment (ESIA) systems for tourism-related developments; however, enforcement remains inconsistent due to institutional weaknesses and economic constraints (African Ministerial Conference on the Environment (AMCEN), 2022). In East Africa, coastal destinations along the Western Indian Ocean particularly Kenya, Tanzania, and Mozambique are recognized as biodiversity-rich areas and cultural heritage hotspots. Nevertheless, existing research indicates that ESIA practices in the region often prioritize short-term environmental concerns while overlooking long-term ecological and social implications (Chirikure et al., 2024). Furthermore, limited community participation, inadequate baseline data, and weak monitoring mechanisms are continuing hindering effective ESIA implementation (Western Indian Ocean Marine Science Association (WIOMSA), 2023).

Less is known about the impact of environmental and socioeconomic aspects resulting from tourism operations on the beaches in Tanga district in Tanzania. Majority of scholars have attempted to study the impact of environmental and socioeconomic aspects resulting from tourism operations on the beaches across the world (Khan, 2017; Krelling et al. 2017; Enríquez and Bestard, 2020; *Garcés-Ordóñez et al.* 2020). Khan

(2017) examined the impacts of tourism activities on the environment and sustainability of Pattaya beach in Thailand. The study's findings demonstrated that Pattaya Beach in Thailand is affected by tourism. The beneficial effects of tourism raise the socioeconomic standing of the local populace and the nation. Enríquez and Bestard (2020) measured the economic impact of climate-induced environmental changes on sun-and-beach tourism. The study's findings demonstrate tourists' favorable readiness to pay to lessen the effects of climate change and offer proof of choice heterogeneity across people with various travel and socioeconomic characteristics. Additionally, the effect of tourism on marine trash pollution on Santa Marta beaches in the Caribbean region of Colombia was investigated by Garcés-Ordóñez (2020). The study found that plastics are the most prevalent sort of litter, and that tourism is a major source of litter. The study also found that all beaches were impacted by tourism, causing litter pollution. Krelling et al. (2017) explored the differences in perception and reaction of tourist groups to beach marine debris that can influence loss of tourism revenue in coastal areas. In the worst-case situation, it was shown that over 85% of beachgoers would avoid going to the beach, and the majority would go to a nearby state beach. Additionally, it was discovered that stranded litter might potentially cut local tourism revenue by 39.1%.

There is limited literature on the environmental and socioeconomic impact resulting from tourism activities. Mushi and Kangalawe (2020) studied the climate change impacts on coastal resources used as tourist attractions and the vulnerability of coastal tourism in Bagamoyo District. Kinyondo and Pelizzo (2020) researched the socioeconomic impact of tourism in Tanzania. According to their research, there is a trade-off between the economic benefits and the environmental issues that a flourishing tourism industry could cause, even though it could be more successful and draw more visitors. On the other hand, Lange (2015) studied tourism in Zanzibar with an emphasis on the incentives for managing the coastal environment sustainably. According to the report, coastal communities are under a lot of strain due to the quick development of tourism infrastructure along the coast and a population growth rate of more than 3%. Additionally, Lange (2015) demonstrates that while comparatively little of the economic benefits from tourism have gone to local populations, access to the beach and sea has been severely restricted in some local settlements, leading to a loss of livelihoods. The researcher also found that both natural and human factors significantly deteriorate the marine and coastal environments.

Despite the existing literature, not much has been done to evaluate how tourism activities affect the socioeconomic and environmental elements of Tanzanian beaches, particularly in the Tanga district. This gap highlights a pressing problem: as tourism expands, striking a balance between economic benefits, environmental preservation, and community well-being becomes increasingly difficult (Nyaupane et al., 2018). Without robust impact assessments, stakeholders lack the evidence base to design effective management strategies, leaving fragile coastal ecosystems and community livelihoods vulnerable to unchecked tourism growth (International Council on Monuments and Sites (ICOMOS), 2022). This study addresses the research gap by conducting a comprehensive environmental and socioeconomic impact assessment of tourism operations along the beaches of Tanga District. Specifically, it examines the types of tourism activities taking place, evaluates the social and environmental consequences, explores stakeholder perceptions, and assesses the effectiveness of current management practices. By doing so, this study aims to provide evidence-based recommendations to support sustainable coastal tourism development in Tanzania.

2.0 THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Theoretical Framework

Theories provide a critical lens for analyzing how tourism operations influence both the environment and society. This study is anchored on two major theories; Social Exchange Theory (SET) and Sustainable Tourism Theory. The SET was developed by Ap (1992) and suggests that residents' support for tourism depends on the perceived balance between the benefits and costs associated with tourism activities. Communities tend to support tourism when there are economic gains and benefits such as employment, income, and improved infrastructure. Conversely, opposition often arises when negative impacts such as cultural disruption, overcrowding, and environmental degradation outweigh perceived benefits. In the context of Tanga District, where beach tourism is rapidly growing, this theory is particularly relevant for understanding community perceptions and attitudes toward tourism development.

In contrast, the Sustainable Tourism Theory highlights how tourism must satisfy present demands without jeopardizing the capacity of future generations to satisfy their own (World Commission on Environment and Development [WCED], 1987; Hunter, 1995). It promotes striking a balance between cultural preservation, environmental preservation, and economic progress. In coastal regions like Tanga District, where delicate ecosystems like mangroves and coral reefs coexist with growing tourism

demands, this hypothesis is crucial. It emphasizes how crucial community involvement, conservation efforts, and responsible planning are to the long-term viability of beach tourism. These theories work together to direct this study's evaluation of the potential and difficulties that Tanga's tourism industry presents to the environment and residents.

2.2 Conceptual Framework

The conceptual model for this study integrates insights from SET and Sustainable Tourism Theory to examine the impacts of tourism operations in Tanga District. In this framework, tourism operations including beach hotels, fishing tours, swimming, and other recreational activities serve as the independent variables. These activities interact with mediating factors such as stakeholder perceptions, management strategies, and the enforcement of tourism and environmental policies. The outcomes of these interactions are the dependent variables, which include both environmental impacts (pollution, waste accumulation, habitat disturbance, and biodiversity loss) and socioeconomic impacts (employment creation, income generation, cultural change, and conflicts over resource use). The model emphasizes that the extent and direction of tourism impacts depend not only on the scale of tourism activities but also on the effectiveness of governance structures and management practices. Figure 1 presents a theoretical model, which emphasizes the importance of evaluating tourist operations using a comprehensive methodology that concurrently considers social, economic, and environmental factors. This study offers a comprehensive framework on how Tanga District tourism may be made more sustainable through better administration, increased community involvement, and enforcement of policies.

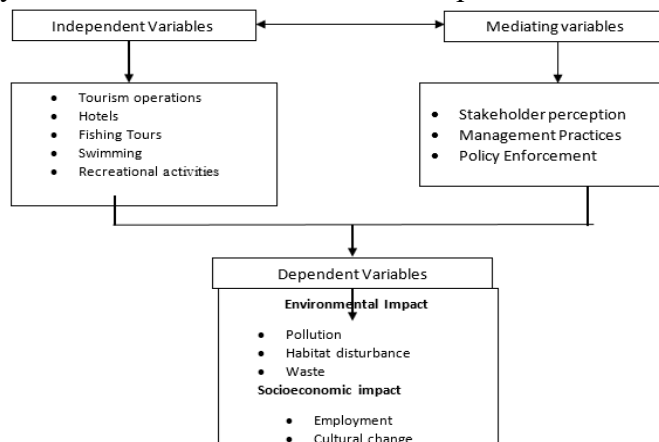


Figure 1: *Conceptual framework for the study*

Source: Researcher constructs, 2025

2.3 Empirical Research Gap

Globally, several studies have shown that coastal tourism contributes significantly to environmental stress. Gössling (2002) identified that beach tourism leads to biodiversity loss, pollution, and the overuse of natural resources. Similarly, Davenport and Davenport (2006) found that unsustainable coastal tourism practices contribute to shoreline erosion, coral reef degradation, and poor waste management. More recent research by Seraphin, Sheeran, and Pilato (2018) highlights the problem of over-tourism, which causes overcrowding, freshwater shortages, and declining tourist satisfaction in many popular coastal destinations. These global findings underline the importance of implementing sustainable practices in emerging destinations such as Tanga District.

Regionally within Africa, coastal tourism has emerged as a key economic driver but has also generated ecological and cultural challenges. Mbaiwa (2015), studying Botswana's tourism sector, noted that while tourism created jobs and stimulated local economies, it also resulted in cultural commodification and environmental degradation. Akama and Kieti (2017), focusing on Mombasa, Kenya, found that coastal communities benefited from employment in hotels and tour operations, yet tourism activities caused negative impacts such as beach encroachment, poor waste management, and declining fish stocks linked to recreational demand. These findings show a clear trade-off between the economic benefits and environmental costs of coastal tourism.

In Tanzania, most of the existing literature focuses on Zanzibar. Anderson (2013) documented that tourism created substantial income-generating opportunities but also contributed to beach pollution, habitat disturbance, and conflicts over land use. Muhanna (2017) noted that poor waste management and unregulated coastal development continue to threaten the sustainability of Zanzibar's tourism sector. Similarly, Gössling and Schulz (2015) highlighted that while Zanzibar's tourism increased foreign exchange earnings, it also generated excessive demand for freshwater, deforestation for hotel development, and growing inequality between residents and investors. Mohammed (2016) further pointed out that weak institutional enforcement exacerbates these challenges, leaving many communities vulnerable to negative impacts. Despite this body of knowledge, literature on Tanga District is still scarce. Tanga's beaches, including Pangani, Ushongo, and Saadani, are emerging destinations attracting both domestic and international tourists. However, empirical studies documenting the environmental and social impacts in this region are limited. In 2020, anecdotal reports from the Ministry of Natural

Resources and Tourism [MNRT] suggest persistent challenges such as beach littering, sand mining, overfishing driven by tourist demand, and limited community involvement in tourism decision-making processes (MNRT, 2020). This indicates a clear research gap, as the growing tourism industry in Tanga has not been adequately studied in terms of its environmental, social, and economic consequences.

3.0 MATERIALS AND METHODS

This study employed a mixed-methods and cross-sectional design, integrating Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) principles to examine tourism impacts along the Tanga coastline. Six beach sites were selected through stratified purposive sampling to represent varying tourism intensities. A sample size of 200 respondents was used, comprising 120 household surveys, 35 key informant interviews, and 45 participants in focus group discussions. Additional data were gathered through field observations, transects, quadrats, photography, and participatory mapping. Secondary information was obtained from policy documents, environmental reports, and academic literature.

Quantitative data were coded and analyzed using SPSS to generate descriptive statistics and comparative assessments, while environmental measurements were summarized using observational rankings. Qualitative data from interviews and FGDs were analyzed thematically using NVivo to capture community perceptions, governance challenges, and environmental concerns. Participatory maps were digitized to illustrate sensitive and degraded areas. Combining these approaches enhanced the validity, reliability, and depth of the study, providing a comprehensive understanding of the socioeconomic and environmental effects of tourism operations in Tanga District.

To contextualize the field findings, Tanga City Council reports, National Environmental Management Council (NEMC) recommendations, tourism arrival statistics, and land-use plans were reviewed alongside relevant EIA guidelines and marine conservation strategies to frame the policy environment. Quantitative survey data were coded and analyzed using descriptive statistics, with tables and charts illustrating environmental indicators across the three beach categories. Qualitative data from observations and interviews were examined through thematic content analysis, using iterative coding to identify patterns in perceived impacts, governance challenges, community participation, and tourism practices, with themes triangulated across respondent groups to enhance analytical

rigor. Ethical standards including informed consent, confidentiality, voluntary participation, and respectful engagement with local beach communities were strictly observed, and all necessary approvals were obtained from tourism authorities and local government before data collection.

4.0 RESULTS

4.1 Demographic Characteristics of the Respondents

The demographic profile of the respondents is provided in this section. Knowing these features is crucial because they give background information about the sample and aid in interpreting the findings considering the socioeconomic and personal characteristics of the respondents. The demographic variables considered include sex, education level, occupation, and duration of residence in the study area.

4.2 Gender of the Respondents

The findings in Figure 2 shows that majority of the respondents were males (56.4%) while female were 43.6%. These results indicate that men were slightly more represented in the study sample than women.

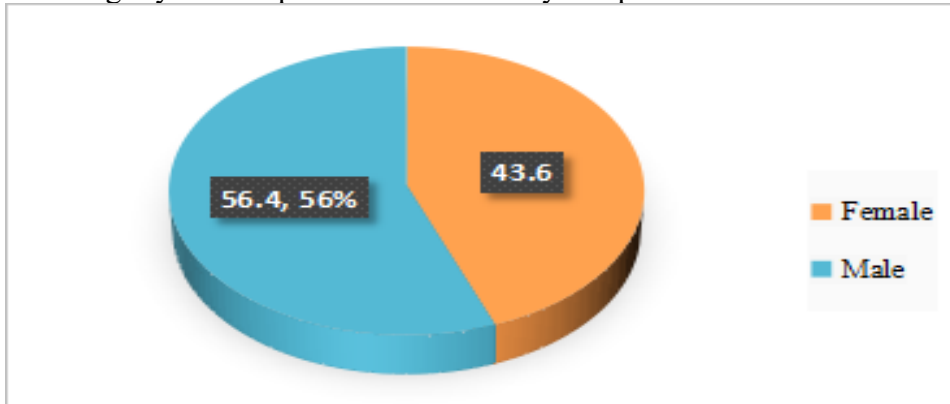


Figure 2: Distribution of respondents by gender

4.3 Education Level of the Respondents

Figure 3 shows that, majority of the respondents had attained secondary education and college/university level (33.8% each), followed by primary education (22.5%). A smaller proportion had informal education (7.5%) and other forms of education (10.4%). This indicates that most respondents were fairly educated, with a strong representation of secondary and higher learning levels.

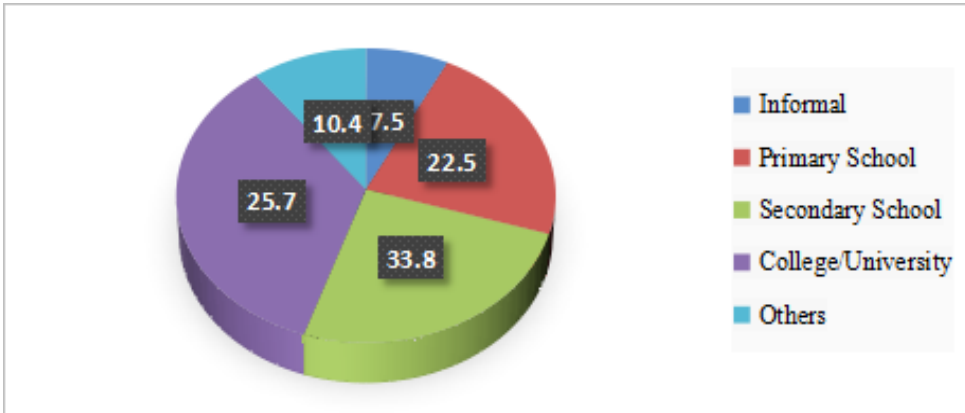


Figure 3: Distribution of respondents by education level

4.4 Respondents by Occupation

Figure 4 indicates that the largest proportion of respondents were engaged in business activities (25.6%), followed closely by fishermen (24.1%). Farmers accounted for 20.3% of the respondents, while tourism operators represented 16.9%. The smallest group fell under the “Others” category, making up 13.1% of the respondents. This distribution shows that the study area has a diverse economic base, with business and fishing being the dominant sources of livelihood among participants.

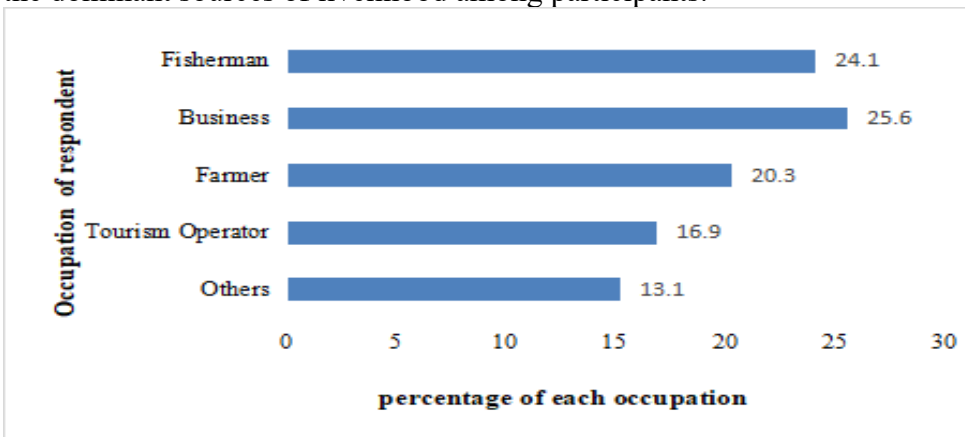


Figure 4: Respondents by Occupation

4.5 Respondents by Duration of Residence

Figure 5 indicate indicates that most of the respondents had lived in the area for 6–10 years (25.5%), followed by 11–15 years (22.2%). A smaller proportion reported residence duration of 0–5 years (19.3%), 16–20 years (17.3%), and over 21 years (15.7%). This shows that most respondents had medium-term settlement experience in the study area.

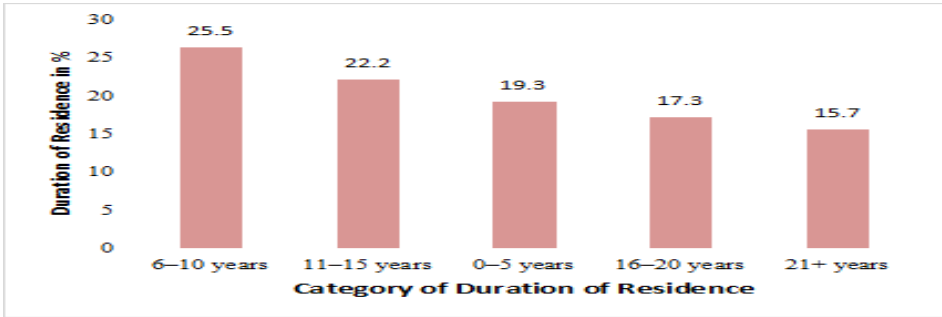


Figure 5: Respondents by Duration of Residence

4.6 Tourism Operations Taking Place Along the Beaches in Tanga District and the Associated Environmental and Social Effects

This part of the study presents the primary tourism activities taking place along the beaches in Tanga District and examines their observable environmental and social effects. Specifically, it highlights the main operations currently conducted, followed by environmental and social impacts analysis on local communities.

4.6.1 Primary tourism operations currently taking place along the beaches in Tanga District

Figure 6 shows that the most common tourism operations along Tanga’s beaches are swimming (20.4%) and beach hotels (18.6%), followed by Resort (15.2%). Fishing tours account for 12.7%, while cultural tourism and boat tours make up 9.4% and 9.3%, respectively. Snorkeling or diving contributes 9% of activities. A small portion (2.8%) involves other activities like beach games and nature walks. These results highlight a variety of beach-related tourism activities, with a strong focus on water-based recreation and accommodation services.

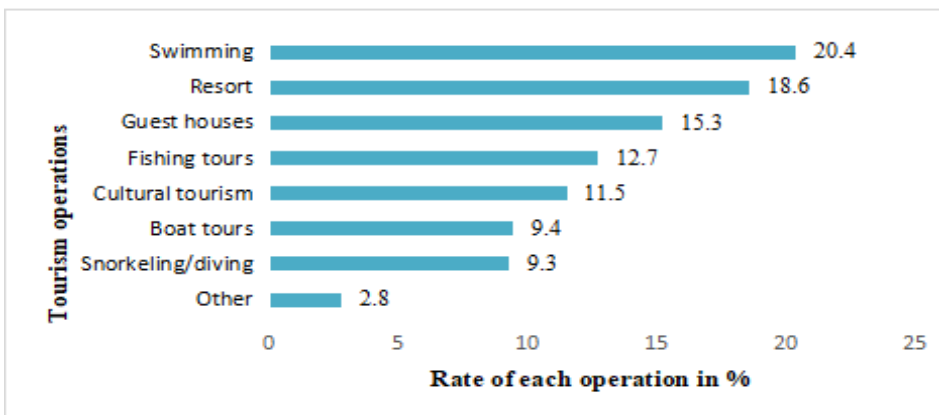


Figure 6: Primary tourism operations currently taking place along the beaches in Tanga District

4.6.2 Environmental effects of tourism activities along the beaches in Tanga District

Figure 7 presents the most prevalent environmental effects caused by tourism activities along the beaches of Tanga District which are mangrove destruction and disturbance of marine life, each accounting for 21.3% and 21.2% respectively. These findings were followed by coastal erosion (16.6%) and water pollution (17.3%). Increased waste (litter) was reported by 10.4 % of respondents, while noise pollution accounts for 9.1%. A small proportion of respondents (4.1%) indicated that there were no environmental effects caused by tourism activities.

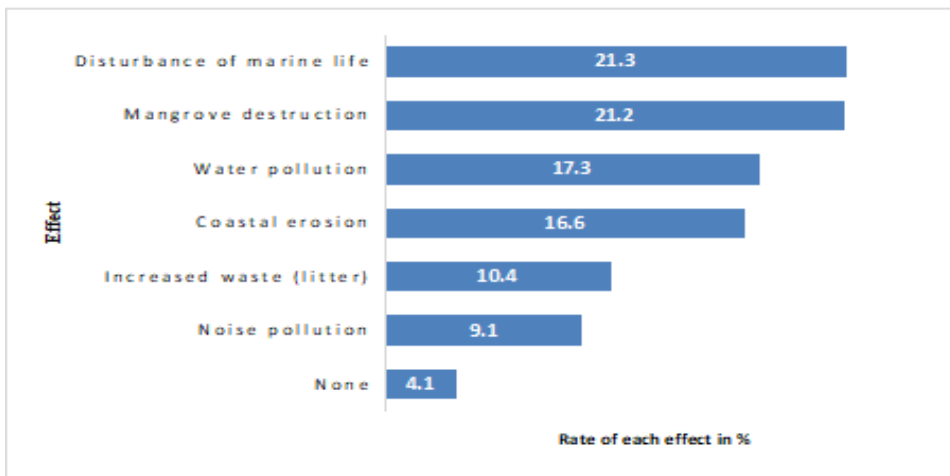


Figure 7: Environmental effects of tourism activities along the beaches in Tanga District

4.7 Social Effects of Tourism Activities along the Beach in Tanga District

Figure 8 show that, the most significant social effect of tourism activities along Tanga's beaches is the creation of employment opportunities, reported by 24.3% of the respondents. This is followed by income generation at 20.5%, and migration or influx of people at 13.3%. Cultural changes account for 13.2% of the responses, while land conflicts and increased cost of living represent 10.5% and 10.1%, respectively. A smaller percentage (7.1%) indicated other social issues such as crime increase or overcrowding. These findings highlight that while tourism contributes positively to local livelihoods through jobs and income, it also brings about socio-cultural and economic pressures on the local communities.

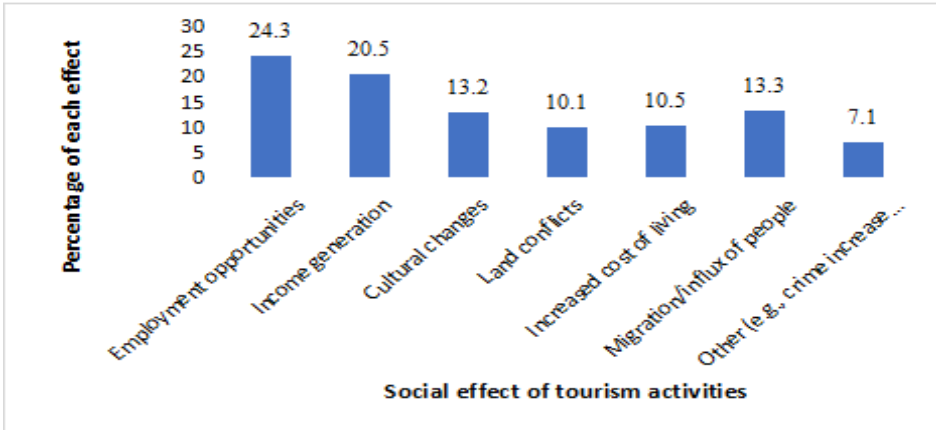


Figure 8: Social effects of tourism activities along the beaches in Tanga District

4.8 Local stakeholders' perceptions and awareness regarding tourism's environmental and social impacts along the beaches in Tanga District

Figure 9 shows that the most recognized benefit of tourism by local stakeholders is job creation, with 28.3% of the respondents acknowledging that tourism creates employment opportunities for local people. This is followed by concerns over increased waste and pollution (22.4%) and improvements in local roads and services (18.2%). Additionally, 13.1% of stakeholders noted the loss of traditional culture because of tourism development. Other concerns include overcrowding and land conflicts (9.4%) and the negative impact on marine life and coastal areas (8.6%). These results suggest that while local stakeholders appreciate the economic contributions of tourism, they are also aware of its environmental and cultural drawbacks.

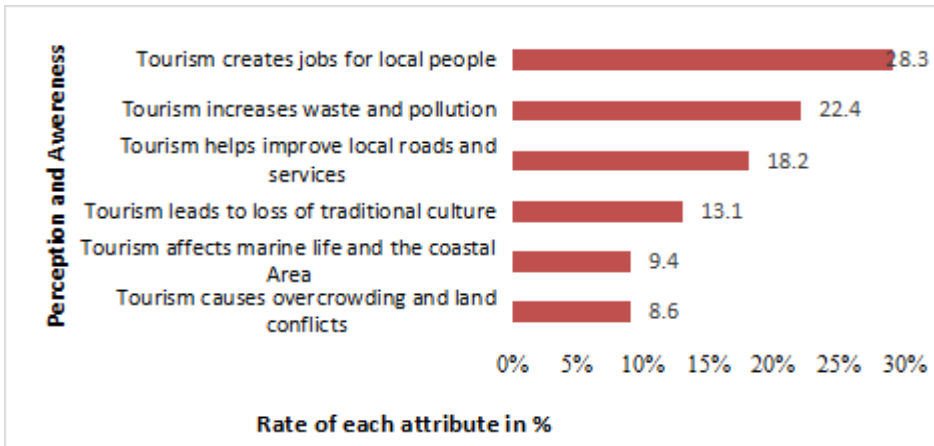


Figure 9: Perceptions and awareness regarding tourism's environmental and social impacts along the beaches in Tanga District

4.9 Environmental and social management practices employed by tourism operators and local authorities in Tanga District

Figure 10 shows that the most common environmental and social management practice implemented by tourism operators and local authorities is regular beach cleaning and waste collection as indicated by 25.1% of the respondents. More findings from most of the respondents show that the involvement of local communities in tourism management activities (16.3%) and environmental education programs aimed at both tourists and locals (21.2%). Restricted access to vulnerable beach areas scored 14%, while the usage of environmentally friendly infrastructure, such as solar energy and adequate sanitary facilities, accounts for 14.6%. Lastly, the adoption of ecotourism practices represents 8.5% of the responses.

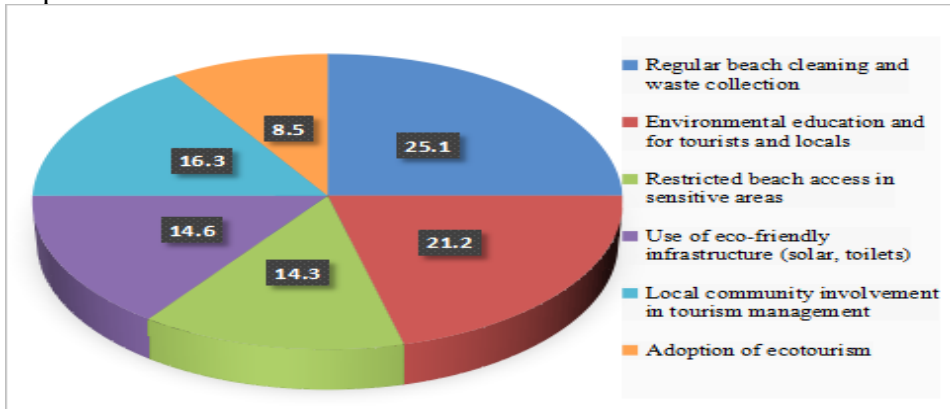


Figure 10: Management practices employed by tourism operators and local authorities

5.0 DISCUSSION

5.1 Primary Tourism Operations Taking Place Tanga District

The findings reveal that tourism activities along the beaches of Tanga District are primarily centered around swimming (20.4%) and accommodation services, notably resorts (18.6%) and guest houses (15.3%). These results align with coastal tourism patterns observed in other regions of Tanzania, such as Zanzibar and Bagamoyo, where beach-related recreation and accommodation dominate tourist preferences (Anderson et al., 2019). The notable presence of fishing tours (12.7%) and cultural tourism (11.5%) underscores an emerging interest in experiential and nature-based tourism. However, the relatively low engagement in activities like snorkeling and diving (9.3%) and boat tours (9.4%) suggests either limited marine tourism infrastructure or under promotion of marine biodiversity assets. The diversity of activities points to a moderate level of tourism development, but with significant potential

for sustainable expansion, especially in underutilized sectors like ecotourism and underwater recreation.

5.2 Environmental Effects of Tourism Activities along the Beach in Tanga

The most pressing environmental effects associated with tourism activities along the beaches of Tanga are mangrove destruction and disturbance of marine life, each cited by 21.3% of respondents. These findings highlight the increasing pressure on coastal ecosystems, particularly on habitats vital for biodiversity and fish breeding. The equal proportions reported for coastal erosion and water pollution (17.3%) further demonstrate the vulnerability of shorelines to unsustainable development, runoff from tourist facilities, and inadequate waste management systems. Increased waste or littering, although lower in frequency at 10%, remains a visible environmental concern that negatively affects aesthetic value and marine health. Additionally, noise pollution reported by 9.1% of respondents can disrupt both human well-being and animal behavior, especially in zones close to hotels, resorts, and entertainment areas. Only a small portion (4.1%) of participants believed tourism had no environmental impact, reinforcing the wide perception of ecological disturbance linked to tourism.

These results align with previous studies, such as those by Ghebremariam et al. (2020), who emphasized the cumulative impacts of unregulated tourism on Tanzania's coastal environments. The destruction of mangroves and marine habitats threatens not only biodiversity but also the livelihoods of coastal communities that depend on healthy ecosystems for fishing, climate regulation, and natural protection from storms. This calls for the implementation of integrated coastal zone management strategies and stricter enforcement of environmental policies to ensure that tourism development is aligned with conservation goals. Despite these ongoing environmental concerns, there are continuing efforts in place by the government, local communities, and conservation groups to protect these critical areas due to their immense importance to the surrounding society.

5.3 Social Effect of Tourism Activities along the Beach in Tanga District

Tourism's socio-economic impacts in Tanga District are mixed. On one hand, the sector contributes positively through employment creation (24.3%) and income generation (20.5%), which is consistent with the broader literature on tourism's role in rural livelihoods (UNWTO, 2022).

On the other hand, negative social outcomes are also evident. Migration and the influx of outsiders (13.3%) introduce new social dynamics, while cultural change (13.3%) suggests potential erosion of traditional practices. Land conflicts (11.1%) and rising costs of living (10.5%) reflect increased competition for space and resources, often associated with tourism-induced gentrification. These findings mirror observations in other coastal regions like Pangani and Mafia Island, where the rapid expansion of tourism has triggered similar tensions (Kombe & Kreibich, 2011). Therefore, while tourism brings economic gains, the need to safeguard cultural heritage and ensure equitable resource access remains paramount.

5.4 Stakeholder Perceptions of Tourism's Environmental and Social Impacts in Beach Areas

Local stakeholders in Tanga District demonstrate a balanced understanding of tourism's benefits and drawbacks. A significant proportion (28.3%) recognized employment creation as a key benefit, affirming the sector's economic importance. Additionally, 18.2% cited improvements in roads and services, indicating that tourism contribute indirectly to local development. However, 22.4% expressed concern over increased pollution, and 13.1% pointed to cultural loss issues. These results reveal the truth of other scholars including (Salazar, 2012). Who's frequently highlighted the that although the tourism has several important remaining with some prone to some areas, include overcrowding, land disputes, and threats to marine life. These findings reveal a nuanced perception among residents and tourism actors: they value the economic opportunities but are also aware of the associated environmental and socio-cultural risks. This dual awareness is crucial for shaping inclusive and sustainable tourism policies, as it reflects a readiness to engage in participatory tourism governance models.

5.5 Environmental and Social Management Practices Used by Tourism Operators and Local Authorities

The results show a commendable range of environmental and social management practices in place, led by regular beach cleaning (25.1%) and environmental education (21.2%). These practices reflect basic but important mitigation strategies for maintaining coastal aesthetics and raising awareness. Local community involvement in tourism management (16.3%) marks progress toward participatory tourism governance, echoing best practices in sustainable tourism frameworks promoted by UNEP and the Ministry of Natural Resources and Tourism. The use of eco-friendly infrastructure (14.6 %) indicates some investment in greener operations, although this percentage suggests there is still room for

broader adoption. Restricted access to sensitive areas (14.3%) and the promotion of ecotourism (8.5%) also demonstrates attempts to conserve fragile ecosystems. These efforts, while notable, would benefit from greater institutional support, technical training, and incentives to encourage wider adoption. Strengthening coordination between tourism operators, local authorities, and conservation actors will be essential to scaling up sustainable tourism management in Tanga's coastal belt.

6.0 CONCLUSION AND RECOMMENDATIONS

This study assessed the environmental and social impacts of tourism activities along the beaches of Tanga District in Tanzania. Findings revealed that tourism provides notable socioeconomic benefits, particularly through employment and income generation. Primary activities such as swimming, beach hotels, and fishing tours dominate the area. However, these activities also contribute to environmental challenges like waste accumulation, water pollution, and mangrove destruction. Social effects such as cultural change, land conflicts, and increased cost of living were also observed. Stakeholders recognized both the benefits and drawbacks of tourism, indicating a balanced awareness of its impacts. Although management practices like beach cleaning and environmental education are in place but these are not uniformly applied. There is still a need for stronger community involvement, investment in eco-friendly infrastructure, and stricter regulation of sensitive areas. Overall, while beach tourism holds great potential for local development, sustainable and inclusive strategies are essential for minimizing its negative consequences and ensuring long-term viability.

To promote sustainable tourism development and minimize the negative environmental and social impacts along the beaches of Tanga District, several measures are recommended. First, waste management systems should be strengthened through regular beach cleaning, the installation of adequate disposal facilities, and strict enforcement of anti-littering regulations to curb environmental degradation. Active community involvement in tourism planning and decision-making is essential to ensure that local voices are respected, and benefits are distributed. The use of eco-friendly infrastructure, including solar energy, sustainable sanitation systems, and green building materials, should be encouraged to reduce ecological footprints. Moreover, environmental education programs should target both tourists and residents to raise awareness on sustainable practices and marine conservation. Supporting eco-tourism initiatives will help diversify tourism products, ease pressure on mainstream activities, and promote environmental stewardship. Finally,

protecting sensitive coastal ecosystems such as mangroves and marine habitats through proper zoning regulations and restrictions on development in fragile areas is critical for safeguarding long-term sustainability.

7.0 ACKNOWLEDGEMENTS

In conducting this study, the authors would like to sincerely thank the Tanga District Council, local leaders, tourism businesses, and residents for their essential cooperation and insights. Additionally, thanks are given to the Marine Parks and Reserves Unit, the National Environment Management Council (NEMC), accommodation establishments, and other governmental and conservation organizations for their important documentation and technical assistance. The authors also express their gratitude to researchers, non-governmental organizations, and academic partners who work on sustainable tourism and coastal conservation in Tanzania. Their combined cooperation, transparency, and dedication ensured that this research was thorough and based on local circumstances.

REFERENCES

- Akama, J., & Kieti, D. (2017). *Tourism and environmental change in coastal Kenya: Community perspectives and responses*. *Journal of Sustainable Tourism*, 25(4), 536–553.
- Anderson, W. (2013). *Leakages in the tourism systems: Case of Zanzibar*. *Tourism Review*, 68(1), 62–76.
- African Ministerial Conference on the Environment (AMCEN). (2022). *Environmental governance and sustainability report*. African Union Commission.
- Ap, J. (1992). *Residents' perceptions on tourism impacts*. *Annals of Tourism Research*, 19(4), 665–690.
- Baloch, Q., Shah, S., & Khan, I. (2023). *Tourism-induced environmental degradation in coastal destinations*. *Environmental Science and Policy*, 145, 23–33.
- Chirikure, S., Manyanga, M., & Pwiti, G. (2024). Cultural heritage and coastal tourism sustainability in Eastern Africa. *Journal of Heritage Management*, 9(2), 101–117.
- Davenport, J., & Davenport, J. L. (2006). The impact of tourism and personal leisure transport on coastal environments: A review. *Estuarine, Coastal and Shelf Science*, 67(1–2), 280–292.
- Enríquez, S., & Bujosa Bestard, A. (2020). Economic impacts of climate-induced changes on sun-and-beach tourism demand. *Tourism Economics*, 26(4), 654–671.

- Garcés-Ordóñez, O., Diaz, L.F.E., Cardoso, R.P., Muniz, M.C. (2020). Tourism as a driver of marine litter on Santa Marta beaches, Colombia. *Marine Pollution Bulletin*, 150, 110–712.
- Gössling, S. (2002). Global environmental consequences of tourism. *Global Environmental Change*, 12(4), 283–302.
- Gössling, S., & Schulz, O. (2015). Tourism and marine resource use in Zanzibar. *Journal of Environmental Management*, 159, 75–83.
- Hunter, C. (1995). On the need to re-conceptualize sustainable tourism development. *Journal of Sustainable Tourism*, 3(3), 155–165.
- International Council on Monuments and Sites (ICOMOS). (2022). *Guidelines on tourism heritage impact assessments*. ICOMOS Publishing.
- Khan, A. (2017). Environmental impacts of tourism and sustainability of Pattaya Beach, Thailand. *International Journal of Tourism Sciences*, 17(2), 89–103.
- Kinyondo, A., & Pelizzo, R. (2020). Tourism, development and inequality in Tanzania. *Development Policy Review*, 38(5), 683–701.
- Krelling, A., et al. (2017). Perception of beach debris and the implications for tourism revenue. *Marine Pollution Bulletin*, 114(1), 195–203.
- Lange, G. (2015). Coastal tourism in Zanzibar: Incentives for sustainable management. *Natural Resources Forum*, 39(4), 222–235.
- Mbaiwa, J. (2015). Ecotourism development in Botswana: Impacts and policy implications. *Journal of Tourism and Cultural Change*, 13(3), 1–20.
- Mohammed, A. (2016). Institutional challenges affecting coastal tourism sustainability in Zanzibar. *Journal of Marine and Island Cultures*, 5(2), 45–56.
- Mushi, D., & Kangelawe, R. (2020). Climate change impacts on coastal tourism resources in Bagamoyo District. *Climate and Development*, 12(7), 617–628.
- Mwamwaja, M., Mwakaje, A., & Kombo, Y. (2022). Effectiveness of ESIA enforcement for tourism development in Tanzania. *Tanzanian Journal of Environmental Studies*, 8(1), 33–49.
- Muhanna, E. (2017). Tourism, environment and sustainability in Zanzibar. *Journal of Tourism Research*, 12(2), 88–97.
- Ministry of Natural Resources and Tourism (MNRT). (2020). *Annual tourism sector performance report*. Government of Tanzania.
- Nyaupane, G., Morais, D., & Dowler, L. (2018). Tourism and environmental sustainability in developing economies. *Annals of Tourism Research*, 70, 94–109.

- Seraphin, H., Sheeran, P., & Pilato, M. (2018). Overtourism and Its Impacts on Coastal Destinations. *Journal of Tourism Futures*, 4(3), 212–226.
- United Nations Environment Programme (UNEP). (2021). *Coastal tourism environmental assessment report*. UNEP Publishing.
- United Nations World Tourism Organization (UNWTO). (2022). *Tourism Highlights 2022*. UNWTO Publications.
- Western Indian Ocean Marine Science Association (WIOMSA). (2023). *Coastal ecosystem management and tourism in the Western Indian Ocean region*. WIOMSA Technical Report Series.
- World Commission on Environment and Development (WCED). (1987). *Our Common Future*. Oxford University Press.