



The Role of Circular Economy in Tourism Industry Sustainability: Critical Review of the Kenyan Tourism Industry

 Juma, O. Alphonse ^{*1},  Pepela W. Anthony¹ and  Okech Roselyne²

¹Department of Hospitality and Tourism Management, School of Business and Economics, Pwani University, Kenya

²School of Arts and Social Sciences, Grenfell Campus, Memorial University of Newfoundland, Canada

*Corresponding Author's Email Address: mcgordon90@gmail.com

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Abstract

Despite many countries considering tourism industry as their major foreign exchange earner, the industry contributes 9% of global greenhouse gases (GHGs), which are the leading contributor to climate change crisis. A large percentage of these GHGs, which pose serious environmental challenges that cannot be overlooked, emanate from anthropogenic factors (human activities) (Ruddiman, Vavrus & Kutzbach, 2020). Most developed countries have embraced circular economy (CE) in their operations to minimise the effects of climate change and to promote sustainable tourism to a great extent as compared to developing countries, Kenya included, yet a proper implementation of CE has been established to aid in scaling down operation costs, reduces the environment impact, helps in climate change mitigation, makes destinations more attractive, enhances customer experience consequently promoting sustainable tourism. The paper employed a content analysis research methodology to review and analyse existing academic literature and government policy documents on circular economy in Kenya and its impacts on tourism sustainability guided by four objectives; to explore the role of hotels in CE uptake; to establish the CE implementation gaps in hotels and to assess existing policy frameworks on CE in the tourism sector in Kenya. Content analysis was adopted because the study's intent was to draw insights and conclusions from existing articles and journals on circular economy and tourism sustainability. Existing literatures were obtained from journals, government publications and articles on CE and tourism. From the literature reviewed, it was established that the concept of tourism waste management, a cornerstone of the CE is vital in minimising tourism environmental impact through waste reduction, recycling, and re-purposing activities. Secondly, the regenerative tourism, concept borrowed from CE encourages innovative waste management practices that

contribute to the protection of the environment and local communities. In addition, the regenerative tourism underscores other responsible tourism concepts including sustainable tourism and ecotourism that advocates for environmental conservation and sustainable utilization of natural resources that support local ecosystems and contribute to their recovery. Lastly from the reviewed literature, CE is a tool for climate change mitigation through the reduction of greenhouse gas emissions by lessening demand for raw materials and new products, encouraging use of solar panels, wind and electric vehicles. This paper enriches the scholarly comprehension of the relationship between CE, tourism and climate change and proposes an integration of CE as an important tool for climate change mitigation, cost management and customer experience in hotels. Furthermore, the paper provides insights into CE practices, offer a guide to researchers on possible key areas of interest for further research.

Keywords: Tourism, Climate Change, Industry sustainability, Circular Economy

INTRODUCTION

Tourism is undoubtedly the fastest growing service industry globally (Pender, 2005, as cited in Omondi, 2019), contributed to 9% to the gross domestic product (GDP) (United Nations World Tourism Organization (UNWTO), 2015). The sector contributed USD 5.4 billion to the Kenyan GDP in 2021 (Statista, 2022). The total employment generated by tourism was 9% or 1.6 million jobs of total employment in Kenya in 2019 (Economic Survey, 2020). According to the latest statistics from World Travel and Tourism Council (WTTC), 2024), the industry is the second largest contributor to foreign exchange to Kenya with earnings estimated at KES 1 trillion in 2023. The tourism services sector thus is extremely significant in socio-economic transformation of developing countries (UNWTO, 2017). However, the relationship between tourism and climate change represents both opportunities and threats. Debates on climate change, its effects, mitigation and adaptation measures, and tourism have been part of various international fora and have re-entered the political agenda of the international community in the 21st century (MacArthur & Stuchtey, 2015; Mugure, 2021).

Consequent to the Paris Agreement of 12th December 2015, which resolved to 'decrease the global average temperature to below 2°C above pre-industrial levels...' and pursue efforts to '... limit the temperature increase to 1.5°C above pre-industrial levels.' the concept of CE has been adopted as a tool for mitigating climate change. Additionally, it has gained significant interest from scholars and experts as a means of maximising sustainable management of scarce resources, by reducing waste, extending product life, promoting material recycling (Geisendorf & Pietrulla, 2018; Kaszás., Keller & Birkner, 2022; Rudan, 2023). Further, CE maximizes resource efficiency through refuse, reduce, reuse, and redistribute materials principles (Costa, Rodrigues & Pacheco, 2020; Axhami, Milo & Scorrano, 2023). Because of the relevance of CE in enhancing resource regenerative ability, scholars have studied circular economy from a wide range of perspectives, including the tourism sector (Costa et al., 2020; Einarsson & Sorin, 2020; Li et al., 2023; Priatmoko, Kabil, Vasa, Pallás & Dávid, 2021; Sørensen & Bærenholdt, 2020).

Despite the substantial global economic contributions from tourism and hospitality, the sector faces increasing scrutiny due to its environmental footprint emanating from consumerism (Mbokazi, 2024). Over the past decade, Kenya has seen a series of climate change impacts that have caused socioeconomic losses estimated between 3% and 5% of the annual GDP (African Development Bank Group (AfDB), 2018) in spite of producing

negligible global greenhouse gas (GHG) emissions (Ministry of Environment & Forestry (MoEF), 2020). Numerous tourism studies take cognisance of the critical role of CE in tourism industry transformation while highlighting its potential contributions to economic, social, and environmental dimensions (Cornejo-Ortega & Dagostino, 2020; Renfors, 2023; Rodríguez, Florido & Jacob, 2020; Yang et al., 2023). For a holistic sustainable growth of tourism, there is a need for a complete shift from linear (take-make-dispose) to circular (take-make-use-re-use-remake) (Girard & Nocca, 2017).

Studies on CE in tourism have covered a wide perspective including; the challenges of its application and benefit in the tourism industry (Martínez-Cabrera & López-Del-pino, 2021). According to Murray, Skene and Haynes (2017), among the different schools of thought that address the issue of the circular economy, each considers it to be a concept of a cyclical system. Table 1 shows these schools and the main points addressed by each.

Table 1: Schools of Thought on Circular Economy

| School of thought | Author (s) | Approach |
|--------------------------|--------------------------------------|---|
| Regenerative Design | John T. Lyle | All systems can be managed regeneratively: the systems alone could generate or renew the sources of energy and materials they consume. |
| Performance Economy | Walter Stahel | The idea is to sell services instead of products. Ownership of the products or services offered is the producer's domain, while the user of the products and services pays only the rent for their use. |
| Cradle to Cradle | Michael Braungart and Bill McDonough | Materials considered obsolete must serve as a source of secondary material for other production lines. These are the flows of biological nutrients and technical nutrients. |
| Industrial Ecology | Roland Clift and Angela Druckman | This theory consists of the study of material and energy flows in industrial systems. The authors suggest that, within industrial systems, closed cycles are created so that the leftovers of the productive processes serve as material for another type of production. This closed cycle directly interferes with the supply chain natural raw materials, thus influencing the environmental and social aspects of the world. |
| Biomimicry | Janine Benyuys | The author thinks of it as 'innovation inspired by nature'. Biomimicry is based on three fundamental principles: <ul style="list-style-type: none"> • Nature as a model: studying models of nature and simulate these forms, processes, systems, and strategies to solve human problems. • Nature as a measure: using an ecological standard to judge the sustainability of our innovations. • Nature as a mentor: seeing and valuing nature based not on what we can extract from the natural world but on what we can learn from it. |

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| Blue Economy | Gunter Pauli | It is based on 21 principles. The movement defends the creation of solutions that consider each location's environmental, ecological, and physical characteristics. Emphasis is placed on the cascading use of available resources, employing a strategy in which the leftovers of a productive process are transformed into resources and energy for another production process. |
|--------------|--------------|---|

Source: Adapted from da Silva, da Silva and Echeveste (2021).

In the context of CE and climate change, there are several studies done emphasising the importance of CE in resource efficiency and reducing environmental impact. For instance, there are studies on garbage waste management, noise and water pollution (Giurea et al., 2022; Nocca, Bosone, De Toro & Fusco, 2023; Rodríguez et al., 2020; Yang et al., 2023), promotion of recycling and reuse, and decreasing the use of once-used plastics (Nocca et al., 2023 and Raab, Wagner, Ertz & Salem, 2023), implementation of resource-saving strategies (Rodríguez-Antón & Alonso-Almeida, 2019).

Additionally, there are studies that have delved on policy and governance perspective in the CE of tourism literature (Axhami et al., 2023; Pamfilie, Firoiu, Croitoru & Ioan Ionescu, 2018). This perspective, advocates for the introduction of a series of policy measures and providing incentive support (Xu, Wang, Tang & Ye, 2022), that supports CE in the tourism industry. Besides, this perspective advocates for a policy framework through incentives and regulations that supports stakeholders' collaboration to drive transition to a circular tourism economy for sustainable practices (Axhami et al., 2023; Bolger & Doyon, 2019; Costa et al., 2020 and Rudan, 2023).

From the existing prominent literature, there is a huge potential for circularity in the tourism industry, however, there is a noticeable gap in establishing the role of CE in tourism industry sustainability in developing countries within the evolving trends of circular economy research. For instance, the existing CE-related activities in Kenya's private sector are concentrated in the agricultural and manufacturing sectors with keen focus on waste management (Trinomics, 2020). The presence of scanty empirical evidence that links circular economy and tourism sustainability from a climate change perspective, presents a contextual and conceptual gap. This paper aims to fill this void through a qualitative content analysis to determine the role of CE on tourism sustainability, assess existing policy frameworks on CE in the Kenyan tourism sector, establish CE implementation gaps in hotels and suggest potential avenues for future research. This analysis serves as a valuable resource for scholars, policymakers, and practitioners seeking a deeper understanding of the circular economy's pivotal role in tourism industry sustainability. It provides insights into the current research landscape and unveils emerging areas of interest.

In regards to the aforementioned context, this paper is premised under three research questions aimed at providing direction for researchers, experts and scholars within the domain of the CE and the tourism industry sustainability. These questions are as follows:

1. Does CE have a role in tourism industry sustainability in Kenya?
2. What are the existing CE policy frameworks for the tourism sector in Kenya?
3. Are there any CE implementation gaps by hotels in Kenya?

The paper adopted qualitative content analysis with the intent to draw insights and conclusions from existing articles, government reports and journals on circular economy and

tourism sustainability. It was established that the concept of tourism waste management, is crucial in minimising tourism environmental impact through waste reduction, recycling, and re-purposing activities. Second, regenerative tourism, encourages innovative waste management practices that contribute to the protection of the environment and local communities. Finally, it was discovered from the reviewed literature that CE is a tool for climate change mitigation. The paper consists of an introduction, methodology, Findings and Discussions, Recommendations and References.

METHODOLOGY

This paper employed content analysis of secondary data as the main source of information. This involved a bibliometric analysis of existing literature. Bibliometric analysis is an analytical technique that involves the quantitative analysis of scholarly works (Lim, Kumar & Ali, 2022). Content analysis can take qualitative or quantitative approach. Omondi (2019) asserted that qualitative content analysis is usually utilised to analyse documents, oral or visual communication to distil words and phrases that have the similar meaning. The advantage of bibliometric analysis lies in its extensive reach and intricate detail and its ability to collect data from databases (Kumar, Lim, Sivarajah & Kaur, 2023). Some of the databases used include Google Scholar, Scopus, Web of Science, Institutional Websites and MyLoft. The bibliometric analysis reviewed twelve (12) documents of which 8 were journals, 4 were country, regional or international tourism policy reports which formed the primary source of valuable information (Table 2). Bibliometric analysis was done between March and April 2024. The researcher used key words for information search for instance ‘circular economy’, ‘circular economy and tourism industry’, ‘tourism sustainability’, ‘the role of circular economy in tourism’ after which a table with the bibliometric analysis was generated (Table 2). The research design allowed the researcher to appreciate the various CE practices used by various countries and industries, the role of CE in growth and development of tourism. The validity was ascertained through soliciting for expert judgement based on the questions from experts on climate change and circular economy.

Table 2: Analysed Journals and Policy Documents

| No | Journal | Title | Year | Author |
|----|---|--|------|----------------------|
| 1. | African Journal of Hospitality, Tourism and Leisure | Hotel standardization and classification system in Kenya: A quality assurance approach | 2019 | Omondi Jack Fredrick |
| 2. | Environment, Development and Sustainability | Circular economy and sustainability in the tourism industry: critical analysis of integrated solutions and good practices in European and Chinese case studies | 2023 | Li et al |
| 3. | Journal of Circular Economy | Circular Economy and Tourism: A Bibliometric Journey Through Scholarly Discourse | 2024 | Kabil et al |
| 4. | Working Paper. Washington, DC: World Resources Institute. | Circular economy as a climate strategy: current knowledge and calls-to-action | 2022 | Wang et al |
| 5. | EHL Insights | Circular Economy in the Tourism Sector | 2019 | Lopez |
| 6. | Erich Schmidt Verlag GmbH & Co. KG | Circular Economy in Tourism and Hospitality – a Nordic Perspective | 2023 | Holmberg et al |

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|-----|--|---|------|------------------|
| 7. | European Journal of Tourism, Hospitality and Recreation | Circular Economy in Tourism and Hospitality: Analysis of Scientific Production on the Theme | 2021 | Silva et al |
| 8. | Trinomics | Circular economy in the Africa-EU cooperation - Country report for Kenya. Country report under EC Contract | 2020 | Karcher et al |
| 9. | Resources, Conservation & Recycling: Elsevier | Circular economy indicators: What do they measure? | 2019 | Moraga et al |
| 10. | Environmental Science and Pollution Research | Circular economy strategy and waste management: a bibliometric analysis in its contribution to sustainable development, toward a post-COVID-19 era. | 2020 | Cardoso et al |
| 11. | PLoS ONE | Circular economy, environmental quality and tourism receipts in Europe: A time series data analysis. | 2023 | Kwasie et al |
| 12. | Kenya Institute For Public Policy Research and Analysis (KIPPRA) | Accelerating the Circular Economy in Plastic Waste Management for Kenya | 2022 | Anomat & Ibrahim |

Source: From the Researcher (2024)

FINDINGS

The study reviewed 12 scholarly articles, country tourism reports, regional and national tourism policy documents and existing policy frameworks as summarised in the Table 2 using *circular economy*, *circular economy and tourism industry*, *tourism sustainability*, *the role of circular economy in tourism* as the key words. The findings were organised based on the research questions used in the study.

The role of CE in tourism sustainability is a vital theme as depicted in the comprehensive literature review study, even though it is still in its nascent stages. For instance, the concept of tourism waste management, a cornerstone of the CE within tourism. According to Mandpe, Paliya, Gedam, Patel, Tyagi and Kumar (2023), tourism environmental impact can be minimised through waste reduction, recycling, and re-purposing activities. Furthermore, the review has put forward additional valuable findings on CE and tourism shedding light on specific CE concepts within the tourism sector. These concepts are instrumental in championing the transformation of the tourism industry, from the mere sustainability with a goal of doing less damage to the regenerative tourism which provides an opportunity for the industry to give back to the society (Dredge, 2022; Gonella, Godinho, Ganga, Latan & Chiappetta, 2023). The findings are discussed below.

DISCUSSIONS

Circular Economy and Tourism Sustainability

Bellato, Frantzeskaki and Nygaard (2023) noted that regenerative tourism, concept borrowed from CE encourages innovative waste management practices that contribute to the protection of the environment and local communities. Regenerative tourism focuses on creating a positive legacy and leaving destinations in a better state than before, ensuring that tourism gives back more than it takes. It is tourism that goes beyond sustainability, aiming to

restore, revitalise, and positively impact the destinations visited. Additionally, regenerative tourism underscores other responsible tourism concepts including sustainable tourism and ecotourism that advocates for environmental conservation and sustainable utilization of natural resources that support local ecosystems and contribute to their recovery. The link between conservation and regenerative tourism is symbiotic, with each reinforcing the other's goals. For instance, conservation provides the foundation upon which regenerative tourism operates, safeguarding the integrity of natural habitats and cultural sites whereas regenerative tourism acts as an impetus for conservation, providing resources and support towards initiatives that promote sustainability, resilience, and community well-being (Altruistic Traveller, 2024).

From the reviewed literature, CE is a tool for climate change mitigation. For instance, the reviewed literature by Wang *et al* (2022) asserts that CE contributes to climate change management by: reducing greenhouse gas emissions by lessening demand for raw materials and new products, and consequently reduce greenhouse gas emissions from the production phase; and supporting sustainable clean energy transition by encouraging use of solar panels, wind and electric vehicles, which reducing greenhouse gas emissions from energy production.

Circular Economy Policy Frameworks and Tourism Sector in Kenya

According to IPCC (2019), the total global food system greenhouse gas emissions, including agriculture and emissions beyond the farm gate such as from the food processing industry, amount to as high as 11–19 Gt CO₂ e. Through a circular food system characterised by regenerative agriculture, food loss and waste reduction, and composting is expected to reduce annual greenhouse gas emissions from the global food system by 49% in 2050 (Ellen MacArthur Foundation 2019). According to International Union for Conservation of Nature (IUCN) (2021) regenerative agriculture is a practice that encompasses both conservation agriculture and more sustainable agroforestry techniques aimed at increasing crop productivity, enhancing soil fertility, improving water retention, and creating other ecosystem services, generating extensive economic, mitigation, adaptation and social benefits. The relationship between regenerative agriculture and tourism involves fostering connections between locals, visitors, and the local food systems, inspiring positive behavioral change and promoting conscious consumption which is at the heart of sustainable agritourism.

From the third Kenya International Investment Conference (KIICO 2023), it was reported that Kenya had not fully mainstreamed a circular economy despite over 90% of the 8 million tonnes of waste generated annually being either organic or recyclable. Hospitality sector's role in food loss and waste reduction is vital since food loss and waste is responsible for about 8% to 10% of annual GHGs emissions (IPCC 2019). A reduction in food loss and waste by 50% at all stages of the supply chain would reduce global GHGs emissions by 3%, with most of the decline associated with reduced output in the farming and transport sectors (World Bank, 2020).

Kenya has instituted policies geared towards addressing waste-related problems and lately it is starting to develop a CE policy approach that goes beyond waste. Some of the key policy frameworks include:

The use of plastic has been a menace in the tourism sector in the recent past. OECD (2018) reported that plastic generated 1.8 Gt CO₂ e of greenhouse gas emissions in 2019 which

represents approximately 3% of global emissions. According to the Pew Charitable Trusts and Systemiq (2020), an integrated circular system change in plastics is projected to result in 25% lower plastic-related greenhouse gas emissions in 2040. The report further states that mechanical recycling can save up to 50% in lifecycle greenhouse gas emissions, and even greater reductions compared to incineration. Out of the 8 million tonnes of waste produced in Kenya per year, 20% is plastic. In consideration of the detrimental effects of plastics, Kenya banned single-use plastics in 2020 (Ministry of Environment, Forestry and Climate Change, 2021).

The ban on the use of single-use plastics in national parks and other protected areas in 2020 was the second step in the fight against single-use plastics. The tourism sector has been the primary driver behind this ban, as government officials saw the growing plastic pollution in nature areas as a risk for negative impacts on tourism in those areas.

The Sustainable Waste Management Act 2022, which aims at promoting proper waste management through the lenses of CE principles. Of critical importance is the integration of Extended Producer Responsibility (EPR) policy where private sector associations are involved in the development, implementation and enforcement of the new policy as the Ministry of Environment, Forestry and Climate Change lacks the required enforcement capacity.

The enactment of the Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024 aims to promote environmentally sound management of products throughout their life cycle, obligate producers to take responsibility for the end-of-life (post-consumer) management of their products and operationalize polluter pays principle.

The Constitution of Kenya (2010) devolved waste management function to the county governments for ease of implementation. The Kenyan government further commitment towards uptake of circular economy has been witnessed through collaboration with other partners such as the private sector including the Kenya Association of Manufacturers (KAM), Kenya Private Sector Alliance (KEPSA), Sustainable Inclusive Business Kenya, and Kenya association of waste recyclers, among others (Kenya Institute for Public Policy Research and Analysis (KIPPRA), 2022).

Circular Economy Implementation Gaps by Hotels in Kenya

According to Trinomics (2020), Kenya is regarded as a front-runner in furthering a transition to circular economy (CE). However, there still exist gaps towards full transition to circular economy. The country still has important steps to make to mainstream it further in its broader economic policy framework.

The ban on single-use plastic bags in 2015 made Kenya the second African country to completely ban the use of single-use plastic carrier bags. However, the implementation of the ban was hijacked by some controversies in its early stages, as an adequate plan for alternative for the plastic bags was lacking.

According to KIPPRA (2022), despite the devolution of waste management functions, most of the counties still lag in developing legislations and policies on waste management, including laws on plastics. For instance, only a handful of counties have developed these regulatory frameworks on solid waste including Nairobi County Plastic Control Act 2016, Kericho County Environment Management Act, 2021 and Mombasa County Solid Waste Management Policy, 2019.

CONCLUSION

The key outcomes of the research underscore the growing interest in the CE approach within the realm of tourism studies. However, the integration of CE in tourism industry by developing countries is still in its nascent stages, as evidenced from the qualitative content analysis of the various academic publications, recent studies and policy documents that connects CE practices and tourism as outlined in the current study.

In the Kenyan context, most of the policies have been primarily driven by the Ministry of Environment, Forestry and Climate Change, a weakness of Kenya's CE policy up to now. CE is a cross-cutting concept that touches upon many aspects of the economy and society including tourism. Therefore, for CE policy to be successful it is important that a holistic CE policy is developed, through an integrative approach across economic sectors and that is supported by all relevant national ministries and appropriate intergovernmental structures.

Setting up a national circular economy action plan could be a valuable step to give direction to CE development in Kenya. From the analysis, CE practices shape several concepts within tourism studies including; waste management, recycling, sustainability, agri-tourism and ecotourism.

RECOMMENDATIONS

Recommendation for Policy and Practices

Recent studies in Kenya have shown that what is dumped is 60% organic, 30% recyclables and 10% others (KIICO 2023). Therefore, Kenya is poised to gain from full integration of CE in most of her sectors of the economy. This should start by setting up a national circular economy action plan to give direction to CE development in Kenya.

For smooth transition to CE as envisioned by the Ministry of Environment, Forestry and Climate Change during the Annual Circular Economy Conference 2023, the government should embrace the below strategies:

- There is need for one government approach on circular economy by developing a national circular economy strategy to be implemented by all government agencies, county governments and ministries.
- The Ministry of Tourism and Wildlife should integrate CE as it works towards formulating a Revised Tourism Policy in the near future to enhance uptake. This should include incentives to hospitality stakeholders to encourage adoption.
- Tourism Regulatory Authority (TRA) as the industry regulator in partnership with EAC member countries should review the EAC Classification Criteria with clear indicators on CE for accommodation facilities. In addition, TRA Minimum Standards used in licensing the tourism sector players should integrate CE elements as part of the standards used in quality audits of tourism enterprises.
- There is inadequate data to ascertain the level of implementation of circular economy across several sectors of the economy in Kenya. There is need for a multi-agency or council responsible for collating data on circular economy for fact-based decision making.

Recommendation for Further Studies.

Despite the paper providing insights into the relationship between CE and tourism, policy frameworks and gaps and the role of hotels in CE uptake, this paper acknowledges its

limitations. First, the paper focuses solely on English-language publications and government documents from 2018 to 2023, with an exclusion of grey literature and non-academic sources done in 2017 and beyond. This exclusion may have overlooked worthwhile insights from industry reports and government publications done from 2017 and beyond.

Second, methodologically, the qualitative content analysis, though informative, provides a qualitative assessment, potentially missing quantitative nuances. Further study could address these limitations by conducting longitudinal analyses to trace the evolution of CE practices and principles in tourism over an extended period.

Third, considering cultural and regional differences on the level and manner in which the CE practices are integrated into tourism for sustainability could also be an exercise worth investigation to provide insights into unique challenges and opportunities from different countries to give the global perspective.

Finally, further study may also consider carrying out longitudinal analyses to trace the evolution of the relationship between CE practices and tourism over a more extended period. This can offer a better context on the trends happening in the academic realm.

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