

Eco-tourism Development in Sundarbans: Challenges and Opportunities

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Tourism is currently the largest industry in India, accounting for 15% of foreign exchange earnings, with eco-tourism emerging as the fastest-growing sector. While offering significant economic benefits, global tourism has been linked to environmental degradation and human rights concerns. It is essential to optimize the positive impacts of tourism in India while ensuring responsible management to protect the integrity of natural resources inclusive of forests and flora and fauna. The research reveals that millions of people in the Sundarbans impact one heavily rely on its resources, including forests and wildlife. However, the study observed that the forest degradation is escalating, leading to an increase in endangered and extinct species due to the unsustainable utilization of its resources. In practice, the Sundarbans and its surrounding areas offer significant potential for ecotourism. While the inhabitants of the Sundarbans-dependent surroundings are eager to develop various handicrafts, cultural activities, and processed food items that has a giant fee for the improvement of sustainable eco-tourism. it's far determined that fifty five percent families are at once depending on woodland assets at special ranges and consequently they are able to earn around 15% extra money in compare to their common annual income from the eco-tourism activities. The paper aims to offer an outline of the imaginative and prescient and present practices of ecotourism. For this reason, ecotourism have to be delivered with right monitoring, evaluation and management of ecotourism sites for boosting long term conservation.

Keywords: sundarbans, environmental degradation, tourism, resources

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1. Introduction

Sundarbans is a nature faculty of eco traveller. Even though Bengal tiger is the flagship species of this specific mangrove woodland, it also gives many others wonders of the nature to the visitors. The observe changed into performed within the Indian a part of Sundarbans. The deltas of Sundarbans and its mangrove woodland show up highest mangrove diversity. This is the handiest mangrove tiger land of the planet. Alas because of both natural and anthropogenic motives the Indian Sundarbans has shrunken plenty during remaining 2 hundred years. The mangrove ecosystems of Indian Sundarbans make contributions immensely closer to coastal fishery of Jap India apart from its enormous on site cost. Therefore it has become expedient to understand this mangrove eco device below modified conditions and statement ways and method for sustainable use of this precious resources. Sundarbans is spread throughout south 24 parganas district of west bengal, sagardip, namkhana, kakdwip, hendri, bakhali, and gosaba blocks fall underneath south 24 pgs.

Eco tourism is the practice of involving nearby network residing round areas of visitor appeal on the control and conservation of vacationer appeal web sites and the encircling natural surroundings. The local's advantage economically from proceeds accruing from ecotourism, consequently the locals come to understand nature and preserve it for his or her very own benefit. Thus this enables for human existence to war for victory-wildlife warfare, reduces instances of illegal killings of untamed animals and destruction of natural surroundings. Sundarbans is endowed with a wealthy plant life and fauna. This mangrove wooded area has about sixty four plant species which has greater than 90% of Indian mangrove specious with about 60% of general Indian mangrove place which supports the maximum numbers of tigers in a unmarried area some of the tiger reserves of the use of a. The amphibian tiger populace, that's predicted to be over 400 in variety here, has distinct behavioural patterns and this makes Sundarbans tiger reserves of the use of a. The center region of Sundarbans mangrove wooded area place is also conserved as "world heritage web page" as particular by way of the UNESCO within the year of 1987, and as an entire become declared a Biosphere reserve in 1989.

The main timber and large shrubs of the region are "Bain", "keora", "Garan", "garjan", "Genwa", "Khali", "Sun dari", "Hental", "Golpata" etc.

The Royal Bengal Tiger is the king of this woodland, aside from this there also are numbers of endangered species like Cheetah, Wild Boar, and Macaque Fishing Cat and so on. The creeks of Sundarbans from the home of estuarine crocodiles. The aquatic fauna consists of Gangetic Dolphin, green turtle, Olive Ridely Turtle, and different species of crabs, prawns, and fish.

To add to colour and melody there are birds like Rose ringed Parakeet, Crow Pheasant, Pied Myna, Drongo, Bulbul, Tailor fowl, Robin, Brahmini Kite, noticed Dove and many others.

2. Literature Review

Ecotourism inside the Sundarbans, the arena's biggest mangrove forest spanning India and Bangladesh, has attracted academic interest for its potential to stability conservation with socio-monetary improvement.

Bhuiyan (2019) affords proof that accountable ecotourism can without delay guide conservation tasks and community nicely-being when related with environmental schooling. Mondal (2019) gives a strategic framework for sustainable ecotourism inside the Indian Sundarbans, suggesting zoning, education, and law to decrease environmental harm. Mujumdar and Roy (2018) compare the environmental and monetary effects of ecotourism in selected Sundarban villages and recommend for participatory planning fashions. Islam and Hague (2018) behaviour a monetary evaluation and conclude that ecotourism is financially possible if controlled with network involvement and ecological sensitivity. Roy (2017) stresses the significance of involving nearby groups in ecotourism planning to ensure inclusive growth and livelihood aid. The paper also identifies gaps in coverage implementation. Islam and Bhuiyan (2016) verify the possibilities and obstacles of ecotourism inside the Sundarbans. They find that while the region has enormous herbal fee, challenges which includes terrible infrastructure and lack of understanding restriction increase. Debnath (2015) identifies ecotourism as a method to diversify the neighbourhood financial system and decrease dependency on woodland resources.

The paper additionally recommends ability constructing for eco-courses and operators. Hossain and Kabir (2014) survey nearby perceptions and find blended attitudes towards ecotourism—many welcome the profits, however some worry multiplied forest exploitation. Chakrabarti (2014) evaluates the sustainability of ecotourism practices inside the Sundarban Biosphere Reserve and recommends institutional assist and tracking mechanisms. Dey and Kar (2013) explore how ecotourism has created alternative livelihoods within the Indian Sundarbans. Their look at emphasizes the twin advantages of earnings and conservation cognizance. Jahan and Ahmad (2013) examine the ecological wearing capacity of the Sundarbans and stress that tourism quantity must be regulated to defend wildlife habitats. Datta et al. (2012) offer a broader study community-primarily based mangrove control, noting how ecotourism can be included into sustainable forest governance in both India and Bangladesh. Ghosh (2012) highlights ecotourism as a sustainable approach to maintaining the biodiversity of the Sundarban Biosphere Reserve. It emphasizes that controlled tourism, if controlled responsibly, can generate attention and budget for conservation. Bera (2011) opinions coverage gaps in selling ecotourism within the Sundarbans and calls for higher regulatory mechanisms and infrastructure to guide sustainable growth. Rahman and Asaduzzaman (2010) argue that ecotourism should be embedded in environmental making plans to make sure lengthy-time period sustainability. They warn of unregulated tourism threatening the fragile mangrove environment.

The literature collectively concurs at the enormous capability of ecotourism inside the Sundarbans for promoting biodiversity conservation, sustainable livelihoods, and community empowerment. But, it additionally warns of ecological degradation, negative making plans, and inadequate community participation as key dangers. Sustainable development of ecotourism will require balanced policy, neighbourhood involvement, infrastructure

3. Objectives

- To realized approximately eco-tourism in Sundarbans, basically floral variety and faunal lifestyles and threats.
- To do minimizing impact of tourism dangers and environmental and cultural consciousness and recognize.

- Supplying monetary advantages and empowerment for neighbourhood people and raising sensitivity to host countries' political, environmental, and social weather.

4. Methodology

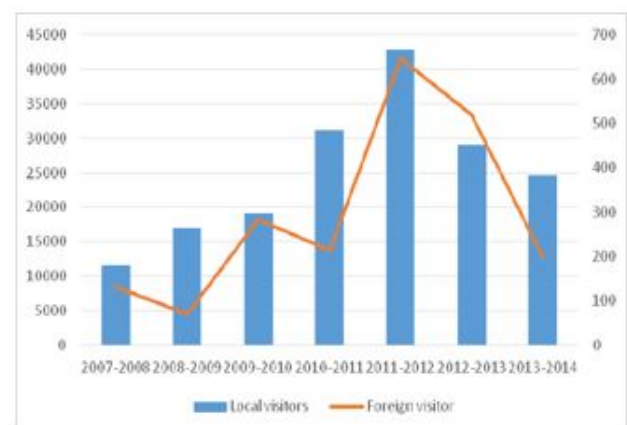
Content analysis method is adopted for literature review. Content material analysis is an observational research approach that is used to systematically examine the content material of all styles of recorded verbal exchange. This method also helps to identify the literature in terms of various categories, thereby creating a realm of research opportunities the review is limited to the published literature including books, conference proceedings.

5. Data Analysis

Currently Tourism in the Sundarban isn't eco pleasant and it does no longer provide travellers with an awesome kind of sports to take part in. furthermore, tourism applications aren't based and authority's involvement can often be hindering. The Sundarban's fragile mangrove eco gadget is threatened by way of biotic pressure, and man-animal conflicts often.

Considering the history information on Sundarban as well as the evaluations from tourism professionals SWOT (Strengths, Weaknesses, possibilities, Threats) evaluation has been carried out for ecotourism in Sundarban. In analysis of the Strengths, Weaknesses, possibilities and Threats for every corporation the following issues emerged:

Chart showing number of local and foreign visitors between 2007 and 2014(in Sundarban West Forest)



Source: Forest Department

Latest information monitor a good sized uptick in tourism, with 216,143 site visitors, including 2,143 worldwide guests, within the monetary year 2022-2023, generating Tk 3.ninety four crore in revenue for the authorities. This marks a terrific growth from preceding years, highlighting the forest's growing appeal and importance to India and Bangladesh's financial system. According to information collected from the local woodland workplace, the wide variety of travellers changed into 1,89,570 within the financial 12 months 2018-2019 and of them, 2,261 came from other countries. The authorities earned Tk 1.51 crore during this era. Inside the financial 12 months, 2019-2020, the variety of travellers was 1, seventy two,979. Of them, 2,317 came from foreign places. A total of Tk 1.87 crore changed into gathered as sales all through this era. Meanwhile, a total of 1,46,211 travellers got here to the Sundarbans within the 2020-21 financial year and the government accrued Tk 1.fifty seven crore from 1,45,891 neighbourhood and 320 foreign tourists. The sales reached Tk 2.24 crore as a complete of one,55,477 vacationers — 1,fifty four,374 nearby and 1,103 overseas — visited the Sundarbans in 2021-2022 economic yr.

The Sundarbans, identified for their difficult network of tidal waterways, mudflats, and a sanctuary for the Royal Bengal Tiger, among different rare natural world, are important for the ecological stability and safety of coastal regions.

But, environmentalists warn that human hobby poses a risk to its biodiversity, emphasizing the need for multiplied cognizance and conservation efforts to ensure the sustainability of this UNESCO international background website online.

Strengths:

- Sundarbans is a properly set up tourism vacation spot with an expansion of natural sights like the Royal Bengal Tiger, estuarine crocodile, mangrove flora, exceptional avifauna etc.
- The area people strongly supporting the want of ecotourism in this area.
- It is UNESCO world heritage web site.
- Desirable wide variety of home and overseas vacationers travelling this destination.
- Particular subculture of the area people.
- Already present tourism infrastructure.

Weaknesses:

- Lack of coordination amongst nearby human beings.
- Little incentive for the local people from tourism in phrases of earnings technology.

Possibilities:

Right ecotourism package improvement concerning neighbourhood humans in selection making and planning so that there may be a larger involvement of the local people.

Diversification of ecotourism merchandise like stay in U. S. boats, trail walks and so forth. A good way to assist in preserving majority of the income generated with the local community.

Threats:

Potential negative environmental influences (damage to mangrove flowers because of upward thrust in salinity, loss of species because of searching.

Pollution with the aid of sewage, dumping of the wastes in river.

Growth in biotic strain due to increase in mass tourism.

Loss of right management inflicting negative impact on this fragile surroundings.

6. Findings of the Study

Eco-tourism specializes in neighbourhood cultures, wilderness adventures, volunteering, and private growth in new approaches to live on the planet. It's far usually defined as travel to locations wherein the vegetation, fauna are the number one sights. Responsible ecotourism includes programs that minimizes the detrimental outcomes of conventional tourism at the herbal surroundings, and cultural integrity of neighbourhood humans. Consequently, further to comparing environmental and cultural elements, initiatives with the aid of hospitality carriers to promote recycling, strength performance, water reuse and the introduction of economic opportunities for nearby groups are a quintessential part of ecotourism. Natural & cultural conservation, renovation and sustainable improvement and so forth. Are a number of the fields closely associated with eco-tourism? Many professionals were concerned in formulating and growing eco-tourism rules.

Eco-tourism is taken into consideration the fastest growing market inside the tourism enterprise, in keeping with the WTO (global Tourism business enterprise) with an annual growth charge of 5% worldwide and representing 6% of the world gross home product.

Environmental Challenges:

1. Atmosphere Fragility- The Sundarbans is a delicate atmosphere, home to endangered species just like the Royal Bengal Tiger and Irrawaddy dolphins. Too much tourism can disturb habitats and disrupt wildlife conduct.

2. Pollutants- Vacationer boats and littering can pollute water and land, affecting both flowers and fauna. Oil spills from boats are a developing situation.

3. Overcrowding- Peak traveller seasons can lead to overcrowding, setting strain on confined infrastructure and growing human-flora and fauna conflicts.

4. Deforestation and Erosion- Creation of resorts and traveller centres might also lead to illegal logging or mangrove destruction, growing the risk of erosion and flooding

Socio-economic Challenges:

1. Limited Nearby Involvement- Often, neighbourhood communities do not advantage equally. Large operators may dominate the industry, leaving locals with only low-paying jobs.

2. Lack of Information and Training- Insufficient training in hospitality and conservation can result in negative experiences for travellers and bad environmental practices.

3. Seasonal Employment- Jobs created by means of ecotourism are regularly seasonal and unstable, not supplying a reliable earnings for locals 12 months-round.

Infrastructure and Policy Issues:

1. Susceptible Regulation and Racking- Lack of strict policies and poor enforcement can cause overexploitation of herbal resources and risky practices.

2. Insufficient Infrastructure- Constrained transport, health care, waste control, and commune centres can hamper the development of sustainable tourism.

3. Natural Failures- Common cyclones, flooding, and growing sea degrees due to weather alternate disrupt tourism and damage infrastructure.

7. Conclusions

The student findings once more proved that eco-tourism can act as an opportunity profits source. Extra than 50% human beings directly depend upon Sundarbans sources in this village and consequently ecotourism exercise can reduce the strain of the Sundarbans. If we introduce a greater wide variety traveller in this village their profits source could be boom in a splendid quantity. However, it desires supports from the government, tourism industry or other relevant organizations like NGOs. Subsequently, ecotourism ought to paintings higher when it's far control sustainable way. For ecotourism to be powerful in its authentic experience there may be a need to develop a proper ecotourism package deal which need to be one-of-a-kind from the present mass tourism programs. At gift a small percent of the area people are engaged in tourism associated activities. Attention ought to be on greater involvement and participation of the area people in ecotourism. This could help in preserving a social stability in terms of income generation of the local community. Therefore, greater care should be taken for the management in any such manner that each the economic and environmental benefits might be managed by sustainable way.

Recommendation

High Quality Effect of Ecotourism:

- The area people strongly assisting the need of ecotourism on this location.
- Repute of Biosphere Reserve and world heritage website online of Sundarban.
- Top range of home and foreign vacationers journeying this destination.
- Unique subculture of the area people.
- Already current tourism infrastructure.
- Social mobilization via JFMs, SHGs, EDCs and so forth.
- Right ecotourism package deal development concerning neighbourhood human beings in decision making and making plans so that there is a larger involvement of the local community.
- Diversification of ecotourism merchandise like live in U. S. A. boats, path walks and many others. For you to help in maintaining majority of the income generated with the area people.

Negative Effect of Ecotourism:

- Loss of coordination among neighbourhood people.
- Low involvement of local human beings in tourism.
- Little incentive for the local people from tourism in terms of profits era.
- Migration of extremely bad landless people to Kolkata in seek of process possibilities.

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