

ENVIRONMENTAL IMPACTS OF ECOTOURISM IN ZIMBABWE'S NATIONAL PARKS

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ABSTRACT

With a focus on sustainability and conservation, ecotourism has developed into a major driver of global economic growth. But it's still unclear how it impacts on national parks, especially in Zimbabwe. With a focus on Mana Pools and Hwange National Parks, this study analyzes the environmental effects of ecotourism operations in Zimbabwe's national parks. The research employed qualitative methodology, using in-depth interviews with main stakeholders, including local community members and park authorities. Thematic analysis was applied to interpret the data, revealing both positive and negative effects of ecotourism. Findings indicate that ecotourism activities, such as guided safaris, canoeing, birdwatching, and cultural tourism, generate revenue for conservation and community development. However, these activities also present environmental problems, such as pollution, disturbance of wildlife, and habitat degradation. Techniques like strengthening community involvement, enforcing visitor carrying capacities, and upgrading infrastructure were suggested as ways to lessen these effects. The study emphasizes the necessity of well-balanced ecotourism regulations that uphold socioeconomic advantages while giving ecological integrity top priority. Adopting certification programs, enhancing environmental education, and cultivating alliances for sustainable management are some of the recommendations.

Key Words: Ecotourism, National Parks & Environmental impacts.

INTRODUCTION

Tourism is a major contributor to global economic growth. Ecotourism has become a crucial component that prioritizes environmental conservation and sustainability. Snyman (2014) posits that ecotourism is widely known to be a responsible travel practice aimed at preserving ecosystems while fostering economic benefits. However, ecotourism poses various negative challenges that require critical evaluation. This study sought to interrogate the notion that ecotourism genuinely serves as a sustainable conservation approach or contributes greatly to environment degradation. This study sought to identify gaps in the conservation practices of ecotourism and propose evidence-based recommendations for minimizing the negative impacts.

BACKGROUND TO THE STUDY

According to Mishra and Kumar (2024) ecotourism has grown rapidly in recent years, increasing by an estimated 20% every year and greatly assisting community growth and nature conservation. Even so, although ecotourism is very helpful, it has also brought up concerns about its impact on nature, different species, and nearby cultures (Reed, 2020; Warinda et al., 2024). Following incorrect ecotourism techniques has damaged natural habitats, exploited nearby communities, and added to the level of carbon emissions. Several countries have noted the concerning effects of ecotourism on the environment.

In Finland and the UK, overcrowding in national parks has led to soil erosion, disturbed wildlife, and increased litter, even in strict nature reserves (Hill & Gale, 2021). Several scholars believe that advertising ecotourism in Europe can mislead people, as some companies promote it as eco-friendly without enforcing strict environmental standards (Gossling, 2021). Constructing tourist facilities in remote areas has fragmented habitats and altered ecological processes, particularly in regions like the Alps and the Scottish Highlands (Jones & Newsome, 2020; Jones et al., 2024). The points above highlight the concern among academics that, without effective regulation and local community involvement, ecotourism might do more harm to the environment than good. For this reason, it is advisable to examine ecotourism in detail, especially in regions where the ecosystem is unstable and authorities lack consistency.

Many African countries, including Kenya, Tanzania, and South Africa, have benefited from their efforts to preserve the environment (Novelli, 2021). However, these countries face issues such as wild animals being unable to move freely, illegal tourism activities, and environmental damage due to frequent human activity in national parks (Spenceley, 2020). Maintaining a balance between conservation and tourism development is a primary concern for ecotourism.

Due to its stunning outdoor scenery, rich wildlife, and cultural landmarks, Zimbabwe is an excellent destination for ecotourism. Many tourists visit Hwange National Park and Mana Pools each year, which supports Zimbabwe's economy and promotes conservation. However, many experts now believe that increased tourism in these protected areas can harm the ecosystem. The growth of ecotourism in Zimbabwe is thought to contribute to pollution, disturb wildlife, and destroy their habitats. In addition, people dumping garbage and driving off-road in protected areas are harming the region's ecological diversity (Mudzengi, Mutanga, Muboko, & Gandiwa, 2021).

This situation regarding ecotourism in Zimbabwe's national parks has led people to question whether ecotourism is truly environmentally friendly. It has been reported that more and more species are losing their habitats, indicating that it is time to take urgent action, (Buckley, 2021). Without sufficient management and mitigation efforts, the ecology of Zimbabwe's protected areas will be adversely affected, which will diminish their capacity to support tourism. The goal of this study is to review and suggest actions that will enhance ecotourism conservation in Zimbabwe.

Ecotourism has been promoted as a sustainable conservation form of tourism, however, its actual effect on Zimbabwe's national parks remains uncertain (Chikodzi et al., 2023). According to Gandiwa (2021), the increase of human traffic and activity in protected areas has led to biodiversity loss and habitat destruction. Regardless of the economic benefits, increased tourism activities in parks like Mana Pools and Hwange National Park have raised questions of ecosystem ineffective management strategies and ecosystem imbalances. Already, exciting studies have assessed general economic impacts, therefore, there is limited research on the effectiveness of Zimbabwe's ecotourism policies, theoretical contributions, and practical conservation strategies. Therefore, this study using a qualitative research methodology to examine ecotourism practices, monitoring frameworks, and stakeholder engagement. The findings of this study will provide an enhanced practical implementation, policy recommendations, and contribute to ecotourism theory by pinpointing the best practices for sustainable conservation and community involvement, as well as consulting conservation experts. The study findings may help to create a balanced environment and tourism policies that will benefit Zimbabwe's parks and add to global knowledge.

MAIN OBJECTIVE

The main objective of the study was to assess the environmental impacts of ecotourism activities in Zimbabwe's national parks.

LITERATURE REVIEW

This review explores key aspects of ecotourism in national parks and protected areas. It examines the range of activities, including safaris, guided walks, eco-lodging, birdwatching, marine tourism, adventure experiences, and cultural tours. It considers sustainability challenges such as ecological impacts, carrying capacity, and over-tourism. The review also addresses strategies from other countries to promote sustainable practices and community involvement. Finally, it highlights the

role of policy, governance, and economic and political factors in ensuring effective ecotourism management.

ECOTOURISM ACTIVITIES DONE IN NATIONAL PARKS

Ecotourism has been a rising trend in the 20th century and has become a tool that helps foster sustainability and conservation. According to Buckley (2023), national parks worldwide serve as primary sites for ecotourism activities such as wildlife safaris, eco-lodging, marine ecotourism, guided nature walks, birdwatching, adventure tourism, and cultural tourism.

Wildlife safari rides

Safari game rides are one of the famous ecotourism activities done in Africa; however, countries in South America and Asia are also known for such activities of observing wildlife in their natural habitats. African countries such as Tanzania, Kenya, South Africa, and Zimbabwe are known for their extensive game ride experiences. These attract millions of tourists who are eager to see the big five (elephant, leopard, lion, rhino, and buffalo) stated by (Lawton, 2022). Lawton continues to state that parks such as Serengeti National Park in Tanzania have structured safari drives that help tourists experience different ecological ecosystems while generating revenue and fostering sustainability and conservation

According to O'Neal (2024). states that in North America, parks such as Yellowstone National Park offer similar Activities and experiences, such as viewing unique species such as the bison, wolves, and bears in their natural habitats. This way of ecotourism helps generate revenue, helping foster revenue in a certain country; however, according to Spenceley (2020), the rapid increase of wildlife tourism will lead to negative consequences such as habitat decline, increased human and wildlife conflicts, and depletion of natural resources

Hiking and Guided nature walks

This activity is somewhat similar to safari game rides, whereby it's a low-impact activity that helps visitors to get intimate experiences with the wildlife and landscapes by walking instead of the vehicle-based drives, allowing for a slower and immersive interaction and appreciation of the natural beauty. According to Buckley (2021), effective guided ecotours in Costa Rica's Colorado National Park have been luring tourists, therefore increasing their revenue. Trained naturalists educate tourists on the importance of the fauna and flora of the region. There are similar practices

in countries such as Australia's Daintree rainforest, they have guided treks that educate on conservation of their rainforest and indigenous heritage

Nature walks are a way of reducing our carbon footprint on the environment; however, they are not without their concerns. (Tilman, 2017) states that poorly managed hiking and trails might lead to the destruction of vegetation, soil erosion, and disturbance of wildlife. He continues to state that an influx of visitors can cause increased waste and human traffic, affecting fragile ecosystems.

Eco-lodging

The use of environmentally friendly housing is another current trend in the 20th century. In countries such as Botswana, they have the Okavango Delta and Lodges such as the Sandibe Safari that run on solar energy and have installed strict waste management systems (Honey & Krantz, 2021). There are also similar activities in Costa Rica's Monteverde Cloud Forest; they use rainwater harvesting strategies and composting toilets, which will attract eco-friendly tourists and conservationists, according to Novelli (2021). As shown, Eco-lodging promotes sustainability; it also generates revenue in the process by attracting a large number of eco-friendly tourists. However, Weaver (2020) warns that the increase of tourism infrastructures in protected places will lead to deforestation and water overuse if not managed properly

Birdwatching

Birdwatching has now become a common ecotourism activity done in various national parks around the world. Scholars such as Buckley (2023) state the importance of the Galapagos Islands, where tourists observe different and rare bird species. In Africa, we have parks such as Bwindi Impenetrable National Park that attract tourists seeking to watch the rare shoebill stock. In Zimbabwe, we have our own *Kuimbayeshiri* bird park. Not only do these parks generate revenue, but they also educate tourists about the different types of birds and explain their importance to the ecosystem, as well as why we should avoid their extinction (Weaver & Jin, 2020). However, an increase in birdwatchers will lead to a disruption in breeding patterns and nesting sites.

Marine Ecotourism Activities

There are new marine activities in the coastal and marine parks, such as the Turtle Rehabilitation Center in Hervey Bay, whale watching, and the Dolphin Superpod off California. In countries such

as Australia and Indonesia, they have state-of-the-art marine and coral reef activities (Hughes, 2022). Marine ecotourism activities help raise awareness of the oceans and their ecosystems; they also help provide economic benefits (Rockstrom, 2021). Craig (2020) states that uncontrolled diving can cause pollution, coral bleaching, and habitat destruction. He continues to state that boat traffic in whale watching areas disturbs marine mammal migrations and mating patterns.

Adventure sustainable activities in tourism

Adventure sustainable activities are activities that are exciting and daring that give a sense of adrenaline, fulfilling today's need without affecting future generation needs due to conservation and limited effect on their surrounding environment (Zimmermann, 2016). Adventure activities such as kayaking, zip-lining, and mountain climbing have become popular in national parks. In Nepal, Sagarmatha National Park offers a sustainable trekking program to Mountain Everest while integrating waste management strategies to minimize ecological damage, according to Brown (2022). Filho (2018) states that in Canada's Banff National Park, they have controlled water rafting that reduces disturbance on the aquatic ecosystem. Although adventure activities help the host economies, scholars such as Sachs (2015) warns that mass participation leads to ecological degradation.

Cultural and indigenous preservation tourism

Cultural tourism has become a trend in the 20th century (Queirós, 2015), it's about engaging in the different cultures and indigenous activities of the travel destination while promoting sustainability (Rahman, 2018). In the Amazon Rainforest, they have eco-tours conducted by indigenous tribes that educate tourists on rainforest preservation and sustainable living (Garnett, 2015). According to Venter (2021) states that in Kenya, the Maasai Mara integrates Maasai-led ecotours while visitors learn about traditional practices for conservation. Cultural tourism conserves and fosters sustainability as well as heritage appreciation, it can also be regarded as a way to exploit and commercialize cultural traditions (Stonza, 2022)

Ecotourism activities widely vary in different national parks across the globe, as suggested by the above remarks. These activities prove to be educational while generating revenue for local communities and conservation projects (Buckley, 2023), however, these activities do not come

without their challenges that affect the ecological and ecosystem aspects of the host area (Fennell, 2022).

ECOTOURISM AND SUSTAINABILITY IN PROTECTED AREAS

Ecotourism has been set as a substitute for mass tourism; it aims to balance economic benefits for local host communities and environmental conservation. Moreover, the growing number of tourists in protected areas such as national parks has increased concerns and questions about their true sustainability. Ecotourism promotes conservation initiatives by generating revenue, but it also contributes to environmental destruction if not properly managed (Buckley, 2023). At this point we examine the interactions of environmental sustainability and ecotourism in protected areas by highlighting both benefits and challenges.

The role of ecotourism in sustainability and conservation

Ecotourism is seen as a mechanism to fund sustainable practices and conservation projects. (Fennell, 2022) states that money generated by ecotourism activities like guided tours, park entry fees, and ecolodges helps generate finance for habitat restoration, wildlife protection, and antipoaching programs. Reports have shown that well-managed parks like Costa Rica's Monteverde Cloud Forest, ecotourism played a significant role in preserving biodiversity and fostering economic growth of the local community (Weave & Lawton, 2022). Buckley (2021) states that without careful regulation, Ecotourism will contribute to environmental destruction and not conservation. Raising questions about whether ecotourism is truly sustainable or rather a less harmful way of mass tourism.

Ecotourism footprint on the Ecological environment

Ecotourism aims to reduce tourism's negative impacts on the environment. (Spenceley, 2020) states that even well-managed ecotourism activities have consequences. He goes on to state that wildlife safaris, hiking, and ecolodges, if not properly managed, will contribute to wildlife disturbance, soil erosion, and vegetation loss. Reports from Yellowstone National Park show that human presence alters natural feeding patterns and movements of species such as bison and wolves (Cassidy, 2020).

Marine-based ecotourism activities like scuba diving and snorkeling risk delicate ecosystems like coral reefs (Rockstrom, 2017). He continues to highlight that coral bleaching and pollution in trafficked areas like the Great Barrier Reef increase because of unsustainable practices; therefore, a need for stricter tourism environmental policies.

Carrying capacity and over-tourism in national parks

The biggest challenges in ecotourism are how to manage the carrying capacity in national parks to make sure that the intended number of visitors does not exceed, to ensure the environment's sustainability. Novelli (2021) states that many national parks are facing over-tourism, and it is causing a strain on the ecology. Machu Picchu in Peru has put in place strict tourist limits to minimize foot traffic on the fragile landscape (Cassidy, 2020).

In Tanzania, the Serengeti, demand for activities such as safari drives resulted in demand for off-road driving, leading to degradation and soil compaction (Musika, 2022). Weaver (2020) suggests implementing strict regulations like timed visits in designated routes to minimize such impacts while fostering quality tourism.

STRATEGIES IMPLEMENTED IN OTHER COUNTRIES

Buckley (2023) suggests implementing Eco certification programs requiring tourism operations to follow strict sustainability criteria, for example, Costa Rica's certification for sustainable tourism (CST), and also like Botswana's green safari program. (Fennell, 2022) states that the importance of community-based tourism (CBT), local communities will be directly involved, which will benefit them economically. This approach has been a success in Namibia's conservancies, Ecotourism revenue is invested in local development and wildlife conservation

Ecotourism serves as a substitute for mass tourism while providing economic benefits and promoting environmental awareness. Moreover, if not properly managed it can lead to ecological, biodiversity, and resource depletion. Scholars such as Fennel (2022) suggest balancing conservation priorities and tourism growth through regulatory frameworks. Ecotourism should be guided by sustainability principles, prioritizing long-term ecological benefits over short-term economic benefits, which will ensure the protection of national parks.

THE ROLE OF POLICY AND GOVERNANCE IN SUSTAINABLE ECOTOURISM MANAGEMENT

One important approach for balancing commercial growth and environmental preservation is ecotourism. Ecotourism is important to national parks and in other protected areas due to it supports conservation, creates sustainable job opportunities, and helps preserve the environment.

Territorial disputes, habitat destruction, and dwindling resources in ecotourism destinations can still result from ineffective government regulations and policies (Fennell, 2017). Effective laws, well-crafted policies, and active involvement from governments, conservation organizations, and the local community are essential for successful ecotourism governance. This section explores how governance and policy can preserve ecotourism's positive social and environmental impacts.

Governance Frameworks for Ecotourism in National Parks

For ecotourism to continue in national parks and protected places, good governance is necessary. According to Buckley (2020) governance controls the trends, policies and choices about both conservation and tourism. Effective governance decisions guarantee that ecotourism stakeholders stay involved and that safety and conservation regulations are followed and that tourism is not overdone.

Spenceley (2021), states that multi-level collaboration between governmental entities, non-governmental organizations, travel agencies and locals is essential for ecotourism governance. Official plans concentrate on visitor numbers, environmental effects and the use of sustainable building materials to manage ecotourism in Canada and Australia (Weaver, 2022). The environment often suffers as a result of bad governance. Due to insufficient enforcement of preservation policies, illegal cataloging, excessive travel, and habitat demolition present problems for national parks in developing countries (Honey, 2016). To guarantee that national parks stay pristine, governments must apply stricter laws and hold officials more responsible and cooperative.

International and National Policies in Ecotourism Regulation

Bad governance usually has negative impacts on the environment. National parks that are in developing nations face challenges from overtourism and habitat destruction as a result of inadequate enforcement of preservation policies (Honey, 2016). Governments must enforce

stronger legislation and hold officials accountable, transparent, and cooperative so as to ensure that national parks remain original.

At a national level, governments are central in putting rules governing ecotourism into effect. It is stated by Honey (2020) that certain countries have implemented ecotourism laws that strike a balance between economic growth and environmental preservation. For instance, the protection area management plans and conservation easements have been successfully established in several nations, guaranteeing that tourism does not surpass the carrying capacity of delicate ecosystems (Fennell, 2021).

There are differences in the way policies are applied from one region to another. There are some countries where it is difficult to carry out ecotourism policies due to a limited government capacity and various economic interests (Buckley, 2020). To ensure ecotourism helps with conservation for many years, governments should update environmental rules, offer sustainable tourism investment and cooperate with conservation organizations.

Community Involvement in Policy Development and Decision-Making

Involving the community in decision-making is one of the most important components of sustainable ecotourism governance. According to Fennell (2015), involving local communities in tourism management guarantees that the advantages of ecotourism are shared fairly and improves the efficacy of conservation initiatives. Conflicts between conservation officials and locals who rely on natural resources for their livelihoods frequently occur in areas where local populations are left out of policy debates (Spenceley, 2017).

Co-managed national parks and ecotourism revenue-sharing schemes are examples of community-based conservation efforts that have proven effective in many nations. Weaver (2014) points out that conservation results have greatly improved in nations where indigenous groups have been granted ownership rights over ecotourism companies. Local communities are more likely to support conservation efforts and participate when they are actively involved in governance institutions.

There are still issues despite these achievements. According to Buckley (2016), in many areas, community involvement is restricted to consultation, with actual decision-making authority being centralized in governmental bodies and global conservation groups. More authority over tourism

income, park administration, and conservation planning must be given to local communities for community-based government to be genuinely successful.

Regulatory Mechanisms and Compliance in Ecotourism Management

To guarantee that ecotourism operators adhere to sustainability concepts and environmental requirements, regulatory measures are necessary. National parks frequently employ licensing programs, environmental impact assessments (EIAs), and ecotourism certification schemes to control tourism activities (Honey, 2020). For instance, ecotourism operators must fulfill stringent environmental requirements to be certified by Costa Rica's Certification for Sustainable Tourism (CST) program (Fennell, 2021). In a similar vein, South Africa has implemented tourism sustainability criteria that support conservation-based tourism models, eco-friendly lodging, and responsible wildlife interactions.

Nonetheless, Weaver (2014) cautions that when enforcement is lax, regulatory measures frequently fail. Political meddling, resource scarcity, and corruption make it difficult for conservation officials to keep an eye on adherence to environmental laws in many developing nations. Off-road driving, unlawful wildlife encounters, and uncontrolled tourist facility construction are examples of unsustainable tourism activities that continue to endanger national parks. Governments must therefore support environmental monitoring systems, give park rangers more money, and punish tourism companies that break conservation rules severely to improve regulatory compliance (Buckley, 2016).

ECONOMIC AND POLITICAL CHALLENGES IN ECOTOURISM GOVERNANCE

Political and economic factors that impede conservation efforts frequently influence ecotourism governance. Buckley (2016) contends that rather than long-term environmental sustainability, short-term economic objectives drive ecotourism policies in many nations. Governments that depend significantly on tourism-related income could be reluctant to enforce stringent rules on ecotourism companies for fear of deterring foreign investment.

Political unrest makes managing ecotourism much more difficult. Spenceley (2017) points out that political leadership in certain nations might alter conservation policies, making it challenging to develop long-term sustainability plans. Politically influenced national parks frequently find it difficult to enforce environmental laws, which results in unchecked visitor growth.

The efficacy of regulatory procedures, policy execution, and governance frameworks determines how long ecotourism in national parks can survive. Weak governance systems and laxly implemented regulations can result in environmental damage and unsustainable tourism activities, even while ecotourism can promote conservation and provide financial advantages.

Researchers like Fennell (2017), Buckley (2016), and Honey (2016) stress the significance of community engagement, stringent regulatory enforcement, and multi-stakeholder collaboration in ecotourism governance. Successful ecotourism management by nations like Australia, Canada, and Costa Rica shows that robust governance frameworks can strike a balance between environmental preservation and economic expansion.

In spite of a large body of research on ecotourism activities, sustainable practices, policy mechanisms, and governance systems in national parks and protected areas, gaps exist. Most research is narrow in that it treats ecological effects, economic advantages, or policy matters in isolation, with scant work looking at the combined interaction of these in selected local contexts. Furthermore, while cross-border examples can serve as valuable learning experiences, there is limited empirical data on the implementation, monitoring, and experiences of ecotourism interventions in lesser-studied national parks, particularly in developing countries such as Zimbabwe. This lacuna warrants a context-specific, empirical study that examines the effectiveness of ecotourism activities, sustainability practices, and governing systems in driving conservation, as well as benefiting local communities. Thus, this study applies a qualitative research methodology to examine these elements in further detail and provide insight that can be applied to inform better ecotourism management practices.

METHODOLOGY

This research adopted a qualitative approach which allowed for the use of conversational, open-ended communication to gather in-depth information by allowing respondents to freely express themselves on the issue. We interviewed stakeholders which included local communities and park authorities. Thematic analysis was applied to interpret the data, revealing both positive and negative effects of ecotourism. Each interview lasted about 30 minutes, and all were conducted face-to-face. Interviews were then transcribed verbatim for analysis. Data were broken down into parts for coding and theme deriving. For ethical considerations, participants received complete information about the questions they would be asked, the purpose of the data, and any potential

repercussions. In addition, they signed agreement forms to participate in the study and were free to withdraw at any given time. For reliability of findings, various respondents were interviewed in order to compare the authenticity of the data.

RESULTS AND DISCUSSION

This section reports the findings of the study, showing critical issues identified by interviewing park authorities and members of society regarding ecotourism activities in Zimbabwean national parks. The issues of concern are the type of ecotourism activities conducted, their impacts on wildlife and habitats, and environmental degradation implications resulting from tourism. The study also discusses strategies currently employed to minimize their impacts, including monitoring, education of tourists, and community involvement. Together, they give an overall picture of how ecotourism works in terms of biodiversity, local people, and conservation management, and this provides the context for discussion and analysis.

ECOTOURISM ACTIVITIES BEING CARRIED OUT IN NATIONAL PARKS IN ZIMBABWE

Based on the responses from park authorities and community members, several key themes emerged, which are Activities Done Under Ecotourism, Impacts of Activities on Wildlife, Ecotourism Activities Responsible for Affecting Wildlife, Types of Ecotourism Activities Available, and Role of Interpretation and Education in Activities. Before exploring these themes, it is important to note that while most respondents showed a reasonable understanding of the concept of nature-based tourism, their interpretations varied. Despite the diversity in responses, a common thread was evident: nature-based tourism refers to forms of tourism centered around natural environments, particularly activities that allow tourists to interact with and appreciate biodiversity. Respondents described it in terms of wildlife viewing, natural scenery appreciation, and environmentally grounded travel experiences.

It's all about letting people experience the wilderness and the species that live in it—safaris, guided walks, and nature-based recreation (Interview Respondent PA1).

Nature tourism includes wildlife watching, fishing, and even cultural visits—all of it is rooted in our natural biodiversity (Interview Respondent CMI).

To me, it means taking visitors into wild, undisturbed areas and teaching them about what lives there, especially birds, animals, and trees (Interview Respondent PA2).

These views align with the understanding of nature-based tourism as a broad concept that encompasses tourism activities tied directly to natural ecosystems and biodiversity (Buckley, 2009).

However, some respondents gave vague interpretations.

I think it's about outdoor things... like hiking and seeing nice view (Interview Respondent CM3).

It has to do with nature, but I think it's just going to places like Victoria Falls (Interview Respondent CM2).

Such unclear responses suggest possible knowledge gaps or limited engagement with ecotourism definitions. According to Robertson and Watts (2016), understanding and participation in tourism often depend on individuals' connection to and involvement with natural settings. Still, the overall responses largely affirmed a consensus around nature-based tourism being rooted in biodiversity-focused experiences.

Impacts of Activities on Wildlife

Evidence from the study highlights ecotourism activities have a number of impacts. Such sentiments can be captured in the narratives provided below:

(Respondent PA1) mentioned that walking safaris, trips on the Zambezi River, and guided rides are ways to introduce guests to the wildlife in the park. Similarly,

(Respondent CM1) explained that nature walks, boat trips, and animal and river viewing make up a big part of the tourist experience.

They show that experiencing wildlife plays an important role in ecotourism in Mana Pools. However, although tourists come and spend increases, these activities can harm the park's biodiversity. After studying this as a university student, I understand that landscapes that are used for ecotourism can still interfere with animal behavior, damaging their habitats.

Uncontrolled tourism can lead to habitat disturbance, excessive noise, and long-term landscape degradation, according to Chigwanda and Mutasa (2021). These results support the respondents' observations and emphasize how important it is to keep an eye on and control how visitors interact with wildlife. Ecotourism aims to preserve the environment, but it also exposes it to human activity regularly, which presents a difficult management problem.

This theme exemplifies the fundamental contradiction of ecotourism: it seeks to preserve nature while necessitating close proximity to it. Therefore, to make sure that tourism pressure doesn't compromise conservation goals, efficient oversight and conscientious visitor behavior are essential.

Types of Ecotourism Activities Available

Some of the activities suggested by the respondents were walking safaris, canoeing, game drives, bird watching, nature walks, photographic safaris, cultural exchanges, and fishing. These activities involve both types of tourism, consumptive and non-consumptive. Respondent PA1 pointed out canoeing and game drives, and respondent CM2 mentioned camping and fishing.

The park's biodiversity draws in visitors from many different fields of ecotourism. According to Nyathi and Mlambo (2024), more activities for tourists can make both visitors and the economy happier, but these activities must be checked by environmental assessments to keep the environment safe.

ENVIRONMENTAL IMPACTS OF ECOTOURISM ACTIVITIES IN NATIONAL PARKS IN ZIMBABWE

The researchers assessed the environmental impacts of ecotourism activities being conducted in Zimbabwe's national parks, with a specific focus on Mana Pools National Park. The guiding research question was: Do ecotourism activities affect local wildlife or biodiversity, and if so, how? Based on responses from both park authorities and community members, several themes emerged, namely: impacts of activities on wildlife, ecotourism activities responsible for affecting wildlife, effects on wildlife behavior, impacts on habitat integrity, impacts on biodiversity, and positive environmental contributions of ecotourism. Before delving into these themes, it is essential to acknowledge that respondents generally understood the principle of ecotourism, identifying it as a form of tourism that emphasizes the conservation of biodiversity and responsible enjoyment of nature. However, their insights revealed growing concerns about unintended environmental consequences resulting from ecotourism activities.

Some disturbances occur, especially with increased human presence near nesting or breeding sites. Sometimes the noise from boats or vehicles scares away birds or animals (Interview Respondent PA6).

Occasionally, animals change their movement patterns due to frequent tourist visits (Interview Respondent PA7).

We have seen some areas where plants get trampled because visitors don't always stay on paths (Interview Respondent CM7)

These comments reflect a shared concern that ecotourism, while beneficial in many ways, can disrupt local wildlife and ecosystems if not managed effectively. Disturbances such as noise pollution, trampling of vegetation, and increased human-wildlife interaction were frequently mentioned as threats to biodiversity. Such findings support existing literature, which suggests that without proper regulation, even environmentally focused tourism can pose ecological risks (Chigwanda & Mutasa, 2021). Respondents also identified specific activities that tend to have greater environmental impacts.

Canoeing and walking safaris, if not well managed, can disturb hippos and elephants along the riverbanks. Camping in the wrong places sometimes leaves waste that harms animals (Interview Respondent PA1).

Game drives off established tracks can damage fragile vegetation (Interview Respondent PA2)

Fishing tours occasionally affect fish populations if regulations are not followed (Interview Respondent CM2).

These examples indicate that although ecotourism promotes appreciation of wildlife, certain high-contact activities, particularly those conducted without strict supervision, can result in habitat degradation, behavioral shifts in animals, and pollution. Literature supports these concerns, noting that increased tourist activity in sensitive areas can lead to erosion, litter accumulation, and disturbance of breeding or feeding sites (Buckley, 2020)

Respondents further elaborated on how ecotourism activities affected wildlife behavior and habitat integrity:

Animals may become habituated to humans, which can increase risks from poaching or conflicts. We notice animals coming closer sometimes, but others run away faster (Respondent PA3).

Some species avoid busy tourist spots, altering their natural feeding or breeding behaviors (Respondent PA4).

Trampling of vegetation near trails is a concern and requires ongoing management (Respondent PA5).

Despite these negative impacts, some respondents acknowledged positive environmental outcomes of ecotourism. They emphasized that tourism has helped fund conservation efforts, increased awareness, and supported community-led environmental initiatives.

Ecotourism has raised funding for anti-poaching patrols and habitat rehabilitation (Respondent PA2).

Tourists' presence discourages illegal activities like poaching and logging (Interview Respondent PA3).

The community understands better the importance of protecting wildlife because of visitors (Respondent CM6).

Tourism income helps us plant trees and clean rivers (Respondent CM7).

According to the aforementioned, ecotourism in Mana Pools presents environmental risks that need to be properly managed even though it also provides significant environmental benefits like increased funding for conservation and increased community awareness. To guarantee that ecotourism fulfills its stated purpose of sustainable conservation, effective regulation, ongoing environmental monitoring, and public education are crucial.

The following sub-themes provide an in-depth analysis of the key environmental impacts reported by park authorities and community members, contextualized within relevant academic literature.

Disruption of Wildlife Behavior

Respondents consistently noted behavioral shifts among animals due to frequent human presence. PA3 stated,

Animals may become habituated to humans, which can increase risks from poaching or conflicts.

CM3 added,

We notice animals coming closer sometimes, but others run away faster.

Such changes reflect both attraction and aversion responses, suggesting inconsistent animal reactions to ecotourism pressures.

Habituation may compromise wildlife safety by lowering their wariness around poachers or vehicles (Neumann, 2021). Conversely, avoidance behaviors can disrupt feeding or breeding routines, especially in migratory or territorial species (Karp, 2015). Respondent PA4 highlighted this concern:

Some species avoid busy tourist spots, altering their natural feeding or breeding behaviors.

The responses as a whole point to a shared worry: that the increased human presence brought about by ecotourism is gradually but significantly changing the natural behaviors of animals. Some species become increasingly elusive, indicating stress or displacement, while others become too accustomed to humans, possibly putting themselves in danger. These alterations in behavior indicate an ecological imbalance in which wildlife is being compelled to adapt in ways that might be harmful to the ecosystem's long-term health as well as to their own survival. In the end, even though ecotourism seeks to live in harmony with the natural world, if it is not properly controlled, it may unintentionally disturb wildlife habits.

Habitat Degradation

Multiple participants identified direct physical impacts on the park's habitat. Respondent PA5 noted, "*Trampling of vegetation near trails is a concern and requires ongoing management,*" while Respondent CM4 observed that paths can get worn out, leading to soil erosion. In riverine zones, boat works can erode riverbanks if routes are not controlled.

This set of responses points to a shared concern: despite ecotourism's professed intention to promote sustainable interaction with nature, it is unintentionally destroying basic ecological features. These effects, particularly trail erosion and riverbank instability, demonstrate how unchecked visitor movement can directly affect terrestrial and aquatic systems. The respondents' emphasis on trail wear and erosion suggests that current usage patterns are surpassing the park's natural resilience thresholds.

Such deterioration is consistent with research by Mbaiwa (2017), who highlights how uncontrolled trail use and water-based tourism frequently hasten ecological deterioration in delicate systems. The combined effects of these activities endanger not only the health of the flora and fauna but also the long-term viability of the ecotourism infrastructure itself.

Declines in Biodiversity

Though some participants expressed optimism about biodiversity trends, many acknowledged risks linked to excessive or poorly regulated tourism. Respondent PA1 remarked that, "*Sensitive species may reduce in numbers if disturbed too frequently,*" These concerns align with studies by

Buckley (2020), which observed that ecotourism, when improperly managed, can lead to a decline in local biodiversity through species displacement, pollution, or invasive species introduction. While Respondent PA7 noted that *“biodiversity remains stable,”* this was accompanied by the caution that monitoring is essential to detect any declines early.

Positive Environmental Externalities

Despite the risks, participants also reported several environmentally beneficial outcomes of ecotourism. Respondent PA2 shared, *“Ecotourism has raised funding for anti-poaching patrols and habitat rehabilitation,”* and Respondent PA3 added, *“Tourists’ presence discourages illegal activities like poaching and logging.”* Community members echoed these sentiments, with Respondent CM6 noting, *“The community understands better the importance of protecting wildlife because of visitors.”*

The above voices confirm the findings of Stronza and Durham (2020), who observe that ecotourism can serve as a non-extractive use of biodiversity, financing conservation and fostering community stewardship. However, the realization of these benefits is contingent upon robust institutional support, equitable revenue distribution, and continuous environmental education.

STRATEGIES TO MINIMISE THE NEGATIVE IMPACTS OF ECOTOURISM ACTIVITIES IN ZIMBABWE'S NATIONAL PARKS.

This section explores existing management strategies and proposes additional measures for improving the sustainability of ecotourism in Mana Pools National Park. While ecotourism has brought notable benefits such as increased conservation funding, environmental awareness, and community engagement, interview responses revealed persistent environmental challenges that require more proactive and coordinated solutions.

Respondents acknowledged several strategies currently in place to address ecotourism’s negative environmental impacts. These included regulatory mechanisms, staff oversight, and community-based interventions. According to PA4, *“We conduct regular environmental impact assessments and have rangers monitoring visitor behavior.”* Highlighting ongoing efforts to mitigate on-site damage, PA5 elaborated that, *“Visitor numbers are limited through permits and there are strict rules enforced by park staff,”* emphasizing the role of controlled access.

Local communities also participate in the enforcement process. CM3 noted, *“Local guides educate tourists about staying on paths and respecting wildlife,”* while CM4 added, *“Communities report any signs of damage to authorities quickly.”* These grassroots efforts suggest a shared responsibility model between park authorities and community members.

However, the effectiveness of these measures varies. PA6 observed, *“They have helped reduce major disturbances but need constant review and community cooperation.”* CM5 echoed this sentiment: *“Most tourists follow rules now, but a few still cause damage.”* This indicates that while regulatory and educational strategies have had a measurable positive effect, compliance gaps and growing visitor numbers pose ongoing threats. PA7 noted, *“Some areas show recovery, but increased visitor numbers can strain resources,”* pointing to the limits of current capacity.

Despite the challenges, several respondents expressed optimism about the long-term sustainability of ecotourism when strategic coordination is maintained. PA1 argued, *“They are effective when well implemented but require ongoing funding and awareness programs.”* Similarly, CMI emphasized, *“If we all work together, the environment and people can benefit,”* underscoring the need for cooperative conservation models that integrate multiple stakeholders.

Recommendations focused on long-term sustainability and broader systemic change. Respondent PA5 mentioned, *“Building stronger partnerships with international conservation groups could improve resources,”* while Respondent PA6 stressed the need for integrated planning.

STRATEGIES FOR MINIMIZING ENVIRONMENTAL IMPACTS OF ECOTOURISM

As ecotourism continues to grow in popularity, Mana Pools National Park faces the challenge of preserving ecological integrity while supporting sustainable tourism. The findings of this study reveal a mix of proactive conservation strategies and persistent challenges that require adaptive, community-centered solutions. Drawing from both participant perspectives and scholarly literature, this section explores existing and proposed strategies to mitigate the environmental footprint of ecotourism.

Role of Education and Guiding in Impact Reduction

PA2 argued that long-term success depends on collaboration between park authorities, communities, and tourists. Education becomes the pillar towards the fulfillment of this

collaboration. Through greater awareness among tourists and locals, education encourages a shared sense of responsibility and allows stakeholders to define their role in minimizing ecological footprints. Environmental education programs have the potential to bridge the gap between indigenous knowledge and modern conservation strategies, hence encouraging sustainable livelihoods consistent with ecotourism objectives for local communities. To visitors, interpretive and quality guiding services make a visit to a mere experience an active learning experience, instilling environmentally conscious behavior extending beyond the park ecosystem. Education and guiding, therefore, become not only the direct impact reduction measures but also long-term investments in the conservationist attitude development. Such a knowledge-attitude-practice synergy is critical to long-term and sustainability of ecotourism operations.

Gaps in Strategy and Need for Improvement

Participants expressed concerns over existing gaps in regulation and enforcement. PA3 recommended, *“Introduce stricter limits on visitor numbers during sensitive seasons like breeding.”* PA4 pointed at the need to enhance community involvement in decision-making and benefit-sharing, suggesting that current strategies may lack adequate inclusivity.

Respondent CM4 emphasized, *“Increase waste management and create more designated camping areas,”* highlighting infrastructural limitations that exacerbate ecological damage. According to Dlamini and Nkomo (2021), the success of ecotourism hinges on the provision of appropriate infrastructure and services, including waste disposal and zoning for human activities.

These recommendations suggest a need for adaptive management—a strategy that allows for flexible policy-making informed by real-time ecological feedback (Nyakunu & Gandiwa, 2020). Without periodic review and localized input, existing conservation strategies may fall short in addressing evolving ecological pressures.

Strategic Partnerships and Community Empowerment

Many of the participants called for a more comprehensive way to manage environmental matters. The report advised that closer bonds with external conservation organizations help gain access to resources and professional experience. The resolution added that tourism should always consider our culture and its connection to the environment. In addition, respondent PA6 underlined that more work is needed to understand the links between climate change effects and challenges arising

from tourism. Giving opportunities to local groups was always mentioned. Respondent CM5 noted: *“Communities often say they want to become more involved and enjoy better benefits.”* This result corresponds with the view of Chigonda and Mudzengi (2021), who emphasize that environmental governance should combine community knowledge, worldwide links, and greater inclusion of climate topics in tourism policies.

Mana Pools can move towards a more resilient and equitable conservation model by fostering cross-sector collaboration and embedding ecotourism within broader socio-ecological frameworks.

CONCLUSION

The study revealed that while ecotourism in Zimbabwe’s national parks, particularly Mana Pools, generates revenue for conservation and promotes environmental awareness, it also threatens ecosystems through habitat disturbance and biodiversity stress. Although management measures such as visitor regulation and community participation are in place, they remain inadequate against growing tourism pressures. Ecotourism therefore requires more effective ecological monitoring, equitable benefit-sharing, and adaptive management that incorporates science and local expertise. Only by means of such holistic approaches can ecotourism fulfill its potential for supporting biodiversity conservation and the well-being of the community.

RECOMMENDATIONS

Informed by the empirical findings, the following recommendations are advanced:

- i. **Policy Enforcement and Capacity Building:** There is a pressing need for national parks to implement and rigorously monitor visitor carrying capacity limits. Park authorities should also be capacitated with adequate funding, personnel, and training to enforce conservation policies effectively.
- ii. **Ecotourism Certification Systems:** Zimbabwe should develop a national ecotourism certification framework, modeled after successful programs like Costa Rica’s Certification for Sustainable Tourism (CST). Certification would ensure that tour operators meet minimum environmental and ethical standards.

- iii. **Strengthening Community Participation:** Local communities must be treated as equal stakeholders in ecotourism governance. Mechanisms for inclusive planning, transparent benefit-sharing, and community-led monitoring should be institutionalized.
- iv. **Environmental Education Campaigns:** Tourists and local residents alike require continuous education on the ecological sensitivities of protected areas. Awareness campaigns should be culturally appropriate and leverage various media platforms.
- v. **Climate Resilience Planning:** Given the increasing pressures of climate change, conservation strategies must incorporate climate adaptation and disaster risk reduction measures. This includes monitoring changes in species distribution and habitat vulnerability due to shifting climate patterns.
- vi. **Infrastructure Development:** Investment in low-impact infrastructure, such as eco-lodges, solar-powered facilities, and sustainable transport systems, is necessary to align tourism development with conservation goals.
- vii. **Research-Driven Decision Making:** Environmental impact assessments should be conducted periodically, with findings used to inform policy revisions and on-ground interventions.

AREAS FOR FURTHER STUDY

While this study has provided critical insights into the environmental impacts of ecotourism in Zimbabwe's national parks, particularly Mana Pools, it has also illuminated several areas where further research is necessary to deepen our understanding and improve ecotourism sustainability. The complexity of ecotourism systems, their environmental interfaces, and the evolving socio-political landscape of conservation demand continued scholarly engagement. The following areas are recommended for future study: **Comparative Analysis Across National Parks.** s another area for further study is a comparative study between multiple national parks in Zimbabwe, such as Hwange, Gonarezhou, and Matobo—could highlight spatial differences in ecotourism management and environmental outcomes. This would help identify context-specific challenges and scalable best practices. Moreover, comparative research across Southern African countries (e.g., Kenya, Botswana, Namibia) could offer valuable regional benchmarks and collaborative policy opportunities.

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