

Exploring the Potentiality of Eco - Tourism in Ranchi District

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Abstract: *This research endeavors to assess the untapped potential of eco - tourism in Ranchi City, situated in the eastern state of Jharkhand, India. As urbanization accelerates and environmental concerns escalate, the need for sustainable development becomes imperative. Ranchi, endowed with rich biodiversity, lush greenery, and a diverse cultural heritage, presents a unique opportunity for the promotion of eco - tourism as a catalyst for sustainable urban development. The study employs a multidisciplinary approach, integrating environmental science, tourism management, and urban planning methodologies. Through extensive field surveys, interviews, and data analysis, the research aims to identify key ecological assets and cultural landmarks within Ranchi that could be leveraged to create a compelling eco - tourism narrative. Additionally, the research assesses the current state of infrastructure, accessibility, and hospitality services in Ranchi to identify potential areas for improvement to accommodate eco - tourism initiatives. Furthermore, the study examines the perceptions and attitudes of local communities towards eco - tourism, considering their role as stakeholders in fostering sustainable practices. The findings of this research are expected to provide valuable insights for policymakers, urban planners, and local communities to develop a comprehensive eco - tourism strategy that not only promotes economic growth but also ensures the preservation of Ranchi's natural and cultural assets. By embracing eco - tourism as a sustainable approach to urban development, Ranchi has the potential to become a model city that balances economic progress with environmental conservation, contributing to the global discourse on responsible tourism and sustainable city planning.*

Keywords: Eco - tourism, Sustainable Development, Ranchi, Cultural Heritage, Bio - diversity

1. Introduction

By synthesizing findings from these diverse literature sources, this research aims to build a comprehensive understanding of the factors influencing the potentiality of eco - tourism in Ranchi City. The literature review forms a critical foundation for identifying gaps in existing knowledge and guiding the empirical investigation into the specific context of Ranchi's eco - tourism potential.

Urbanization, driven by rapid industrialization and population growth, has become a global phenomenon, reshaping landscapes and ecosystems. As cities expand, the delicate balance between development and environmental conservation becomes increasingly precarious. Ranchi, the capital city of Jharkhand in eastern India, stands at the crossroads of this transformative process, endowed with a unique combination of rich biodiversity, lush landscapes, and a vibrant cultural heritage. In this context, the exploration of eco - tourism emerges as a compelling avenue for sustainable urban development.

Eco - tourism, characterized by responsible travel that promotes environmental conservation and cultural understanding, offers a viable alternative to conventional tourism models that often contribute to ecological degradation. This research aims to delve into the untapped potential of eco - tourism in Ranchi, considering its natural and cultural assets as strategic resources for fostering sustainable urban development. By adopting a multidisciplinary approach that integrates environmental science, tourism management, and urban planning, the study seeks to unravel the intricate connections between urbanization, ecological preservation, and economic growth.

The introduction of eco - tourism as a focal point for urban development in Ranchi is not merely an academic pursuit but a practical response to the escalating global discourse on sustainable living. As environmental concerns intensify and the need for green practices becomes paramount, the potential of eco - tourism to act as a catalyst for positive change within urban landscapes cannot be overstated.

This research recognizes Ranchi's status as a microcosm of potentiality, where the intersection of urbanization, environmental conservation, and cultural heritage offers a unique opportunity for innovation in sustainable development. The following sections will critically review existing literature, shedding light on the theoretical foundations and best practices in eco - tourism, and subsequently, empirically investigate the current state of Ranchi's ecological and cultural resources. Through this comprehensive approach, the research aspires to contribute valuable insights to policymakers, urban planners, and local communities, guiding the formulation of a sustainable eco - tourism strategy for Ranchi, and potentially serving as a model for other urban centers grappling with similar challenges worldwide.

2. Literature Review

Numerous studies emphasize the potential of eco - tourism as a tool for sustainable urban development. Scholars such as Honey (2008) and Weaver (2011) highlight the role of eco - tourism in fostering economic growth while preserving natural and cultural resources.

The accelerating pace of urbanization often results in environmental degradation. Smith and Tiffany (2016) discuss the adverse effects of rapid urban development on

biodiversity and emphasize the need for alternative models, such as eco - tourism, to mitigate these impacts.

Ranchi, with its diverse ecosystems and cultural heritage, has been briefly explored in regional studies. Sharma et al. (2019) provide insights into the rich biodiversity of the region, while Roy and Singh (2020) delve into the cultural significance of landmarks in Ranchi.

The success of eco - tourism initiatives often relies on the active participation of local communities. Gurung and Seidl (2019) argue for the importance of involving communities in decision - making processes, ensuring their support, and fostering a sense of responsibility towards sustainable tourism practices.

The role of adequate infrastructure and hospitality services in promoting eco - tourism is emphasized by Becken and Hay (2007). The study suggests that a well - developed infrastructure is crucial for attracting eco - tourists and providing them with a positive and sustainable experience.

A review of successful eco - tourism destinations reveals the significance of supportive policy frameworks. Farsari and Butler (2008) highlight the importance of government policies in creating an enabling environment for eco - tourism development, including regulations that promote conservation and responsible tourism practices.

Challenges such as balancing economic benefits with environmental conservation and mitigating potential negative impacts are explored by Buckley (2012). Understanding and addressing these challenges are essential for developing a sustainable eco - tourism model in Ranchi.

3. The Study Area

Ranchi is the capital city of Jharkhand, a state in eastern India. The Ranchi district is part of the larger Ranchi Division and is centrally located within the state. Here are the geographical coordinates for Ranchi:

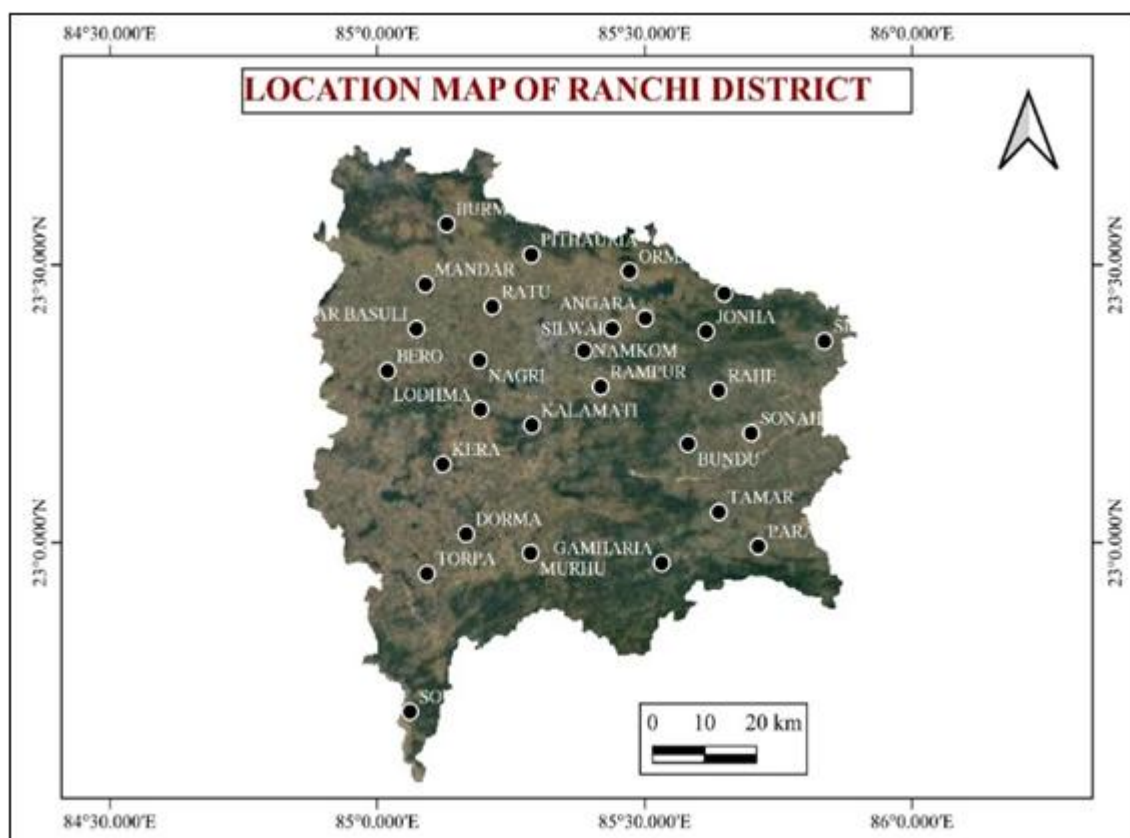


Figure 1: Location map of Ranchi District

Sources: Prepared By author through QGIS

Latitudinal Extension: 22.00.00 N – 24.30.00 N

Longitudinal Extension: 85.00.00 E – 86.00.00 E

Ranchi is surrounded by hilly terrain and is known for its scenic landscapes. The city is situated on the Chotanagpur Plateau and is rich in natural beauty, with rivers, waterfalls, and dense forests in the surrounding areas. The coordinates provided are for the city of Ranchi, which serves as the administrative and cultural center of the district and the entire Jharkhand state.

4. Favorable Physical Setup for the Tourism Industry

For the tourism industry to thrive in Ranchi City, several favorable physical features and amenities can contribute to attracting visitors. Leverage the natural beauty of the Chota Nagpur Plateau, showcasing its hills, valleys, and lush greenery. Develop well - maintained parks and gardens that

provide scenic spots for relaxation and enjoyment. Promote and develop the tourism potential of rivers, lakes, and waterfalls in and around Ranchi, such as the Subarnarekha River and Hundru Falls. Develop recreational facilities like boating and waterfront promenades. Utilize the hilly terrain for adventure tourism activities like trekking, rock climbing, and paragliding. Develop adventure sports infrastructure and promote Ranchi as an adventure tourism destination. Leverage the biodiversity of the region for wildlife tourism by promoting nature reserves and wildlife sanctuaries. Develop eco - friendly wildlife tourism initiatives that focus on conservation. Ensure well - maintained roads, transportation facilities, and accommodation options to enhance the overall tourist experience. Develop tourist - friendly infrastructure like information centers, signages, and public amenities.

5. Favorable Cultural Setup for the Tourism Industry

Ranchi, the capital city of Jharkhand, India, has a rich cultural tapestry that reflects the diverse heritage of the region. Jharkhand is known for its tribal communities, and Ranchi, being the capital, is influenced by the cultural practices of tribes like Munda, Oraon, and Santhal. Tribal art, music, dance, and traditional rituals play a significant role in shaping the cultural identity of the region. Ranchi celebrates various festivals with enthusiasm. Some major festivals include Sarhul, Karma, and Sohrai, which are tribal festivals celebrating nature, harvest, and community bonding. Hindu festivals like Durga Puja, Diwali, and Holi are also widely celebrated. Folk music and dance are integral to Ranchi's cultural scene. Traditional tribal dance forms like Chhau and Paika are performed during festivals. Bhajans and kirtans are part of religious and cultural events. Ranchi is known for traditional tribal handicrafts, including Paitkar paintings, bamboo crafts, and woodwork. The city hosts

craft fairs and exhibitions to showcase and promote local artisans. The local cuisine of Ranchi is influenced by tribal and regional flavors. Traditional dishes include Thekua, Dhuska, and LittiChokha. Ranchi is home to various religious communities, contributing to a diverse religious landscape. Notable religious sites include the Jagannath Temple, Angrabadi Temple, and Sun Temple. Ranchi houses educational and cultural institutions like the Ranchi University and various research centers, contributing to intellectual and cultural development. Cultural events, seminars, and art exhibitions are organized by these institutions. Ranchi has historical landmarks such as Ranchi Hill, which houses the Pahari Mandir and offers panoramic views of the city. The Birsa Smriti Mandir is dedicated to the tribal freedom fighter Birsa Munda.

Ranchi's cultural setup is dynamic, blending traditional tribal influences with contemporary elements. Ongoing efforts by local communities, cultural organizations, and the government contribute to the preservation and promotion of Ranchi's rich cultural heritage. For the latest and more specific information, it's recommended to check with local sources or authorities.

6. Communication

Ranchi has a network of roads and highways that connect it to nearby towns and cities. Well - maintained roads are essential for both local commuting and tourism. The city has a public transportation system, including buses and auto - rickshaws, to facilitate intra - city travel. Ranchi is well - connected by rail, and the Ranchi Junction is a major railway station. It serves as a transit point for both short and long - distance trains. Birsa Munda Airport in Ranchi provides air connectivity. Regular flights connect Ranchi to major cities in India.

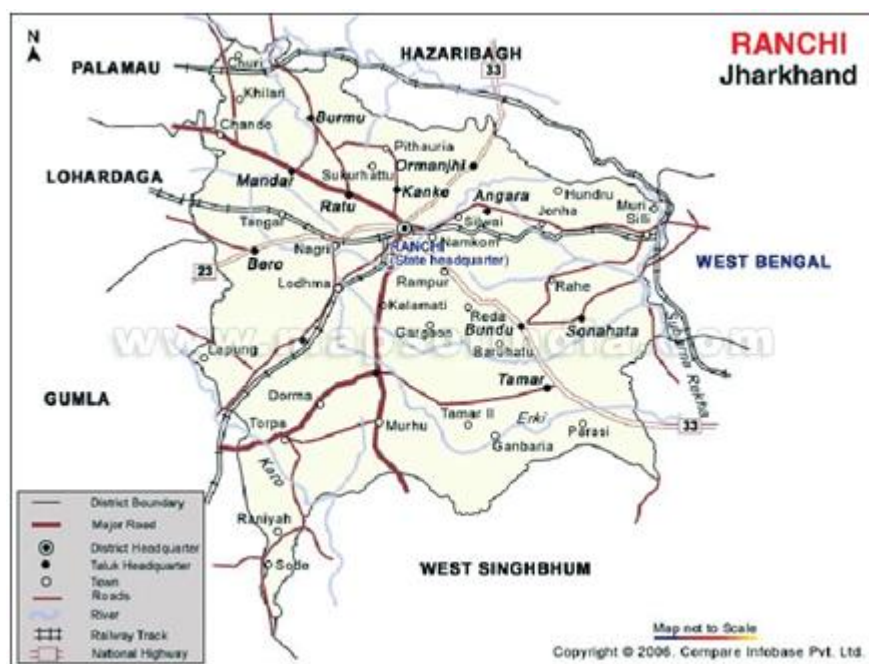


Figure 2: Transportation Map, Sources: www.mapsofindia.com

Communication facilities and information services may cater to multiple languages to accommodate the diverse linguistic backgrounds of residents and tourists.

7. Main Tourist Attraction

7.1 Patratu Valley

Patratu Valley is situated in the Ramgarh district of Jharkhand, approximately 35 kilometers from Ranchi, the capital city of Jharkhand. The valley is known for its picturesque landscapes, surrounded by hills and dense forests. The valley is characterized by lush greenery, rolling hills, and a serene environment. The Patratu Dam, also known as the Rukka Dam, enhances the beauty of the valley. The dam is built on the Patratu River and serves multiple purposes, including irrigation and water supply. The dam itself is a popular attraction. Boating facilities are available for tourists to enjoy the scenic views of the reservoir. The hilly terrain around Patratu Valley offers opportunities for trekking and hiking. Adventure enthusiasts often visit the region for its trekking trails. The valley's natural beauty, especially during the monsoon season when the surroundings are lush green, makes it an ideal location for nature photographers. Patratu Valley is accessible by road from Ranchi, and there are transportation options available for visitors. The nearest railway station is Patratu Railway Station. (Fig3)

7.2 Dassam Falls

Dassam Falls, also known as Dassam Ghagh, is a natural waterfall located near Taimara village in the Ranchi district of Jharkhand, India. Here are some key details about Dassam Falls: Dassam Falls is situated on the Subarnarekha River, about 34 kilometers from Ranchi, the capital city of Jharkhand. The falls are nestled amid lush greenery and are easily accessible from Ranchi by road. The waterfall is renowned for its scenic beauty, surrounded by dense forests and hills. The name "Dassam" translates to "ten" in Hindi, and the falls are named so because of the ten successive stages it descends through. The cascading water creates a series of smaller falls before reaching the base. The height of Dassam Falls is approximately 144 feet (44 meters). During the monsoon season, when the water flow is at its peak, the falls present a magnificent spectacle. The force of the water and the picturesque surroundings make it a popular destination for nature lovers and tourists. Dassam Falls is well - connected by road, and visitors can reach the site easily from Ranchi. The nearest airport is Birsa Munda Airport in Ranchi, and the nearest railway station is Ranchi Railway Station. From Ranchi, one can hire a taxi or use other modes of local transportation to reach Dassam Falls. (Fig3)

7.3 Jonha Falls

Jonha Falls, also known as Gautam Dhara, is a scenic waterfall located near Ranchi in the Indian state of Jharkhand. Jonha Falls is situated around 40 kilometers away from Ranchi, the capital city of Jharkhand. It is located on the Ranchi - Purulia Road in the Ranchi district. The waterfall is surrounded by dense forests and hills, providing

a picturesque setting. The Gunga River, a tributary of the Subarnarekha River, forms the falls. The natural beauty of Jonha Falls attracts tourists, nature lovers, and photographers. The height of Jonha Falls is approximately 43 meters (141 feet). The water cascades down the rocks, creating a mesmerizing display as it descends. The falls are particularly beautiful during the monsoon season when the water flow is at its peak. The area around Jonha Falls also holds religious significance. There is a temple dedicated to Lord Buddha near the falls, and it is believed that Lord Buddha had meditated in this region during his journey in ancient times. The temple attracts both tourists and pilgrims. Jonha Falls is easily accessible by road from Ranchi. Visitors can hire a taxi or use other local transportation to reach the falls. The journey to the falls also allows for a scenic drive through the picturesque landscapes of Jharkhand. (Fig3)

7.4 Hundru Falls

Hundru Falls is one of the most famous waterfalls near Ranchi, the capital city of Jharkhand, India. Hundru Falls is located around 45 kilometers from Ranchi, in the Ranchi district of Jharkhand. It is situated on the Subarnarekha River and is easily accessible by road. The waterfall is renowned for its natural beauty and the scenic surroundings. The Subarnarekha River cascades down from a height of about 98 meters (322 feet) at Hundru Falls, creating a breathtaking display of water against the rocky backdrop. Hundru Falls is one of the highest waterfalls in the region, and its tiered structure adds to its visual appeal. The water plunges down in multiple stages, creating a series of smaller falls before reaching the base. Hundru Falls is well - connected by road, and visitors can reach the site easily from Ranchi. The nearest airport is Birsa Munda Airport in Ranchi, and the nearest railway station is Ranchi Railway Station. From Ranchi, one can hire a taxi or use other modes of local transportation to reach Hundru Falls. The best time to visit Hundru Falls is during the post - monsoon and winter seasons (September to February). During the monsoon season, the waterfall is at its most spectacular, with the increased water flow. There are basic facilities available for tourists, including parking areas, viewpoints, and local vendors offering snacks and refreshments. The surrounding area has greenery and provides a serene environment for visitors. Hundru Falls and its surroundings offer opportunities for adventure activities. The rocky terrain attracts trekkers, and there are adventure camps in the vicinity that provide activities such as rock climbing and rappelling. (Fig3)

8. Nearby Attraction

8.1 Netarhat Hill Station

Netarhat is a hill station located in the Latehar district of Jharkhand, India. Known for its picturesque landscapes, pleasant climate, and lush greenery, Netarhat is often referred to as the "Queen of Chotanagpur." Here are some key details about Netarhat: Netarhat is situated in the Chotanagpur Plateau at an elevation of around 3,700 feet (1,128 meters) above sea level. It is approximately 156 kilometers from Ranchi, the capital city of Jharkhand.

Netarhat is surrounded by dense forests, hills, and scenic viewpoints. The region is known for its breathtaking sunsets, panoramic views, and cool climate, making it a popular destination for nature lovers and tourists seeking a peaceful retreat. Magnolia Point is one of the famous viewpoints in Netarhat that offers a stunning panoramic view of the sunrise and sunset. The point is named after the Magnolia trees that surround it. Upper Ghaghri Falls is a beautiful waterfall near Netarhat. The waterfall, set amidst the lush greenery, is a popular spot for tourists looking to enjoy the natural beauty of the region. Koel View Point provides a mesmerizing view of the Koel River winding its way through the valleys. It is another popular vantage point that attracts visitors.

Netarhat is also known for the Netarhat Residential School, one of the oldest and most prestigious schools in India. The school is located amidst scenic surroundings and contributes to the charm of the region.

Netarhat enjoys a pleasant climate throughout the year. Summers are mild, and temperatures rarely exceed uncomfortable levels. Winters can be chilly, and the region experiences rainfall during the monsoon season. Netarhat is accessible by road from Ranchi, and the journey offers picturesque views of the countryside. The nearest railway station is at Barwadih, approximately 48 kilometers away. The best time to visit Netarhat is during the months of October to March when the weather is cool and pleasant. The monsoon season, from July to September, brings lush greenery to the region. Netarhat's serene environment and natural beauty makes it an ideal destination for those seeking a peaceful and rejuvenating getaway. Visitors can enjoy the tranquility of nature, explore viewpoints, and experience the unique charm of this hill station in Jharkhand. (Fig3)



Figure 3: Different Tourist attraction In ranchi district, Sources: Field survey, 2024

9. Tourist Profile

I surveyed 500 tourists from different tourist places in the Ranchi district. It is seen that 55% of tourists were regional tourists, 43% of tourists were from different parts of the Country and only 2% of tourists found international, come from outside of India (Fig 4). 60% of tourists' native language is Hindi and Regional Language (Maghahi, Bhojpuri & Tribal Language), 35% of tourists speak Bengali, 3% of tourists speak the Oriya Language the remaining 2 % of tourists speak English and another language (Fig 5). Here 20% of tourists belong to small groups and 30% of tourists belong to large groups. About tourist opinion of the food, quality is not bad and food cost is medium. The behavior of local people in this place is good. All of the tourists went to come again to this place.

Tourist arrivals are highest during the month of December to January while the lowest number of arrivals is in the month of July.

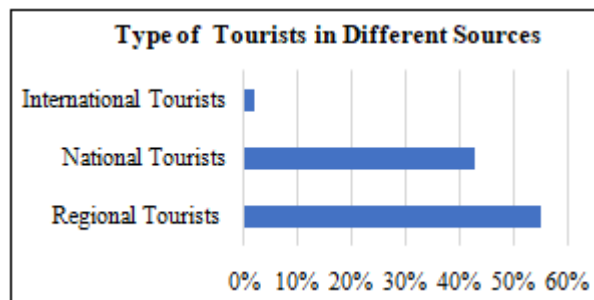


Figure 4: Sources: Primary data collect, 2024

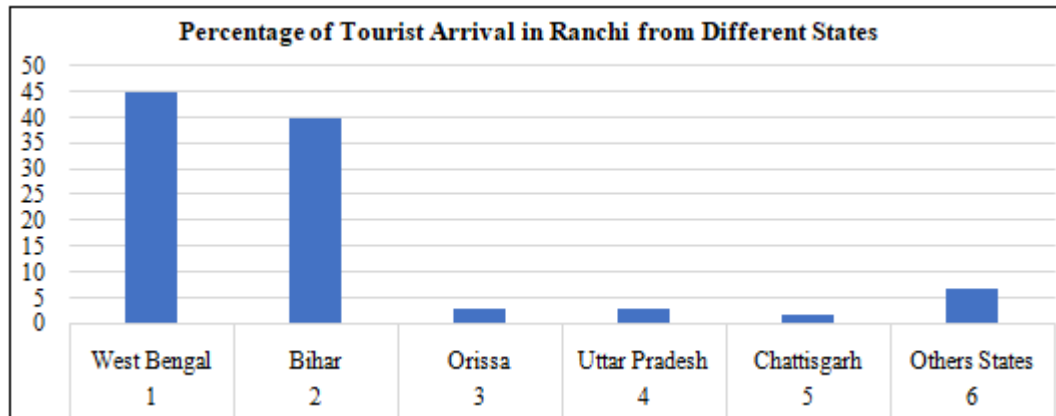


Figure 5: Primary Data collect, 2024

10. Community Involvement in Sustainable Tourism:

Community involvement is essential for the success of sustainable tourism initiatives in Ranchi. Engaging the local community not only ensures that tourism benefits are shared but also fosters a sense of ownership and responsibility for the sustainable development of the region. Here are some ways community involvement can be integrated into sustainable tourism efforts in Ranchi:

- **Community Consultation and participation:** Engage in open and transparent communication with local communities to understand their needs, concerns, and aspirations. Involve community members in decision-making processes related to tourism planning and development.
- **Cultural Preservation and Promotion:** Emphasize the preservation and promotion of local culture and traditions. Encourage the participation of local artists, artisans, and cultural performers in tourism-related events and activities.
- **Homestay and Community - Based Tourism:** Promote community-based tourism initiatives, such as homestays, where residents host tourists and share their way of life. Provide training and support for community members to participate in hospitality services.
- **Local Product Development:** Encourage the development and sale of local handicrafts, traditional products, and souvenirs. Support local entrepreneurs and cooperatives to create sustainable income-generating opportunities.
- **Educational Programs:** Conduct awareness and education programs to inform the community about the benefits and challenges of sustainable tourism. Promote responsible tourism practices among community members.
- **Skill Development and Training:** Provide training programs to enhance the skills of community members, particularly those involved in tourism-related activities. Equip locals with the knowledge and skills needed to offer high-quality services and experiences to visitors.

10.1 Environmental Conservation Initiatives:

Involve local communities in environmental conservation efforts, such as tree planting, waste management, and protection of natural resources.

Create awareness about the importance of preserving the environment for long-term tourism sustainability.

10.2 Community Events and Festivals:

Integrate community events and festivals into the tourism calendar to showcase local traditions and attract visitors. Ensure that tourism activities align with and support existing cultural events.

Community - Managed Tourism Infrastructure: Explore the possibility of community-managed tourism facilities, such as interpretation centers, walking trails, and cultural centers. Empower communities to manage and maintain their tourism assets.

Capacity Building for Responsible Tourism Practices: Offer workshops and training sessions on responsible tourism practices, emphasizing the importance of minimizing negative impacts on the local environment and culture. Foster a sense of responsibility and stewardship among community members.

Monitoring and Evaluation: Establish mechanisms for ongoing monitoring and evaluation of the impacts of tourism on the community. Solicit feedback from community members to continuously improve and adapt sustainable tourism initiatives.

10.3 Collaboration with Local Organizations:

Partner with local NGOs, community-based organizations, and institutions to strengthen community involvement and ensure that initiatives align with community needs and aspirations.

Community involvement in sustainable tourism not only enhances the quality of the tourist experience but also contributes to the overall well-being and resilience of the local community. It's crucial to maintain an ongoing dialogue and collaborative approach to address the evolving needs and challenges of both tourists and residents.

11. Challenges and Opportunities in Eco - Tourism Development

Developing eco - tourism in Ranchi presents both challenges and opportunities. Recognizing and addressing these factors is crucial for sustainable and responsible eco - tourism development. As of my last knowledge update in January 2022, here are some challenges and opportunities related to eco - tourism development in Ranchi:

11.1 Challenges:

Infrastructure Development:

Challenge: Inadequate infrastructure, including roads, accommodation, and facilities, may hinder the growth of eco - tourism.

Opportunity: Investment in sustainable infrastructure development can enhance accessibility and visitor experience.

11.2 Awareness and Education:

Challenge: Lack of awareness among tourists and local communities about the principles of eco - tourism and environmental conservation.

Opportunity: Educational programs can promote awareness about eco - tourism, emphasizing responsible travel practices.

11.3 Conservation Concerns:

Challenge: The influx of tourists may pose a threat to local ecosystems and wildlife habitats if not managed properly.

Opportunity: Implementing strict conservation measures and responsible tourism guidelines can mitigate environmental impacts.

11.4 Community Engagement:

Challenge: Limited community involvement and benefits - sharing may lead to resistance from local communities.

Opportunity: Empowering local communities through participation in decision - making and economic benefits can foster support for eco - tourism.

11.5 Regulatory Framework:

Challenge: Inconsistent or inadequate regulations and enforcement may lead to unsustainable tourism practices.

Opportunity: Strengthening and enforcing regulations specific to eco - tourism can ensure sustainable operations and protect natural resources.

11.6 Climate Change Impact:

Challenge: Climate change may affect local ecosystems, altering landscapes and potentially impacting biodiversity.

Opportunity: Promoting eco - friendly practices and emphasizing climate resilience in eco - tourism planning can contribute to environmental conservation.

11.7 Balancing Conservation and Tourism:

Challenge: Striking a balance between promoting tourism and preserving the ecological integrity of the region can be challenging.

Opportunity: Implementing sustainable tourism practices that prioritize conservation while providing positive socio - economic benefits.

12. Conclusion

In conclusion, this research has embarked on a comprehensive exploration of the potentiality of eco - tourism in Ranchi, aiming to reconcile the imperatives of urban development with the preservation of natural and cultural resources. Through a multidisciplinary lens that incorporates environmental science, tourism management, and urban planning, the study has sought to unravel the intricate connections between Ranchi's urbanization, ecological integrity, and economic prospects.

The literature review underscored the significance of eco - tourism as a sustainable urban development strategy, drawing from global best practices and highlighting the need for a harmonious coexistence between urban growth and environmental preservation. The unique biodiversity and cultural heritage of Ranchi were illuminated through existing studies, underscoring the city's potential to serve as a beacon for responsible tourism.

As we delved into the specifics of Ranchi, a city at the cusp of transformation, the research explored the existing infrastructure, community attitudes, and the current state of hospitality services. These aspects were identified as critical components that need careful consideration in the formulation of a sustainable eco - tourism strategy. By acknowledging the role of local communities as stakeholders and understanding their perceptions, the research emphasizes the importance of fostering a collaborative approach that aligns with the principles of responsible tourism.

Through this inquiry, it becomes evident that Ranchi has the potential to not only capitalize on its natural and cultural assets but also to set a precedent for other urban centers grappling with the challenges of sustainable development. The development of an eco - tourism strategy for Ranchi, informed by empirical findings and global best practices, can serve as a blueprint for other regions seeking to balance economic growth with environmental and cultural preservation.

In essence, the research endeavors to contribute to the ongoing discourse on sustainable urban development by providing actionable insights and a nuanced understanding of the potentiality of eco - tourism in Ranchi. By fostering a balance between economic progress and ecological conservation, Ranchi has the opportunity to emerge as a model city that not only attracts tourists but also ensures the longevity of its natural and cultural heritage for generations to come. The findings of this study beckon policymakers, urban planners, and local communities to collaboratively shape the future of Ranchi, recognizing the potential for eco

- tourism to be a transformative force in the city's sustainable development journey.

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