

Ecotourism and Sustainable Development in Odisha A Critical Reflection

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Abstract

The tourism industry, one of the sectors most severely affected by the COVID-19 pandemic, has re-emerged in a transformed manner, offering alternative sources of livelihood. Its role now extends beyond contributing to nation's GDP, encompassing the creation of wider employment opportunities. Within this sector, ecotourism has rapidly gained prominence as one of the fastest-growing segments, largely driven by growing public interest in environmentally responsible travel. Frequently, highlighted in academic discourse, ecotourism is viewed as a viable strategy for economic development, providing both social and economic benefits while simultaneously safeguarding the environment. In this context, the Government of India, along with several state governments, has launched multiple initiatives aimed at the sustainable use of natural resources to promote long-term development and improve the well-being of local communities.

Against this backdrop, the present study examines the role of ecotourism in promoting sustainable development in Western Odisha, a region known for its scenic landscapes, rich biodiversity, and vibrant cultural traditions. The article assesses the impact of ecotourism on local communities and ecosystems while also addressing the pressing challenges of maintaining ecological balance amid tourism expansion.

The rise of ecotourism has generated both positive and negative outcomes for local populations. In rural and tribal areas especially, tourism has influenced traditional lifestyles, shaping local customs, attire, food preferences, daily practices, speech, and language. Nevertheless, Odisha's vast forest resources, wildlife sanctuaries, and unique indigenous cultures provide significant opportunities to

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leverage ecotourism as a tool for environmental conservation, community empowerment, and inclusive economic growth.

Keywords: Ecotourism, Livelihoods, Biodiversity Conservation, Enterprise, Local Communities, Community Empowerment

9.0 Introduction

India, one of the favoured tourist destinations for both domestic and international tourists, is famous for its unique natural endowments, culture and hospitality. Its tourism industry generates employment opportunities for millions of job-seekers. Apart from its indirect contribution, it directly contributed 2.7 per cent to GDP and 6.7 per cent to the employment of the country in 2019-20. However, the Covid-19 pandemic has not only jeopardised the growth prospects of the sector but also caused a significant economic loss. In the after the pandemic, the Government of India along with various state Governments have taken up lots of step to promote tourism.

Like other forms of tourism, ecotourism has become increasingly popular in India. It emphasises responsible travel to natural areas around the world. It has generated sustained positive economic impacts in regions of high ecological value, largely because a significant number of tourists are drawn to natural landscapes, wildlife sanctuaries, and national parks (Lindberg 1996). Researchers from diverse backgrounds have studied both the positive and negative impacts of ecotourism. Prominent scholars (Pujar & Mishra 2021 and Samal & Dash 2023) have examined how tourism affects community livelihoods, focusing on its social, economic, and cultural dimensions.

Tourism has the potential to create employment, foster local entrepreneurship, support small businesses, and aid in the preservation and promotion of cultural heritage (Eshun 2022 and Pujar et al. 2021). However, the impact of tourism on community livelihoods remains a topic of debate. Several studies suggest that tourism leads to the displacement of local communities by restricting access to critical resources such as land, water, and other natural assets (Koens et al. 2009). Critics also argue that employment generated by the tourism sector is often low-paying and unsustainable (Orams 1995).

Several researchers have highlighted tourism's adverse effects on the environment, local populations, and cultural value systems. The influx of millions of tourists places significant pressure on water bodies, marine ecosystems, land, landscapes, wildlife, and habitats. These impacts can be devastating, often depriving local communities of access to clean water and other essential natural resources (Narasaiah 2003). Rather than alleviating poverty, tourism has at times introduced new social issues such as black markets, drug trafficking, and prostitution (Stronza 2001). Additionally, tourism has been linked to luxury spending, overcrowding, and pollution, all of which contribute to environmental degradation (Honey 1999).

Despite these challenges, there is growing consensus in the literature that tourism's impact on community livelihoods is multifaceted and context-specific. The outcomes depend

on several factors, including the type, location, and scale of tourism development, as well as the extent of community participation in tourism planning and implementation (Wall 1997).

9.1 Literature Review

While examining ecotourism in the Satkosia Gorge Sanctuary, Odisha, Udgate (2008) observes that the advent of ecotourism has generated alternative livelihood opportunities for local communities. According to his findings, households that traditionally depended on fishing have diversified their income sources by participating in various tourism-related services, thereby enhancing their overall earnings. Similarly, Sharma et al. (2000) discuss the sustainability and economic advantages of large cardamom cultivation in the Sikkim Himalaya, underscoring the potential of environmentally compatible livelihood practices.

Chaturvedi (2004) argues that the expansion of ecotourism has significantly altered livelihood systems in Garhwal. Whereas agriculture once constituted the principal economic activity, a gradual transition toward tourism-based employment has emerged in recent years. These transformations have been catalysed by state-led interventions, including the development of tourism infrastructure and the provision of incentives to promote ecotourism. The success of biodiversity conservation, as Ghosh-Harihar et al. (2019) emphasise, is contingent on securing the support of local communities, which can be achieved by ensuring that they derive tangible economic benefits from nature-based tourism. In this regard, Ferraro and Hanauer (2014) report that protected areas in Costa Rica reduced poverty levels in neighbouring communities by 16 per cent, primarily through the promotion of ecotourism. Comparable evidence is provided by Xaba et al. (2024), Stronza et al. (2019) and Mohanty et al. (2024) who recorded similar poverty-alleviating contributions of ecotourism in different areas across India, Central America, Europe, Africa, and the Asia-Pacific region.

Amposta (2009) posits that the development of tourism clusters in emerging economies can function as a catalyst for improving infrastructure and decentralising economic activity. This occurs, Richins and Scarinci (2009) argue, because tourism clusters attract foreign exchange, generate employment and income in sectors such as accommodation, transport, and handicrafts, and stimulate broader infrastructural development.

In contrast, critical perspectives highlight the potential adverse consequences of ecotourism. Mohanty (2007) contends that ecotourism enterprises are heavily dependent on natural ecosystems, which traditionally sustain local communities through on-farm and off-farm activities. The introduction of tourism into these settings, he argues, increases competition for natural resources, exacerbates environmental degradation, and ultimately threatens local livelihoods. As ecotourism commodifies natural habitats for tourist consumption, the risks of resource deprivation and negative socio-ecological impacts are heightened, often leaving host communities excluded from the benefits derived from their own natural assets. Aligning with this critique, Aparna (2007) maintains that tourism

development in ecologically sensitive and culturally distinct regions can exert substantial pressures on local populations.

Ryan (1991) further asserts that as tourism evolves from the exploratory phase toward mass tourism, progressive community displacement, socio-cultural dislocation, and cultural transformation become evident. In their study of the Pachmarhi Biosphere Reserve, Singh and Upadhyay (2011) document a range of negative impacts associated with ecotourism, including water pollution at tourist sites, vandalism, littering, and waste-management challenges. The influx of job-seeking outsiders, alongside the proliferation of hotels and increased tourist flows, has contributed to air and noise pollution, thereby disturbing local wildlife. Additionally, ecotourism expansion has heightened vulnerabilities to sexual exploitation, exploitative labour practices, and the spread of communicable diseases.

9.2 Significance of Present Study

The significance of the present study lies in its attempt to address a critical gap in the understanding of ecotourism's impacts within Western Odisha. Despite substantial literature at both global and national levels, there remains limited scholarly engagement with the socio-economic and ecological consequences of ecotourism in this region—an area marked by rich biodiversity, ecologically sensitive forested landscapes, and culturally distinctive indigenous communities. Existing research has predominantly focused on Himalayan, Central Indian, or international contexts, leaving Western Odisha largely underrepresented in academic discussions.

By situating Western Odisha within this broader body of knowledge, the present study contributes in three important ways:

Contextual Specificity: It offers region-specific empirical insights into how ecotourism is restructuring livelihoods, influencing social relations, and transforming cultural practices in communities shaped by unique ecological and socio-cultural conditions.

Balanced Assessment: It provides a nuanced examination of both the opportunities generated by ecotourism, such as livelihood diversification and community empowerment, the challenges arising from environmental pressures, resource-use conflicts, and socio-cultural disruptions.

Policy Relevance: It generates evidence that can guide state-level ecotourism policy, community-based conservation approaches, and sustainable development planning, thereby supporting more equitable and environmentally responsible tourism interventions.

In doing so, the study fills a crucial research void by offering a comprehensive, context-sensitive analysis of ecotourism's multifaceted implications in Western Odisha and contributes valuable insights for shaping sustainable development trajectories in the region.

9.3 Methodology

The present paper examines the impact of ecotourism on rural livelihoods in Odisha through a multidimensional lens. Guided by the Sustainable Livelihoods Framework, it evaluates five forms of capital—social, physical, financial, natural, and human.

The paper describes informations across five ecotourism destinations in Odisha: Khandadhar Nature Camp, Hirakud Dam, Nrusinghnath, Karlapat Wildlife Sanctuary, and Debrigarh Wildlife Sanctuary. These sites were purposively selected due to their significant tribal population concentrations. From each site five surrounding villages were selected based on the tribal concentration. From these five villages 60 respondents were interviewed based on ethnic representation. In addition, government officials directly engaged in ecotourism management at each site were interviewed.

Altogether, the study included 300 households from 25 villages, 75 service providers (including tour guides, porters, cooks, hotel and lodge operators, and shopkeepers), and seven government officials at different administrative levels. Data collection employed a combination of anthropological methods such as participant observation, structured and semi-structured interviews, case studies, and focus group discussions. These approaches enabled the gathering of perspectives from diverse stakeholders regarding ecotourism practices, livelihood transformations, community perceptions, and the broader implications for conservation and development.

Secondary information was drawn from published and unpublished government reports, policy documents, and scholarly literature across disciplines such as economics, anthropology, and geography. The DFID (Department for International Development) Sustainable Livelihoods Framework served as the analytical tool to assess how ecotourism initiatives shape local livelihoods within the study regions.

Table No: 9.1: Community wise Households Distribution

Community Composition	Number of Participants	Percentage
General category	25	8.33
Other backward castes	63	21
Scheduled castes	71	23.67
Scheduled tribes	141	47
Total	300	100

Source: Based on primary data collected from the field.

Of all these five tourist destinations, around 300 households comprise 47% tribal households, 23.67% Scheduled Castes, 21% other backward castes, and 25% general category (Table No: 9.1).

9.4 Profile of Tourist Destination

This section engages with sample tourist destinations for investigation.

9.4.1 Khandadhar

The Khandadhar waterfall, a spectacular site that attracts numerous visitors and picnickers annually, is situated in Bonei block of Sundargarh district. The place is renowned for its rich iron ore deposits and a perennial waterfall. Tribal communities such as the Paudi Bhuyan and Munda live here, residing in small homes either on hilltops or forested slopes, depending largely on the availability of natural resources, especially forest-based products.

If we look into the community participation in ecotourism from field areas it shows that not all residents of host destinations participate equally in tourism. Some directly engage with tourists as guides, performers, or artisans, while others work behind the scenes as support staff or suppliers. Economically, local hosts differ in their involvement—some work as full-time wage labourers, while others engage sporadically or earn cash by selling goods.

In the Khandadhar region, most of the locals do not interact directly with tourists. Only a few (15%) villagers provide services to visitors, who typically come for picnics and leisure. They are mostly engaged in collection of entry fee, cleaning the sites and cooking in Government guest house. But the income generated from all these activities are not sustainable as it got confined to only few winter months. Due to lack of accommodation facilities and other night activities all most all the tourists leave this place before evening. The Government Departments have not taken any initiations in providing training for value addition to the forest based products and promoting tribal culture.

Tourism impacts host communities in two primary ways: through tourist-host interactions and through the development of the tourism industry itself (Ratz 2002). The promotion of ecotourism has helped local communities in diversifying their livelihoods. While some locals sell forest products, others earn income by providing services. Though these opportunities vary from persons to persons, they nonetheless offer some benefit to local people.

During fieldwork in Khandadhar, researcher observed tribal people collecting tubers and sweet potatoes, boiling them, and selling them onsite. A few households also sell cucumbers and red gram, which helps them generate income by selling forest-based products to tourists. Interviews revealed that about 70% of tourists visiting Khandadhar are interested in purchasing local forest products. Additionally, around 15% of households collect and sell fuelwood directly to tourists who come for picnics.

Ethnographic case studies worldwide have shown that tourism-related wage labour can increase the opportunity costs of subsistence activities. Oliver-Smith (1989) documented a case in Spain where locals replaced farming with tourism labour, ceasing subsistence activities and becoming more dependent on external sources. This shift is problematic during lean tourist seasons when economic alternatives are scarce. Most tourists visit Khandadhar during winter, which overlaps with the agricultural season. Consequently, only a few agricultural labourers switch to tourism-related work during this period. Researchers found

that about 25% of villagers assist tourists by washing utensils and sometimes receive leftover food or cash in return for their help.

This income is seasonal, primarily available in winter and very low. Although the Paudi Bhuyan Development Agency (PBDA) established a market complex for local villagers, it operates only three months per year. Data from various stores and tea stalls indicate that tourism promotion has increased local incomes. The rise in visitors has boosted monthly earnings, with around 70% of store and tea stall owners reporting monthly incomes more or equal to seven thousand rupees (Table No 9.2).

Table No. 9.2: Average Monthly Income of Variety Store and Teal Stalls

Name of the Site	Income Ranges				Total
	Bellow Rs. 5000	Rs. 5000-7000	Rs. 7000-10000	Above Rs. 10000	
khandadhar	---	2 (20%)	5 (50%)	3(30%)	10
Hirakud Dam	1(10%)	-----	2(20%)	7 (70%)	10
Debrigarh	2 (20%)	3(30%)	1(10%)	4(40%)	10
Nrusinghnath	---	3 (30%)	1(10%)	6 (60%)	10
Karlapet	1(10%)	1(10%)	3 (30%)	5(50%)	10
Total	4 (8%)	9 (18%)	12 (24%)	25 (50%)	50

Source: Based on primary data

During fieldwork, it was revealed by almost all the villagers that they face huge problems during winter. As most outsiders come for tourist purposes, the price of local produce and other necessary items increase. It created many problems for poor rural households with low incomes who could not run their houses during that time. The interaction with villagers reveals that the forest-based income has not increased due to ecotourism. Due to the initiation of PBDA, people are more involved in management. Around 82% of households claim that their income has not increased due to ecotourism (Table No. 1.3). They claim that whatever profit they received was primarily due to the initiation of PBDA, not by any other government agency or the forest department.

Table No. 9.3: Households Response towards the Enhancement of Household Income

Name of Tourist Site	Response of the Household	Community of the Respondent				Total
		GC	OBC	SC	ST	
Khandadhar Waterfall	Yes	-----	1	-----	10	11 (18 %)
Hirakud Dam		2	5	2	0	9 (15 %)
Debrigarh Wildlife Sanctuary		-----	-----	-----	1	1 (2%)
Nrusinghanath		3	16	5	3	27

						(45 %)
Karlapat Sanctuary		----- -	----- -	----- ---	----	----
Khandadhar Waterfall	No	-----	1	5	43	49 (82 %)
Hirakud Dam		12	19	14	6	51 (85 %)
Debrigarh Wildlife Sanctuary		5	3	24	27	59 (98 %)
Nrusinghanath		3	16	6	8	33 (55 %)
Karlapat Sanctuary		-----	2	15	43	60 (100 %)
Total		25 (8%)	63(2 1%)	71 (24%)	141(4 7%)	300

Source: Based on primary data collected from field based research

9.4.2 Hirakud Dam

Hirakud Dam, considered the longest earthen dam in the world, attracts tourists throughout the year. Two iconic towers—Gandhi Minar and Nehru Minar—stand on either side of the dam, enhancing the site's beauty.

Despite the vast potential for increasing rural income through tourism, little attention has been given to its development. Only a few villagers support tourism-related activities as a means of livelihood. Approximately 20% of the villagers are involved in assisting tourists. They report gaining some benefits from tourism, such as opportunities for manual labour. They help tourists by washing utensils and sometimes receiveing leftover food. Occasionally, they are given small amounts of money in return for their services. However, this income is seasonal, mostly earned during winter months and very low.

Only a few households have managed to diversify their livelihoods due to the rise of ecotourism. A beautiful garden near the Minar premises employs over 20 people as sweepers, gardeners, and security personnel to maintain the park and observation towers. Around 5% of local households operate stalls near both Minars. A few temporary stalls—selling tea, snacks, and cold drinks—have been set up in front of the Jhankarani Temple near Nehru Minar between December and February.

Approximately 5% of households also run temporary mobile vendors selling fruits, nuts, betel leaves, and cigarettes due to the promotion of ecotourism. Field data reveals that

nearly all small variety store and tea stall owners are from local communities, and around 90% of them earn equal to or more than ₹7,000 per month (Table No. 9.2). However, about 85% of households reported that their income has not increased significantly due to ecotourism (Table No. 9.3). Around 50% of the respondents said they were utterly unaware of tourism related activities due to the lack of a platform or opportunities for interaction with government departments. The local community believes they should have a voice and representation in tourism planning and development.

9.4.3 Karlapet Wildlife Sanctuary

The Karlapat Sanctuary is located in the Kalahandi district of Odisha, a region rich in archaeological findings, historical monuments, and cultural as well as religious sites. The livelihoods of the local people largely depend on the forest and daily wage labour in Bhawanipatna.

Although the Government of Odisha has taken some steps to promote ecotourism, the households interviewed reported that the introduction of ecotourism has neither increased their household income nor expanded opportunities for alternative livelihoods (Table No. 1.3). Almost all households still rely on forests for their subsistence. The forest department has not undertaken any initiatives to develop forest-based enterprises in the region.

The illagers believe that promoting ecotourism alone should not be considered a complete solution for environmental conservation and livelihood improvement. Farmers cultivating land near the boundaries of the Karlapat Wildlife Sanctuary are especially vulnerable to crop damage. Elephants often raid crops when they are ripe and most nutritious. Bull elephants tend to raid more frequently than family herds.

9.4.4.Nrushinghnath

The famous temple of Lord Nrushinghnath is located 4 kms from Paikmal in Bargarh district and 165 kms from Sambalpur. In addition to the temple, the area is known for the scenic beauty of the Gandhamardan Hills. Nrushinghnath is a popular and attractive pilgrimage site. The location holds not only ritualistic significance but also provides ample livelihood opportunities for the local population through ecotourism.

Many locals are either fully or partially dependent on the vast Gandhamardan Mountain for the extraction of natural resources. During discussions regarding the impact of ecotourism on rural livelihoods, around 25% of households reported an increase in their forest-based income. Meanwhile, 45% of households stated that ecotourism has enhanced their income and has widened opportunities for alternative sources of income (Table No. 9.3).

Some locals sell various stationery and handicraft items to the tourists. Others are engaged in operating hotels, restaurants, tea stalls, betel shops, and other small businesses for their livelihood. As part of traditional livelihood practices, women in the region collect Sal and Rengal leaves from the forest, make leaf plates, and sell them in nearby markets or at

stalls near the temple. Ecotourism has also provided new opportunities for local tribal women to sell minor forest products. Interactions with local households indicate that about 30% of them are engaged in selling such products. The annual festivals, folk dances, and songs of the local communities are promoted by the Department of Culture and the Forest Department, with minor enhancements, to entertain and engage tourists. To support the marketing of these herbal products, the Gandhamardan Herbal Processing and Sales Centre is being set up at Nrushingnath, employing many local residents. Numerous tourists visit this herbal outlet to purchase valuable medicinal and health-related products.

Field data analysis reveals that around 70% of owners of variety stores and tea stalls earn more than ₹7,000 per month (Table No. 9.2).

9.4.5 Debrigarh Wildlife Sanctuary

Debrigarh Wildlife Sanctuary is located in the Baragarh district of Orissa. More than 20 villages are located in and around the sanctuary, with local communities depending on the forest for their livelihood and daily needs. Traditionally, villagers collected fuelwood, timber, and bamboo to meet their basic requirements. They also gathered forest products such as mahua flowers, sal seeds, kendu leaves, mushrooms, honey, and other items to sell in nearby towns.

However, after the forest was declared a sanctuary and designated as an ecotourism site, villagers faced restrictions on the free extraction of forest resources.

The implementation of the ecotourism project in Debrigarh brought renewed hope to the local communities. The Forest Department began mobilising villagers to participate in various social initiatives and encouraged them to adopt alternative sources of income through these programmes. Over the decades, Debrigarh Ecotourism has developed into a sustainable model that continuously supports local communities. It is a community-owned and managed initiative designed to enhance livelihoods without harming the ecosystem.

With support from local residents, a community center was established in Dhadrakusum village. This center has played a crucial role in managing ecotourism and conserving biodiversity. Debrigarh Ecotourism aims to inspire, educate, and empower communities to sustainably use natural ecosystems as sources of livelihood through responsible tourism, rather than exploiting them for short-term gains.

To improve the well-being of the local population, the ecotourism society at Debrigarh Wildlife Sanctuary has organised several training programs in areas such as bamboo handicrafts, fisheries, watchkeeping, boating, eco-guiding, hospitality, catering, infrastructure development, and marketing. To enhance local capacity, the Forest Department has also arranged exposure visits for villagers to the Satkosia Wildlife Sanctuary.

To make Debrigarh more attractive to visitors, local communities now offer ecotourism cottages, picnic spots, wildlife viewing opportunities, and departmental boat services.

In support of marginalised communities, the Forest Department has acted as a mediator between the Fisheries Department and local fishing communities. Training has been provided, fishing nets distributed to 20 households, and fishing areas designated. These households now generate revenue for the Fisheries Department. To strengthen institutional capacity, efforts have been made to build local institutions that empower villagers to protect and sustainably use forest resources.

The Forest Department has also promoted the use of country boats as an alternative livelihood. Traditional fishing communities were encouraged to use their boats for ecotourism. A token system was introduced, charging ₹20 per boat. While the introduction of motorboats offered a new livelihood opportunity, it also led to challenges. Increased boat traffic polluted the waters and disturbed fish habitats, forcing fishers to travel farther to catch fish and leading to a decline in local fishing.

Furthermore, the Forest Department has not adequately provided environmental awareness to tourists. The intrusive presence of motorboats near breeding areas, combined with the generally recreational nature of tourist activities, suggests a lack of concern for ecological impacts beyond economic or personal enjoyment.

To diversify rural livelihoods, the Forestry Department has introduced village stay programs, offering tourists a chance to experience ethnic cuisine and traditional accommodations.

Field data has yielded varied results. Only 2% households in this area claim that the introduction of ecotourism has increased their household (Table No. 1.3). While approximately 42% of households felt that ecotourism had expanded opportunities for alternative income, only 2% reported an actual increase in income (Table 1.3). However, the rise in tourism has positively impacted local businesses. Interactions with tea stall and variety shop owners indicate that around 40% of them earn more than ₹10,000 per month (Table 9.2).

9.5 Results and Discussion

Ecotourism has become an increasingly important activity within forestry that should be actively promoted to maximise benefits for local communities and generate revenue for forest conservation. However, given the world's dense population, protecting flora and fauna is challenging unless the country and local people gain economic benefits (Salam et al. 2000). This paper attempts to discuss various livelihood issues related to ecotourism across different study areas in western Odisha, India. It has endeavoured to explain the positive and negative impact of ecotourism.

In the context of the present study, it was found that forest-based products, small livestock, wild animals, fish, and other aquatic resources serve as major sources of livelihood in the study areas. The tourism is also a source of livelihood.

Tourists visiting the studied sites have significantly impacted the natural environment and biodiversity. It has both negative and positive impacts on natural capital. During fieldwork, it was observed that when tourists used to go for tracking, they created alternative routes. It contributes to soil erosion, impaction and plant damage. Especially in the case of Khandadhar, it was observed that the inflow of tourist to observe the waterfall and their tracking activities had disturbed the ecological movement of different wild animals. Where ecotourism activities involve wildlife viewing, it can scare away animals, disrupt their feeding and nesting sites, or acclimate them to the presence of people. Similar cases are described by Sgenzarle (2025) while analyzing the effects of recreational activities on wild mammals. Even our interaction with tourists in the field reveals that around 41.33 per cent of tourists do not maintain any hygienic environment while roaming in the field (Table No: 9.4). Around 70 per cent of tourists recognise that overuse of forest areas and overcrowding have the potential to degrade the natural areas further. While discussing with villagers in field areas except Hirakud, it was found that tourists used to set fire to the forest, that destroy the vegetation and wildlife habitat if they run out of control. Most visitors visit these sites for picnic purposes and never bother about forest fires. After cooking they leave the place without putting up the fire. Another issue raised is trampling. Tourists often venture off the trail in pursuit of birds and animals, damaging the underlying vegetation and soil.

Table No: 9.4: Tourists Perception towards the maintaining hygienic environment

Area from where Tourist came	Maintain hygienic environment while visiting		Total
	Yes	No	
Within District	20	25	45
Within state	54	36	90
Outside state	14	1	15
Total	88 (59%)	62 (41%)	150

Source: Based on primary data

The influx of tourists into remote areas for ecotourism purposes can improve quality of life through increased cash flow and raise environmental awareness among locals via interaction. The environmental conditions of natural areas and the quality of the ecotourism experience are influenced not only by the number of visitors per se but by the impacts those users have on the ecological and social conditions (Prosser 1986). Tourist activities mainly lead to problems of water pollution, groundwater contamination, and depletion of precious groundwater resources, besides leakage of tourist benefits outside the local community. It also brings both direct and indirect impacts on wildlife.

A negative result was also observed in the case of villagers' perception towards tourists in different study areas. Around 85.33 per cent of households claim that the tourists' intervention has polluted the local biodiversity. The entire household in Hirakud Dam, Debrigarh Wildlife Sanctuary and Karlapat Sanctuary reveal that the tourist flow to their region has destroyed the local environment and biodiversity and around 85% of the villagers in the study area claimed that the tourist inflow has polluted the local environment. (Table No: 9.5). Baloch et al. (Mohanty) from Pakistan found a similar kind of observation while studying the Impact of tourism development on environmental sustainability.

Table No. 9.5: Villagers' perception towards the type of problems created by tourists

Sl. No.	Name of Ecotourism site	Problems created by tourist create in field areas				Total
		Polluting local environment	Using local people as cheap labourer	Destroying the local culture	Passing comment to female	
1	Khandadhar Waterfall	36	10	4	10	60
2	Hirakud Dam	60	0	0	0	60
3	Debrigarh Wildlife Sanctuary	60	0	0	0	60
4	Nrusinghanath Temple	40	0	13	7	60
5	Karlapat Sanctuary	60	0	0	0	60
Total		256 (85%)	10 (3%)	17 (6%)	17(6%)	300

Source: Based on primary data

Ecotourism activities demand structural construction, hotel complexes, and restaurants, which invade and affect the natural beauty (Mohanty 2007). Around 30% villagers in Nrusingnath and 40% villagers in Debrigarh wildlife area claims that the construction work for expansion of ecotourism has destroyed the natural beauty. The thrust of ecotourism was to conserve biodiversity and make people aware of such conservation. A debate has been raised about whether the rise in eco-tourism and the spread of picnic sports help conserve the local biodiversity. The data collected from the field highlight that 65% of the households feel that the tourists have no role in conserving the local biodiversity; rather, it depends on the forest department. However, the rest of the households feel that promoting tourism has helped conserve the local natural resources as tourists play an important role in preserving them (Table No. 9.6). The tourist arrival has encouraged local communities to preserve their natural capital to attract more and more tourists.

Table No. 9.6: Households' Perception towards the Role of Tourists in Biodiversity Conservation

Name of Ecotourism site	Reponses of the of Respondent		Total
	Yes	No	
Khandadhar Waterfall	0	60	60
Hirakud Dam	0	60	60
Debrigarh Wildlife Sanctuary	60	0	60
Nrusinghanath Temple	45	15	60
Karlapat Sanctuary	0	60	60

Total	105 (35%)	195 65%)	300
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Source: Based on primary data collected from field based research

Field observations indicate that, under the banner of ecotourism, private investors have increasingly penetrated local markets and secured dominant positions within the tourism economy. This trend is particularly visible in Nrusinghnath, where the majority of hotel owners are outsiders who have acquired local land and constructed commercial establishments. Such developments have contributed to significant in-migration of non-tribal populations into tribal regions, exerting adverse effects on indigenous livelihoods and local economic systems. The expansion of tourism activities has also produced a series of direct and indirect environmental pressures, including water and noise pollution, habitat disturbance, and broader ecological degradation.

The negative impacts are especially pronounced in the wildlife sanctuaries under study. Approximately 43% of households in Karlapat and 34% in Debrigarh report that increased tourist inflow has disrupted wildlife behaviour, including feeding, breeding, mother–offspring interaction, predator–prey relationships, and general habitat use. These findings resonate with Bisht and Singh’s (2016) observations in Corbett National Park and earlier warnings by Mathieson and Wall (1982) regarding the detrimental effects of photography on breeding success among coastal bird species in the Galapagos Islands.

The conversion of natural land into tourism infrastructure has accelerated deforestation and habitat fragmentation. Around 60% of surveyed households state that vehicular movement and tourist activities inside sanctuaries threaten biodiversity by disturbing species’ reproductive, feeding, and social behaviours. The construction of facilities such as visitor centres, roads, parking lots, and trails has further exacerbated habitat degradation, a pattern similarly documented by Sewak (1996) and Karis (2013).

Despite Forest Department restrictions, the use of loudspeakers and music systems remains common in Karlapat. Field visits recorded the use of tape recorders with clear behavioural impacts on wildlife. In Debrigarh, motorised boats have significantly altered avian behaviour; villagers reported a decline in the arrival of migratory birds and noted that motorboats reduce fish availability by destroying eggs and young fish. Occasional forest fires—linked to tourist negligence in Karlapat and Khandadhar—have caused additional ecological damage. Comparable findings were reported by Paudel (2025) regarding similar disturbances at Jagdishpur Lake, Nepal.

Data from tour operators and travel agencies reveal that around 70% lack awareness of ecotourism principles and contribute little to biodiversity conservation, often exacerbating environmental degradation. Forest officials at Karlapat note that local communities—primarily from tribal and Scheduled Caste groups—are sometimes reluctant to participate in forest protection due to historical grievances and livelihood pressures. Activities such as tree felling for shifting cultivation, ant-egg collection, and hunting persist, while the Forest Department faces operational challenges due to funding shortages and constraints imposed by Naxalite activities.

Sanitation facilities across the study sites are largely inadequate, except in Nrusinghnath and Khandadhar. Open defecation, urination, and littering—especially of

plastic waste—are common practices among tourists, leading to contamination of streams and rivers that serve as primary water sources for local communities and wildlife.

Although ecotourism is ostensibly grounded in environmental conservation, in practice it has displaced many local people, disrupted livelihoods, and transformed their habitats into contested political spaces. Local resentment is fuelled by the fact that user fees collected at sanctuaries rarely benefit the surrounding communities. Adults in Karlapat and Debrigarh show little attachment to protected areas, rarely visiting them or expressing interest in the species being conserved. In Khandadhar, villagers report that tourists collect forest products freely, while inadequate oversight from forest officials has led to further livelihood losses.

Community participation remains central to sustainable natural resource management. Approximately 70% of surveyed households believe that community involvement can strengthen biodiversity conservation, generate state revenue, and provide local income. Field observations confirm active participation in conservation efforts in Nrusinghnath, Khandadhar, and Debrigarh, although ecotourism promotion remains limited except in Debrigarh. Here, the Forest Department has initiated fodder plantations, grassland protection, water conservation structures, restrictions on grazing, wildlife health monitoring, and the creation of artificial salt licks. Regular patrolling, anti-poaching measures, and the establishment of an Ecotourism Society have further encouraged community engagement, though past injustices continue to shape local attitudes.

In Nrusinghnath, communities depend heavily on the forest resources of Gandhamardan Mountain. To support livelihoods and conservation, the Forest Department has established 15 Vana Sangrakhyan Samitees (VSS) across multiple villages, focusing on medicinal plant conservation and sustainable harvesting. The Paudi Bhuyan Development Agency (PBDA) at Khandadhar has introduced similar community-based conservation initiatives.

Despite these efforts, villagers around Karlapat and Debrigarh report recurrent crop losses—approximately 20% annually—due to wildlife incursions. Their calls for legal protection measures have gone unaddressed, weakening their motivation to participate in biodiversity conservation.

The growing influence of ecotourism on tribal and rural lifeworlds has raised serious concerns among social scientists. Numerous case studies highlight that the economic benefits of ecotourism often accrue to the state or private investors rather than to indigenous communities, contributing to local alienation. In the present study, 99% of households report that tourist activities have generated multiple problems. Tribal communities in Khandadhar and Karlapat have experienced significant cultural erosion. Ecotourism expansion has not only reshaped their natural landscapes but also disrupted the longstanding symbiotic relationship between tribal communities and forests.

Furthermore, intrusive tourist behaviour has reduced tribal cultural practices to commodified “performances,” leading to what villagers describe as cultural dispossession or even cultural genocide. Their myths, legends, folktales, and folk songs—central to their

identity—are increasingly endangered. Villagers overwhelmingly attribute environmental pollution to tourists, with 85% citing irresponsible waste disposal as a major concern, and 6% reporting cultural disturbances linked to tourism.

Table No.9.7: Villager’s View about the Tourists

Sl. No.	Name of Ecotourism site	Tourist creating problem		Total
		Yes	No	
1	Khandadhar Waterfall	56	4	60
2	Hirakud Dam	60	0	60
3	Debrigarh Wildlife Sanctuary	60	0	60
4	Nrusinghanath Temple	60	0	60
5	Karlapat Sanctuary	60	0	60
Total		296 (99%)	4 (1%)	300

Source: Based on primary data collected from field based research

9.5.1 Impact on Local Languages

The analysis reveals that tourist inflow has had a measurable effect on local linguistic practices. Approximately 38% of households report that the presence of tourists has influenced everyday language use. Traditionally, residents in the study areas communicated primarily in Odia or in their respective tribal languages. However, the steady arrival of tourists from neighbouring Hindi-speaking states has contributed to a gradual shift in linguistic behaviour. In commercial spaces, particularly among shopkeepers and business owners, Hindi has become the predominant medium of interaction, often at the expense of Odia and indigenous languages. This shift suggests an emerging pattern of linguistic accommodation driven by market needs and changing socio-cultural interactions.

9.5.2 Impact on the Marriage System

Marriage, as a bio-psychic and socio-religious institution, is central to shaping family structure, social roles, and community organisation. It represents a socially sanctioned union that establishes both sexual and economic bonds between a man and a woman.

Earlier scholarship indicates that the arrival of tourists in rural areas can influence local social life, often prompting communities to adopt elements of external cultures. The findings from the present study, conducted across rural and tribal regions of Western Odisha, show that while certain changes have begun to appear in local marriage systems, these changes cannot be attributed directly to ecotourism development. Rather, they are associated with broader modern cultural influences that tourists help introduce or reinforce. Importantly, the study found no evidence of marriages between tourists and local residents, indicating that while cultural exposure is occurring, it has not translated into direct marital integration.

9.6 Conclusion

The introduction of ecotourism has had both positive and negative impacts on local communities. The influx of tourists into rural areas has influenced the culture of host communities. The modern source of entertainment has stood as a major hurdle for eradication of their traditional culture.

In practice, ecotourism cannot be regarded as the sole win-win strategy for the sustainable development of both the local population and the region. No doubt it has potentiality to sustain livelihoods of local communities, but we have not succeeded to sustain as the potentiality of tourism is not properly utilized. Several factors—such as government policies, market dynamics, land tenure systems, the tourism trade, ethnicity, class, and gender—must be considered together to promote ecotourism effectively in Western Odisha.

A major challenge facing Western Odisha is the lack of effective promotional campaigns to draw tourists. A comprehensive tourism campaign, aired on television and global media, should highlight the region's rich cultural heritage and scenic beauty, along with essential tourist information—similar to the successful "Incredible India" campaign. Another weak point in Odisha's tourism sector is the lack of public-private collaboration. Effective partnerships between government bodies and private enterprises are crucial for the holistic development of the tourism industry, as exemplified by Sri Lanka.

To transform Odisha into a prominent tourist destination, the state must focus on improving infrastructural facilities. The need for a thoughtful, strategic ecotourism policy is more urgent than ever.

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