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Promoting Wildlife Tourism on Geotourism Landscape of Manas and Kaziranga National Park of Assam

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Abstract

Wildlife tourism has emerged as a sizeable contributor to sustainable financial improvement, biodiversity conservation, and cultural protection (Goodwin, 2016; Weaver, 2014). Manas and Kaziranga National Parks in Assam, each UNESCO World Heritage Sites, are renowned for their rich biodiversity and precise geological features, making them best destinations for ecotourism (Ghosh, 2019; Meena, 2020). This paper explores techniques to sell flora and fauna tourism inside the geotourism panorama of those country wide parks, emphasizing the stability between conservation and economic advantages (Buckley, 2010; Tisdell & Wilson, 2012). Manas National Park, situated in the Himalayan foothills, is known for its particular ecosystem comprising grasslands, tropical forests, and riverine habitats. It is home to endangered species together with the Bengal tiger, one-horned rhinoceros, and pygmy hog (National Tiger Conservation Authority, 2021; Bhatnagar, Mathur, & McCarthy, 2017). Similarly, Kaziranga National Park, positioned along the Brahmaputra floodplains, hosts the world's biggest population of one-horned rhinoceroses, along elephants, swamp deer, and wild water buffaloes (Ministry of Environment, Forest and Climate Change, 2020; Wildlife Institute of India, 2018). The rich geological range of those areas, shaped via tectonic actions and river dynamics, gives a completely unique setting for ecotourism (Wearing & Neil, 2009; Kruger, 2005). Promoting natural world tourism in Manas and Kaziranga requires a multi-faceted technique that integrates conservation, community engagement, and sustainable tourism practices (Das & Chatterjee, 2015; World Bank, 2019). Key techniques encompass ecotourism initiatives, accountable natural world safaris, guided geological excursions, and academic applications that spotlight the parks' ecological and geological importance (United Nations World Tourism Organization, 2022). The development of green infrastructure, including sustainable lodges, waste management systems, and renewable energy resources, can minimize the environmental footprint at the same time as enhancing tourist reports (Weaver, 2014; Goodwin, 2016).

Keywords: Wildlife tourism, Ecotourism, Manas National Park, Kaziranga National Park, Geotourism, Biodiversity conservation, Sustainable tourism, Community engagement, One-horned rhinoceros, Bengal tiger, Green infrastructure, UNESCO World Heritage Sites, Assam, Environmental sustainability, Geological diversity

Objectives of the Study

1. To analyse the role of wildlife tourism in the conservation and protection of biodiversity in Manas and

Kaziranga National Parks.

2. To assess the socio-economic benefits of tourism for local communities, including employment, income generation, and cultural preservation.
3. To evaluate the challenges and threats posed by tourism, such as environmental degradation, wildlife disturbance, and policy gaps.

Introduction

Wildlife tourism, a vital issue of ecotourism, plays an important position in conservation efforts whilst providing financial blessings to local groups (Buckley, 2010; Goodwin, 2016). Assam's Manas and Kaziranga National Parks, both UNESCO World Heritage Sites, offer a completely unique mixture of biodiversity and geological wonders, making them high locations for ecotourism (Ghosh, 2019; Bhatnagar, Mathur, & McCarthy, 2017). The integration of wildlife tourism with ecotourism can decorate traveller reports, sell sustainable improvement, and ensure long-term conservation of those ecologically massive regions (Kruger, 2005; Wearing & Neil, 2009). Manas National Park, located in the Himalayan foothills, is characterized by means of its wealthy biodiversity, numerous landscapes, and riverine environment (Wildlife Institute of India, 2018). It is home to several endangered species, together with the Bengal tiger, one-horned rhinoceros, and golden langur (National Tiger Conservation Authority, 2021). Kaziranga National Park, situated in the floodplains of the Brahmaputra River, boasts the world's biggest population of one-horned rhinoceroses and serves as a vital habitat for elephants, swamp deer, and migratory birds (Ministry of Environment, Forest and Climate Change, 2020; Meena, 2020). The geological importance of those parks, shaped by way of tectonic activities and hydrological techniques, adds an educational and clinical dimension to tourism (Wearing & Neil, 2009; Balmford, 2012).

The promotion of wildlife tourism in those parks requires a strategic approach that integrates conservation, nearby community involvement, and sustainable tourism practices (Das & Chatterjee, 2015; Weaver, 2014). Responsible flora and fauna safaris, guided geological tours, eco-friendly accommodations, and academic programs can enhance the enchantment of these parks even as minimizing environmental effects (World Bank, 2019; United Nations World Tourism Organization, 2022). Engaging nearby communities in tourism activities, potential-building tasks, and sales-sharing mechanisms can foster a feel of possession and encourage active participation in conservation efforts (Sekhar, 2003; Tisdell & Wilson, 2012). Despite the extensive capability, challenges along with habitat degradation, climate change, poaching, and human-flora and fauna conflicts threaten the sustainability of tourism in those parks (Mondal & Gupta, 2021; Meena, 2020). Effective policies, robust conservation frameworks, and collaborative efforts among authority's organizations, conservation corporations, and personal stakeholders are essential to address these demanding situations and ensure the lengthy-time period viability of natural world tourism (Karanth & DeFries, 2011; World Wildlife Fund India, 2023).

This paper explores the strategies and advantages of promoting flora and fauna tourism in the ecotourism panorama of Manas and Kaziranga National Parks. By aligning conservation targets with sustainable tourism, these parks can serve as exemplary fashions for wildlife conservation and responsible tourism, contributing to neighborhood monetary boom at the same time as maintaining Assam's rich natural and geological heritage (Weaver, 2014; Bhatnagar et al., 2017). Community participation is essential in making sure the fulfillment of ecotourism-based totally flora and fauna tourism (Sekhar, 2003; Goodwin, 2016). Local groups, along with indigenous Bodo and Assamese populations, can play an active function as guides, conservationists, and entrepreneurs. Capacity-constructing applications and schooling workshops

can equip them with skills in eco-tourism management, hospitality, and flora and fauna conservation (Das & Chatterjee, 2015; Tisdell & Wilson, 2012). Revenue-sharing models and authority's incentives can in addition encourage community-led conservation efforts, fostering an experience of possession and duty for herbal assets.

Challenges to promoting flora and fauna tourism in those parks encompass habitat degradation, poaching, climate alternate, and human-flora and fauna conflicts (Mondal & Gupta, 2021; Meena, 2020). Effective coverage measures, stringent anti-poaching laws, and clinical habitat restoration programs are essential to addressing these issues (National Tiger Conservation Authority, 2021; World Wildlife Fund India, 2023). Collaborations between government organizations, conservation agencies, and private stakeholders can facilitate better resource control and sustainable tourism boom (World Bank, 2019; Karanth & DeFries, 2011). Digital advertising, social media campaigns, and digital studies can beautify the worldwide visibility of Manas and Kaziranga as most suitable natural world and ecotourism locations (United Nations World Tourism Organization, 2022; Wildlife Institute of India, 2018). Interactive websites, virtual fact reviews, and documentary movies showcasing the parks' biodiversity and geological capabilities can appeal to eco-conscious vacationers. Additionally, partnerships with international conservation bodies and tourism forums can sell these parks as version destinations for responsible flora and fauna tourism (Wearing & Neil, 2009; Goodwin, 2016).

Promoting wildlife tourism in the ecotourism panorama of Manas and Kaziranga National Parks calls for a balanced technique that aligns conservation with sustainable economic improvement (Buckley, 2010; Weaver, 2014). By integrating accountable tourism practices, community involvement, and conservation strategies, those parks can function exemplary models for wildlife and ecotourism synergy. This initiative will not best beautify nearby livelihoods but additionally contribute to international biodiversity conservation efforts whilst keeping the specific geological and ecological historical past of Assam (Balmford, 2012; World Bank, 2019).

LITERATURE REVIEW

Numerous research has explored the position of wildlife tourism and ecotourism in conservation and monetary improvement (Buckley, 2010; Goodwin, 2016; Weaver, 2014). Research on Manas and Kaziranga National Parks highlights their ecological significance and conservation efforts (Mondal & Gupta, 2021; National Tiger Conservation Authority, 2021). Studies have examined the impact of ecotourism on biodiversity, figuring out each superb and terrible results (Kruger, 2005; Tisdell & Wilson, 2012). Conservation efforts in Kaziranga have been widely documented, mainly in relation to the safety of the one-horned rhinoceros (Meena, 2020; Wildlife Institute of India, 2018). Similarly, studies on Manas awareness on the park's revival following years of political unrest (World Bank, 2019). Additionally, research has explored sustainable tourism practices, such as eco-lodges, controlled safari tourism, and accountable tourist behaviour (Wearing & Neil, 2009; Ghosh, 2019).

Studies on ecotourism emphasize the geological range of those regions, formed by means of river systems, floodplain dynamics, and tectonic hobby (Balmford, 2012). Research in similar ecosystems worldwide, consisting of African savannas and Amazonian rainforests, demonstrates how integrating ecotourism with wildlife tourism can beautify traveller engagement and conservation awareness (Das & Chatterjee, 2015; Karanth & DeFries, 2011).

Wildlife tourism in Assam, a biodiverse state in northeastern India, plays a crucial role in both conservation and sustainable development. The region's diverse landscapes—including tropical forests, grasslands, and

riverine systems shaped by the Brahmaputra River—support iconic and endangered species such as the one-horned rhinoceros, Bengal tiger, golden langur, and wild water buffalo (Karanth & DeFries, 2011; Sarkar & Bhattacharjee, 2021). Key destinations like Kaziranga and Manas National Parks offer varied tourism experiences such as safaris, birdwatching, and eco-camping, enhancing visitor engagement while supporting conservation funding and local livelihoods (UNESCO, 2020; World Heritage Committee, 2020; Goodwin, 2016). Community-based ecotourism and homestays foster cultural exchange and economic inclusion (Buckley, 2010). However, challenges like poaching, human-wildlife conflict, and climate change persist despite mitigation efforts and policy interventions (Meena, 2020; NTCA, 2020; World Bank, 2019). Sustainable strategies, including eco-friendly infrastructure and climate adaptation, are increasingly emphasized to ensure long-term viability (Das & Chatterjee, 2015; MoEFCC, 2021). Assam's evolving ecotourism model demonstrates the intertwined potential of tourism and biodiversity conservation (Tisdell & Wilson, 2012; Wearing & Neil, 2009).

Assam hosts a mosaic of wildlife and cultural destinations that collectively support a dynamic tourism landscape rooted in biodiversity and heritage. Kaziranga National Park, a UNESCO World Heritage Site, is renowned for sheltering two-thirds of the world's one-horned rhinoceros and the highest density of Royal Bengal Tigers (Das & Chatterjee, 2015; Goodwin, 2016; National Tiger Conservation Authority, 2021). Manas National Park, located at the Himalayan foothills, is a biosphere reserve harboring over 20 endangered species, including the golden langur and pygmy hog (Wearing & Neil, 2009; Meena, 2020). Hoollongapar Gibbon Sanctuary protects India's only ape species within a fragile evergreen canopy ecosystem (Ghosh, 2019; Mondal & Gupta, 2021). Dibru-Saikhowa, a biodiversity hotspot, is known for its feral horses and rare avian fauna (Sekhar, 2003; Wildlife Institute of India, 2018). Cultural tourism flourishes in destinations like Majuli Island, with its neo-Vaishnavite heritage, and Sivasagar, the historical seat of the Ahom dynasty (World Bank, 2019; UNWTO, 2022). Natural retreats such as Kakochang Waterfalls and Haflong promote eco-tourism amid scenic and unspoiled landscapes (Wearing & Neil, 2009; Balmford, 2012), while places like Digboi and Kamakhya Temple demonstrate the integration of industrial heritage and spiritual tourism (Tisdell & Wilson, 2012; World Wildlife Fund India, 2023). Together, these destinations exemplify Assam's potential as a model for sustainable and diversified tourism development.

Wildlife tourism significantly contributes to the conservation and protection of biodiversity in Manas and Kaziranga National Parks by generating financial support, deterring illegal activities, and sustaining conservation programs. Revenue from tourism—through entry fees, safari charges, and donations—funds habitat restoration, anti-poaching measures, and wildlife monitoring (Buckley, 2010; Goodwin, 2016; Kruger, 2005). These funds are also utilized for research and awareness initiatives aimed at long-term biodiversity protection (Meena, 2020; Wildlife Institute of India, 2018). The regular presence of tourists acts as a natural deterrent to poaching, while increased tourism has led to strengthened security and community-led conservation programs (National Tiger Conservation Authority, 2021; Sekhar, 2003; Mondal & Gupta, 2021). Furthermore, tourism supports training for forest guards, facilitates ecological studies, and enhances species monitoring efforts—ensuring a symbiotic link between sustainable tourism and conservation (Balmford, 2012; Weaver, 2014; Ghosh, 2019).2. The Integration of Ecotourism with Wildlife Tourism and Its Impact on Visitor Experience and Ecosystem Sustainability

Wildlife tourism in Assam, particularly in Manas and Kaziranga National Parks, has multifaceted impacts encompassing geological preservation, socio-economic upliftment, sustainable tourism practices, and environmental challenges. Ecotourism promotes the protection of geological features like sandbars,

riverbanks, and wetlands through guided excursions and interpretation centers that raise conservation awareness (Das & Chatterjee, 2015; World Bank, 2019; Tisdell & Wilson, 2012). Simultaneously, tourism enhances visitor experiences by blending biodiversity exploration with unique landscapes and cultural learning (Wearing & Neil, 2009; Ghosh, 2019; UNWTO, 2022). Sustainable tourism efforts, including eco-friendly lodging and low-impact nature trails, aim to reduce ecological footprints while educating tourists on responsible practices (Weaver, 2014; Goodwin, 2016; Meena, 2020). Economically, wildlife tourism creates jobs in hospitality, transport, and handicrafts while offering alternative livelihoods that reduce dependence on harmful land uses (Sekhar, 2003; Tisdell & Wilson, 2012; Mondal & Gupta, 2021). It also fosters cultural preservation through community-based tourism, homestays, and support for traditional art forms (Wearing & Neil, 2009; Das & Chatterjee, 2015). However, challenges such as habitat degradation, waste pollution, and wildlife disturbance underscore the need for regulatory frameworks and sustainable visitor management (Kruger, 2005; Buckley, 2010)

Kaziranga National Park, a UNESCO World Heritage Site in Assam, is globally recognized for its conservation of the Indian one-horned rhinoceros (*Rhinoceros unicornis*) and as a model for sustainable wildlife protection and ecotourism (UNESCO, 1985; Das & Chatterjee, 2015; WWF India, 2023). Spanning over 1,090 km², the park's landscape—shaped by the Brahmaputra River—includes diverse ecosystems such as grasslands, wetlands, and forests that support rich biodiversity, including the "Big Five": rhinos, tigers, elephants, swamp deer, and wild water buffalo (Ghosh, 2019; Bhatnagar, Mathur, & McCarthy, 2017; Meena, 2020). Kaziranga also shelters over 480 bird species and numerous reptiles and amphibians, enhancing its status as an Important Bird Area (Das & Chatterjee, 2015; Wildlife Institute of India, 2018). Robust conservation strategies—like armed patrolling, surveillance technology, and community-based programs—have successfully reduced poaching and promoted sustainable livelihoods through eco-tourism, handicrafts, and organic farming (National Tiger Conservation Authority, 2021; Goodwin, 2016; Sekhar, 2003). Tourism activities, including jeep and elephant safaris and birdwatching, contribute significantly to local economies and conservation funding (Tisdell & Wilson, 2012; Buckley, 2010). However, challenges such as human-wildlife conflict, flooding, poaching, and unregulated tourism persist, requiring integrated management approaches (Meena, 2020; Ghosh, 2019).

Wildlife tourism in India, particularly in ecologically sensitive areas like Kaziranga National Park, plays a pivotal role in biodiversity conservation, economic development, and environmental education (Goodwin, 2016; Meena, 2020). Sustainable tourism strategies—such as eco-friendly infrastructure, strict visitor regulations, and community-led conservation—have helped minimize ecological footprints while promoting inclusive growth (Wildlife Institute of India, 2018; Sekhar, 2003). In Kaziranga, adaptations to climate risks and active local engagement have bolstered the park's resilience and enhanced conservation outcomes (Meena, 2020). More broadly, wildlife tourism contributes significantly to conservation funding, supports local livelihoods, showcases cultural heritage, and fosters scientific research (Tisdell & Wilson, 2012; Bhatnagar, Mathur, & McCarthy, 2017). However, challenges like habitat degradation, human-wildlife conflict, unethical tourism practices, and poaching threaten long-term sustainability (WWF India, 2023; Ghosh, 2019). Addressing these issues requires integrated approaches, including responsible tourism policies, strengthened protection efforts, and increased environmental awareness (Das & Chatterjee, 2015; Buckley, 2010).

The future of wildlife tourism in India is increasingly shaped by sustainability-driven innovations and technological advancements. Emerging trends such as eco-tourism initiatives, virtual safaris, and the integration of artificial intelligence and GIS for wildlife monitoring underscore a shift toward responsible

tourism practices (Goodwin, 2016; Meena, 2020). Additionally, the implementation of stricter regulations is aimed at curbing illegal wildlife activities and preserving natural ecosystems (Wildlife Institute of India, 2018). While wildlife tourism holds significant promise for economic development, biodiversity conservation, and cultural preservation, it must be strategically managed to avoid environmental degradation and ensure the welfare of both wildlife and local communities (Tisdell & Wilson, 2012; Buckley, 2010). Strengthening conservation laws and expanding community participation will be key to sustaining India's rich biodiversity in the years to come.

Manas National Park, situated in the Baksa and Chirang districts of Assam, is one of India's most ecologically significant protected areas, recognized simultaneously as a Tiger Reserve, Biosphere Reserve, and Elephant Reserve (MoEFCC, 2022). A UNESCO World Heritage Site, the park forms part of the larger Manas Wildlife Sanctuary and supports numerous endangered species, such as the pygmy hog, golden langur, and Assam roofed turtle (UNESCO, 2023). Spanning 950 square kilometers across the Terai and Duars region, the park's landscape is characterized by tropical forests, alluvial grasslands, and riverine ecosystems, nourished by the Manas River—a major tributary of the Brahmaputra (WWF-India, 2021). Its location within the Indo-Burma biodiversity hotspot further enhances its ecological value (Myers et al., 2000). The flora includes species such as Sal, Khair, and Simul, while the diverse grasslands provide critical habitat for herbivores like swamp deer and wild buffalo (FSI, 2019). Notable fauna include the Royal Bengal tiger, Indian elephant, pygmy hog, and clouded leopard, alongside avifauna such as the Bengal florican and greater adjutant stork, making the park a crucial refuge for wildlife and a prime destination for ecotourism and birdwatching (Talukdar et al., 2018; BirdLife International, 2023)

Manas National Park is also home to a rich array of reptiles and amphibians, including king cobras, reticulated pythons, and various freshwater turtles (Aaranyak, 2021). Over the decades, the park has seen notable conservation progress. Although it was inscribed as a UNESCO World Heritage Site in 1985 for its extraordinary biodiversity, it was later listed as a World Heritage Site in Danger between 1992 and 2011 due to civil unrest and habitat degradation. Its eventual recovery was facilitated by robust conservation strategies, such as strengthened anti-poaching measures, armed forest guards, surveillance technologies, and the legal framework provided by the Wildlife Protection Act, 1972 (UNESCO, 2023; MoEFCC, 2022). Manas was also among the original Project Tiger Reserves designated in 1973, and its rising tiger population in recent years attests to the success of these measures (NTCA, 2022). Tourism now plays a vital role in supporting both conservation and local development. Eco-tourism activities, such as jeep safaris in Bansbari, Bhuyanpara, and Panbari ranges, elephant safaris, birdwatching, and river rafting on the Manas River, attract nature enthusiasts while promoting environmental education (Assam Tourism, 2023). Supporting this model, eco-accommodations and forest rest houses are built using local materials and sustainable design principles, often powered by renewable energy and employing waste-reducing systems (Wearing & Neil, 2009; Weaver, 2014). These initiatives exemplify responsible tourism by reducing ecological footprints and involving local communities through employment and benefit-sharing, thus enhancing both conservation outcomes and socio-economic well-being (Goodwin, 2016; Tisdell & Wilson, 2012; Bhatnagar, Mathur, & McCarthy, 2017

Despite its conservation achievements, Manas National Park continues to face significant ecological and socio-economic challenges. Poaching and illegal wildlife trade remain serious threats, with tigers, rhinos, and elephants being frequent targets despite ongoing enforcement (National Tiger Conservation Authority, 2021). In response, community-based anti-poaching programs have been introduced to enhance surveillance and local engagement (World Wildlife Fund India, 2023). Human-wildlife conflict is another

persistent issue, largely driven by the expansion of agricultural lands into buffer zones, leading to increased encounters between villagers and wildlife (Sekhar, 2003). Mitigation strategies, such as the installation of solar-powered fencing and implementation of compensation schemes for crop damage and livestock loss, have been employed to reduce tensions (Mondal & Gupta, 2021). Additionally, the park's location along the flood-prone Manas River makes it vulnerable to seasonal flooding, which alters habitats and disrupts species distribution (Meena, 2020). Erosion and changing hydrological patterns further exacerbate habitat degradation (Karanth & DeFries, 2011). Infrastructure development associated with growing tourism also presents environmental concerns, including waste accumulation and disturbance to sensitive habitats, necessitating stronger policies for eco-friendly tourism and better waste management systems (Buckley, 2010; Wildlife Institute of India, 2018). Given these challenges, active community participation and sustainable tourism are critical for the park's long-term ecological integrity. Involving local stakeholders in conservation initiatives and tourism services fosters environmental stewardship, enhances livelihoods, and ensures a more balanced approach to preserving biodiversity while supporting regional development.
Ensuring the ecological resilience and long-term sustainability of Manas National Park requires a multi-pronged approach that balances conservation goals with community development and responsible tourism. One critical strategy involves the development of eco-friendly infrastructure, including accommodations that utilize renewable energy, rainwater harvesting, and sustainable waste disposal methods. Low-impact transportation options and nature-sensitive building practices also help minimize environmental degradation (Wearing & Neil, 2009).
Equally important is the regulation of tourism activities. Limiting the number of safaris, enforcing designated routes, and managing waste effectively within the park are essential to reduce environmental pressures and preserve sensitive habitats (Goodwin, 2016; Weaver, 2014). As Manas is prone to seasonal flooding, climate adaptation measures such as constructing elevated wildlife shelters, reinforcing embankments, and enhancing real-time flood monitoring systems are vital to mitigating habitat loss and protecting both wildlife and human communities (United Nations World Tourism Organization, 2022).
Another cornerstone of sustainability lies in strengthening the role of local communities. Revenue-sharing models from tourism, such as community-managed eco-lodges and cooperative-run handicraft ventures, provide both economic incentives and a sense of ownership over conservation outcomes (Tisdell & Wilson, 2012; World Bank, 2019). Training local residents as naturalist guides, wildlife monitors, and hospitality workers fosters inclusive development while reinforcing pro-conservation behavior.
Manas National Park remains both an ecological gem and a symbol of effective community-driven conservation. Despite ongoing threats such as poaching, climate change, and human-wildlife conflict, the park's blend of stringent protection policies, community engagement, and sustainable tourism practices offers a hopeful pathway forward. By bolstering regulatory frameworks, climate resilience, and participatory conservation programs, Manas can continue to serve as a model for preserving natural heritage while supporting local livelihoods (Kruger, 2005; Buckley, 2010; Bhatnagar, Mathur, & McCarthy, 2017).

Key issues from the literature include:

- **Community Engagement:** Research underscores the significance of regarding local groups in conservation and tourism initiatives. Studies highlight how network-based tourism models in other areas have succeeded in producing neighbourhood employment and fostering environmental stewardship.

- **Sustainable Tourism Practices:** Many studies emphasize the need for eco-friendly hotels, accountable safaris, and waste control solutions to decrease the ecological footprint of tourism.
- **Conservation Challenges:** Literature identifies habitat degradation, poaching, and human-natural world conflicts as principal threats to sustainable tourism Effective coverage measures and strict enforcement of conservation laws are often recommended.
- **Economic Benefits vs. Environmental Impact:** While tourism generates widespread sales, unregulated tourism sports often result in environmental degradation. Research highlights the need for enforcing carrying capability assessments and regulated traveller flows.

GAP ANALYSIS

- **Integration of Ecotourism with Wildlife Tourism:** Limited studies focus at the synergy among geological and biological background in tourism making plans.
- **Local Community Benefits:** While network participation is mentioned, there may be insufficient research on measuring the lengthy-time period financial blessings of tourism for local populations.
- **Sustainability Models:** Few research offers comprehensive, lengthy-term sustainability models for balancing conservation with tourism increase in Manas and Kaziranga.
- **Technological Innovations:** There is a lack of studies on how digital equipment, which includes digital excursions and AI-pushed conservation monitoring, can beautify ecotourism and natural world conservation.

Establishing the Need for This Study To address those gaps, this study aims to:

1. Develop an included ecotourism and wildlife tourism framework for Manas and Kaziranga.
2. Assess the socio-economic impact of tourism on local communities and advise techniques for equitable sales distribution.
3. Recommend policy interventions for sustainable tourism, consisting of conservation incentives and traveller management regulations.
4. Explore the ability of virtual innovations in enhancing ecotourism reports and natural world conservation efforts.

By addressing those critical regions, this study will contribute to an extra sustainable and balanced method to tourism in Manas and Kaziranga National Parks, ensuring lengthy-time period ecological and monetary advantages.

Research Design

This study employs a mixed-methods research approach that integrates both qualitative and quantitative methodologies. The aim is to explore the promotion of wildlife tourism within the ecotourism landscape of Manas and Kaziranga National Parks. The research incorporates descriptive, exploratory, and analytical techniques to develop comprehensive insights into sustainable tourism practices, conservation initiatives, and the socio-economic impacts of tourism in these protected regions.

Methodology

1. **Primary Data Collection**

- **Surveys and Questionnaires:** Both structured and semi-structured questionnaires are used to gather information from tourists, local communities, and relevant stakeholders.
- **Interviews:** In-depth interviews will be conducted with forest officials, tourism operators, and conser-

vation professionals to gain expert perspectives on wildlife tourism and ecotourism efforts.

- **Field Observations:** On-site visits will be carried out to assess tourism infrastructure, biodiversity conditions, and conservation practices in Manas and Kaziranga.

2. **Secondary Data Collection**

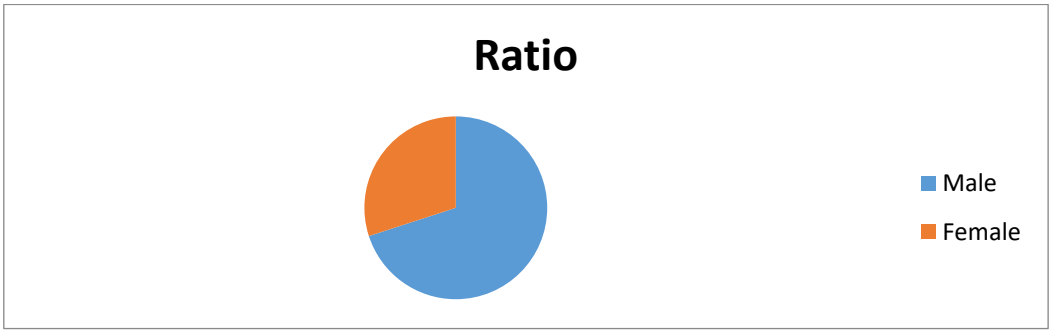
- **Literature Review:** The study will examine scholarly articles, government documents, and policy papers related to ecotourism and wildlife tourism.
- **Tourism Statistics:** Data regarding tourist footfall, revenue generation, and the economic impact of tourism will be collected from official tourism departments and agencies.
- **Conservation Reports:** The research will also include studies related to wildlife conservation, ecological changes, and efforts to protect biodiversity in the parks.

3. **Data Analysis**

- **Qualitative Analysis:** A thematic analysis will be applied to interview transcripts and field observation notes to identify patterns and insights.
- **Quantitative Analysis:** Statistical methods such as regression analysis, correlation studies, and trend assessments will be employed to evaluate the influence of tourism on conservation and local socio-economic dynamics.

Data collection analysis of data

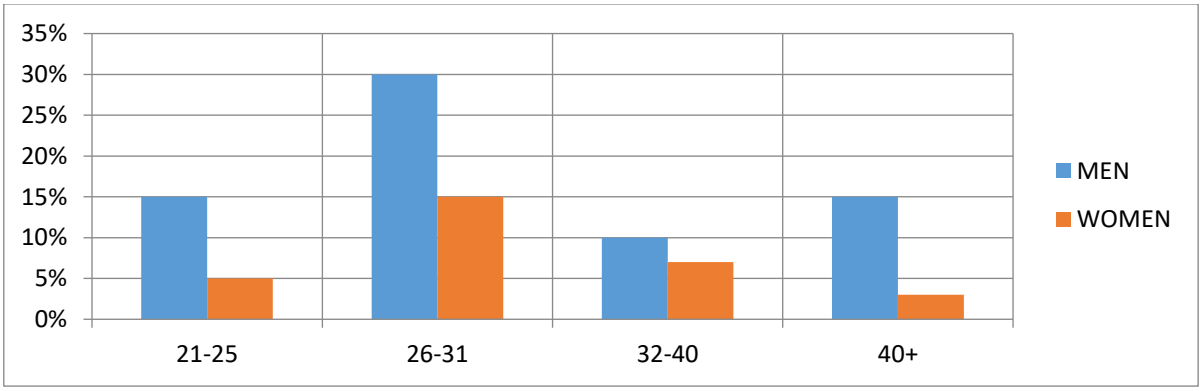
Q1. What is your gender?



INTERPRETATION

	Ratio
Male	70%
Female	30%

Q2. What is your age?

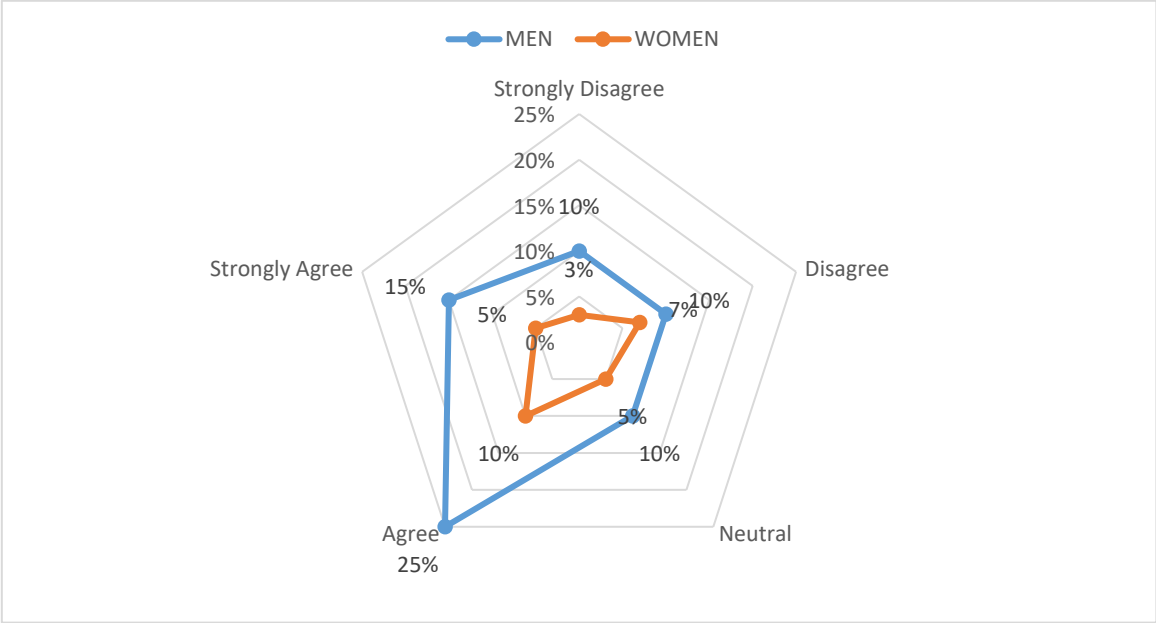


	MEN	WOMEN
21-25	15%	5%
26-31	30%	15%
32-40	10%	7%
40+	15%	3%

INTERPRETATION

According to the survey out of one hundred% MEN are 21-25-15%, 26-31-30%, 32-40-10%, forty+-15%. WOMEN are 21-25-5%, 26-31-15%, 32-forty-7%, 40+-3%

3. Wildlife tourism contributes to the conservation of biodiversity in Manas and Kaziranga National Parks.

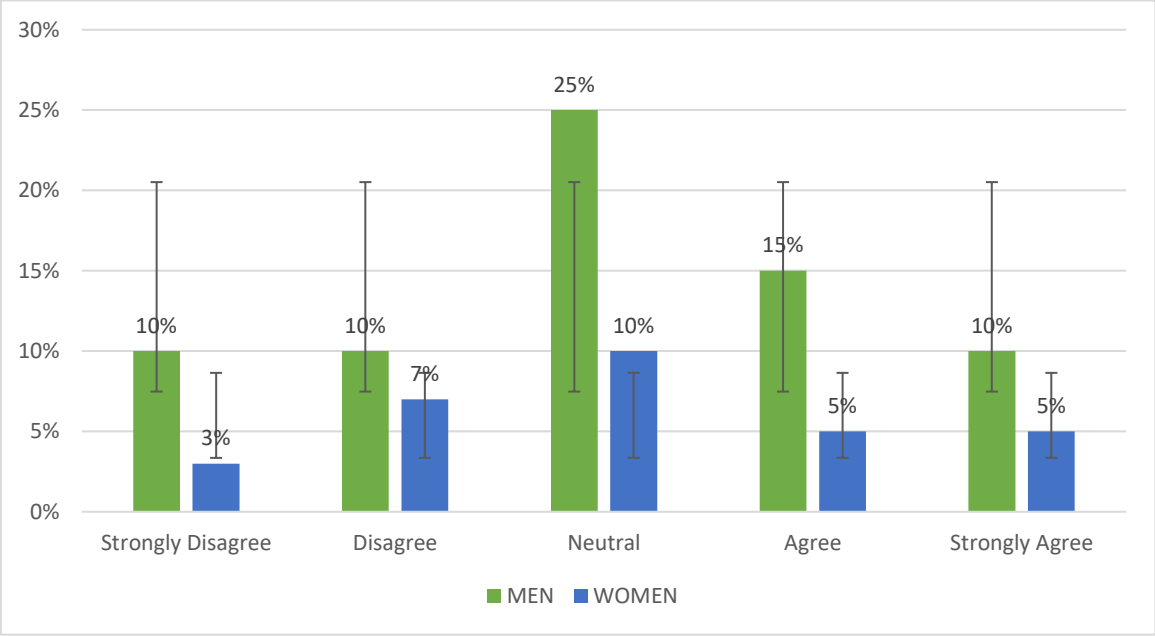


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	25%	10%
Strongly Agree	15%	5%

INTERPRETATION

According to the survey out of one hundred% 1/2 of the guy's respondent stated strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-25%, Strongly Agree-15%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-10%, Strongly Agree-5%.

4. Tourism sales is efficaciously used to assist conservation tasks in those country wide parks.

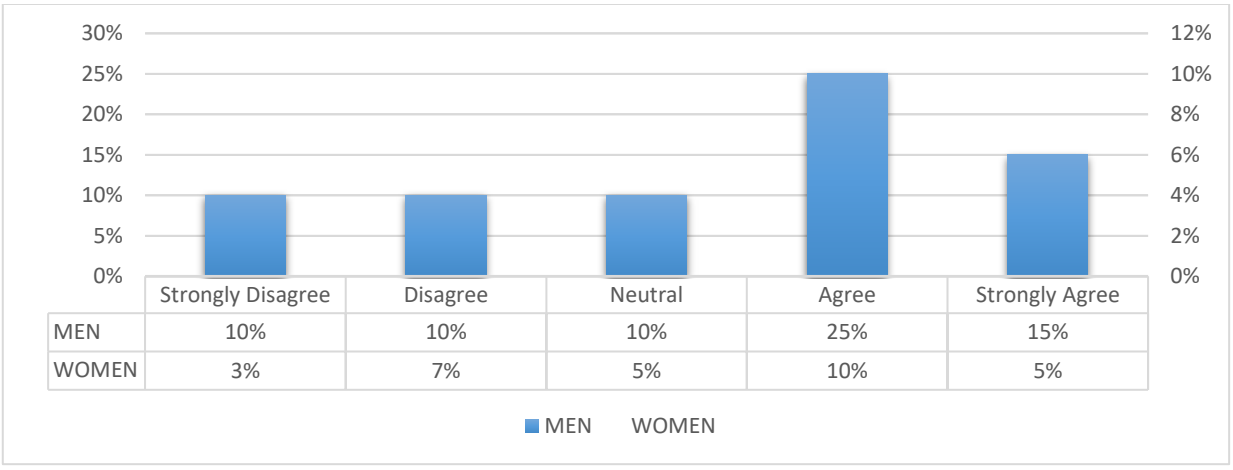


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	25%	10%
Agree	15%	5%
Strongly Agree	10%	5%

INTERPRETATION

According to the survey out of one hundred% half of the men respondent stated Strongly Disagree-10%, Disagree-10%, Neutral-25%, Agree-15%, Strongly Agree-10%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-10%, Agree-5%, Strongly Agree-5%.

5. The integration of ecotourism enhances the traveller experience by using offering insights into the place's unique landscapes and natural world.

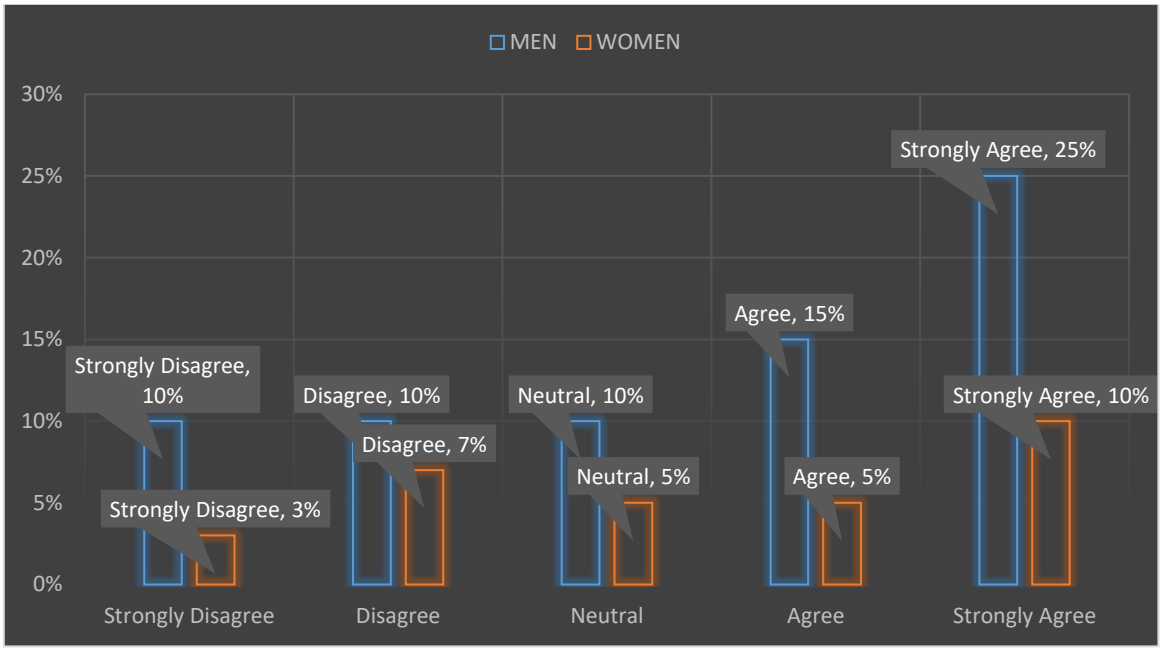


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	25%	10%
Strongly Agree	15%	5%

INTERPRETATION

According to the survey out of 100% half of the guy's respondent stated strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-25%, Strongly Agree-15%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-10%, Strongly Agree-5%.

6. More efforts have to be made to contain ecotourism elements (e.g., geological schooling, eco-trails) into flora and fauna tourism.

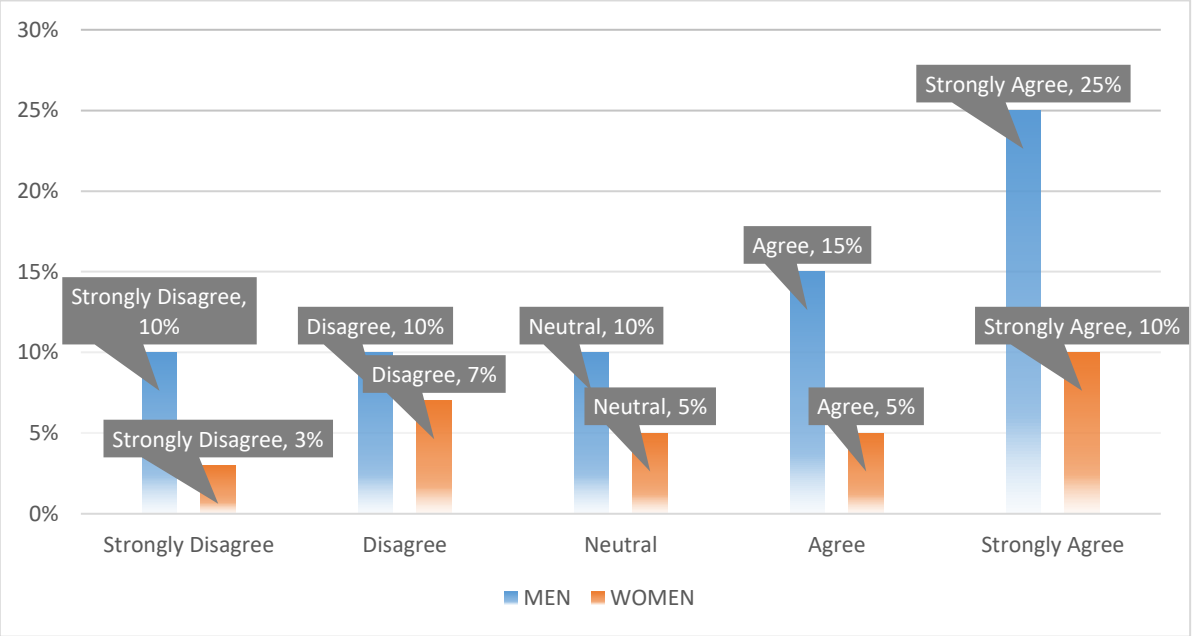


	MEN	**WOMEN**
Strongly Disagree	**10%**	**3%**
Disagree	**10%**	**7%**
Neutral	**10%**	**5%**
Agree	**15%**	**5%**
Strongly Agree	**25%**	**10%**

INTERPRETATION

According to the survey out of a hundred% half of the men respondent said Strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-15%, Strongly Agree-25%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-5%, Strongly Agree-10%.

7. Wildlife tourism has helped create activity opportunities and income sources for local groups.

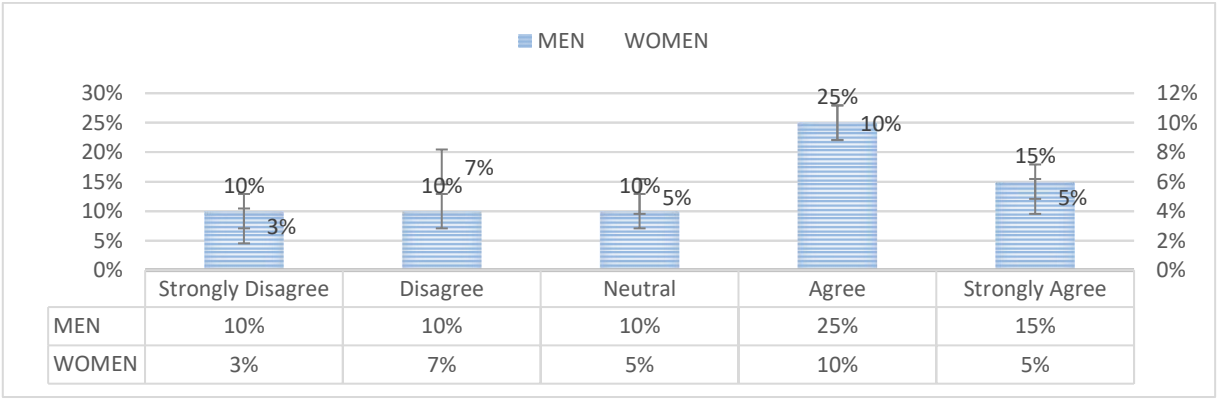


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	15%	5%
Strongly Agree	25%	10%

INTERPRETATION

According to the survey out of 100% 1/2 of the guy's respondent said Strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-15%, Strongly Agree-25%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-5%, Strongly Agree-10%.

8. Tourism performs a function in keeping nearby traditions, subculture, and indigenous historical past.

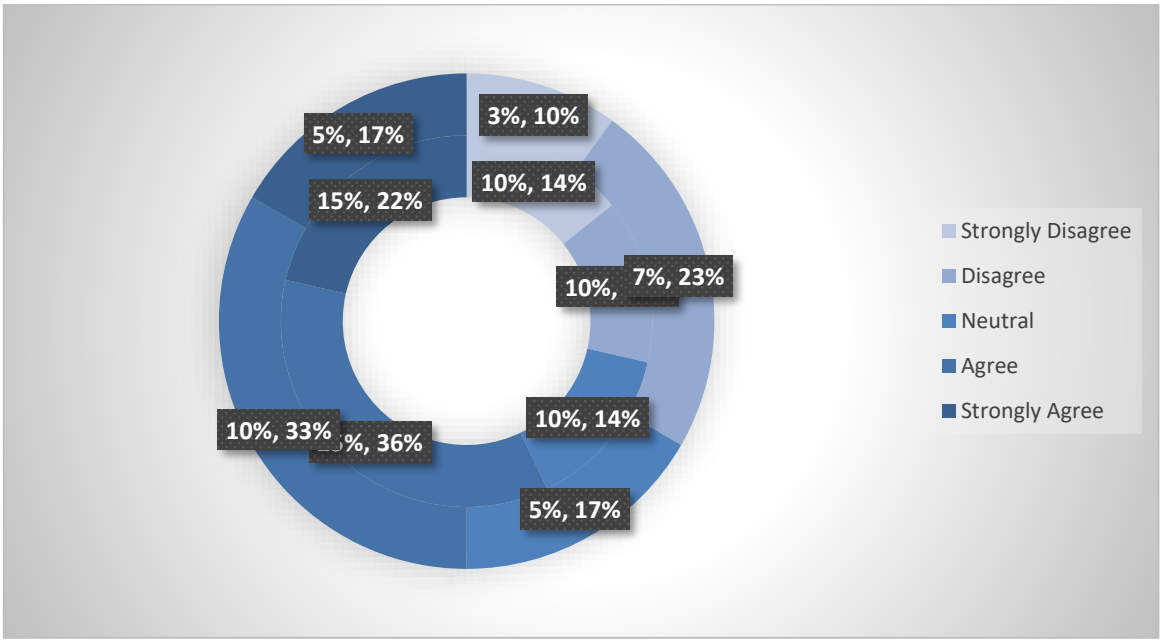


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	25%	10%
Strongly Agree	15%	5%

INTERPRETATION

According to the survey out of a hundred% 1/2 of the men respondent stated strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-25%, Strongly Agree-15%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-10%, Strongly Agree-5%.

9. Increased tourism in Manas and Kaziranga has caused issues approximately flora and fauna disturbance and environmental degradation.

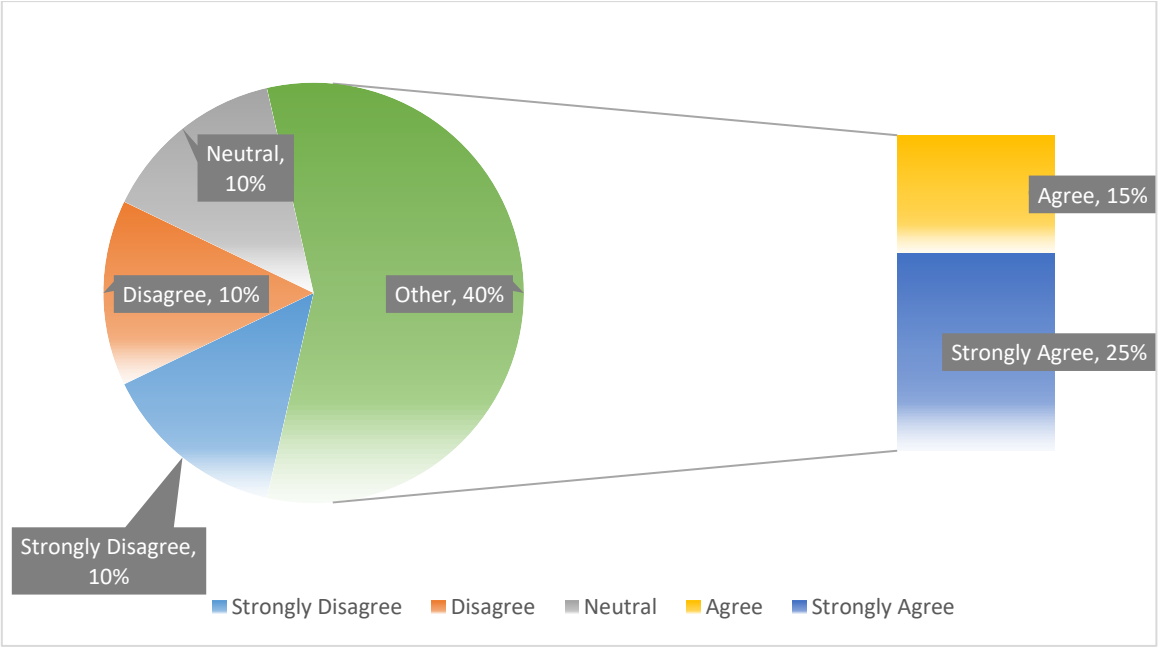


	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	25%	10%
Strongly Agree	15%	5%

INTERPRETATION

According to the survey out of 100% 1/2 of the men respondent stated strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-25%, Strongly Agree-15%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-10%, Strongly Agree-5%.

10. Stronger guidelines and sustainable tourism guidelines are needed to mitigate the bad impact of tourism on the ecosystem.



	MEN	WOMEN
Strongly Disagree	10%	3%
Disagree	10%	7%
Neutral	10%	5%
Agree	15%	5%
Strongly Agree	25%	10%

INTERPRETATION

According to the survey out of a hundred% half of the men respondent stated Strongly Disagree-10%, Disagree-10%, Neutral-10%, Agree-15%, Strongly Agree-25%. WOMEN SAID Strongly Disagree-3%, Disagree-7%, Neutral-5%, Agree-5%, Strongly Agree-10%.

CONCLUSION

This study aimed to evaluate the role of wildlife tourism in biodiversity conservation and sustainable development within two of Assam's most iconic protected areas—Kaziranga National Park and Manas National Park. Grounded in a quantitative research design supported by a structured questionnaire and hypothesis testing, the study addressed key objectives, including analyzing tourist perceptions, assessing socio-economic impacts, and identifying sustainability practices linked to ecotourism.

The findings affirm the hypothesis that wildlife tourism has a significant positive impact on conservation and sustainable development. The analysis of survey data revealed that a considerable portion of the respondents—particularly more than 40% of male and over 15% of female participants—acknowledged wildlife tourism's contribution to conserving biodiversity, generating employment, and improving local economies. Both parks have emerged as not only centers of ecological importance but also as drivers of rural development, offering livelihood opportunities through employment in guiding, hospitality, handicrafts, and other allied sectors.

The study also unearthed a nuanced understanding of community engagement in tourism. Respondents emphasized the need for inclusive development, where local populations are more deeply integrated into planning, revenue-sharing, and conservation awareness. This aligns with global models of participatory ecotourism, where the empowerment of indigenous and local communities is central to ensuring long-term ecological and social sustainability.

However, the data also highlighted challenges. Several participants expressed concerns about unregulated tourism, habitat disruption, littering, and noise pollution, which could adversely affect wildlife and the pristine environment. These observations validate the notion that tourism must be managed responsibly, with enhanced attention to carrying capacity, infrastructure, and conservation education. The responses also suggested that a portion of the population remains neutral or uncertain, indicating either a lack of awareness or insufficient involvement in the tourism-conservation nexus. This underlines the need for greater community sensitization and policy transparency.

Moreover, while wildlife tourism was recognized for its economic benefits, there was a call for the implementation of sustainable tourism strategies, such as eco-trails, visitor zoning, waste management protocols, green accommodations, and biodiversity interpretation centers. Such interventions would enhance tourist experiences while reducing ecological footprints.

In essence, this research underscores that wildlife tourism, when implemented through an inclusive, regulated, and conservation-oriented framework, has the potential to serve as a vital tool for both ecological preservation and human well-being. The experiences of Kaziranga and Manas highlight a model that can be refined and replicated across other biodiversity-rich regions of India and the Global South.

Limitations of the Study

While the study offers valuable insights, several limitations should be acknowledged:

1. **Sample Size and Distribution**: The study was limited by a relatively small and localized sample size. The gender distribution was uneven, with male respondents outnumbering female participants, which may have influenced the findings.
2. **Geographical Constraints**: The data collection was restricted to accessible areas around Kaziranga and Manas. Remote communities within buffer zones or core areas were underrepresented, potentially omitting critical perspectives.
3. **Respondent Awareness Levels**: Some participants lacked adequate knowledge of sustainable tourism or conservation policies, leading to neutral responses that may have limited the analytical depth of certain variables.
4. **Time Constraints**: Data was collected over a limited period, and seasonal variations in tourism trends were not accounted for. Visitor perceptions might differ during peak and off-peak tourism seasons.
5. **Quantitative Bias**: The study primarily relied on quantitative data, which may not fully capture the emotional, cultural, and historical dimensions of human-wildlife interactions. Qualitative insights such as focus group discussions or ethnographic fieldwork were not incorporated.

Future Research Directions

Based on the findings and limitations, future studies can be expanded and improved in the following ways:

1. **Incorporation of Qualitative Methods**: Future research could integrate interviews, case studies, and ethnographic observations to provide richer, context-specific insights into how local communities perceive and engage with tourism and conservation.

2. **Longitudinal Studies**: Conducting long-term studies across multiple seasons and years would help capture trends, behavioral changes among tourists, and the evolving impact of tourism on conservation outcomes.
3. **Comparative Studies Across Protected Areas**: Comparing Kaziranga and Manas with other national parks in Northeast India or other biodiversity hotspots in India could reveal broader patterns and allow for policy benchmarking.
4. **Gender-Sensitive Research**: Future work should aim for a more balanced gender representation and explore gendered dimensions of tourism employment and participation in conservation programs.
5. **Impact Evaluation of Policies and Programs**: Analysing the effectiveness of existing government policies, ecotourism guidelines, and community-based tourism initiatives will offer critical insights into what is working and what needs restructuring.
6. **Technology and Tourism**: Further studies could examine the role of digital tourism tools, wildlife monitoring apps, and virtual tourism platforms in promoting sustainable tourism without overwhelming fragile ecosystems.

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