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Environmental Impact & Eco-Tourism Management at Dibru-Saikhowa National Park: A Case Study

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Abstract:

Ecological imbalance of the Bio-geo chemical cycles, destruction of wild life habitat, diminishing compatibility and porosity of the soil and declination of Biodiversity rate are the keystones damages. Eco-Tourism as a concept is sustainable tourism that focuses on minimal impact on the environment and local culture and its objective is to generate income that can be used for the benefit of the local community and to conserve the local biodiversity. Thus Eco-Tourism potentially provides a sustainable approach to Tourism development. However, to realize this potential the adverse effects of tourist activity and associated infrastructure on the natural environment and the Tourism experience must be identified to guide management actions and thus sustain the resources on which Eco-Tourism ultimately depends. This study, conducted in Dibru-Saikhowa National Park at Tinsukia District of Assam, India, reports the impacts of Eco-Tourism from the perspective of tourists' and contributes to a greater understanding of the implications of the Eco-Tourists experience for Eco-Tourism management.

Keywords: Environmental Impacts, Eco-Tourism Management, Dibru-Saikhowa National Park, sustainable approach, etc.

1. Introduction

Eco-Tourism is a field of human activity where conservation and development can wisely and effectively be blended to achieve a mutual goal to the benefit of the people in the community. This kind of tourism should be sensitive to the local communities their land rights, traditions, cultures and way of life. It can be developed effectively only when there is consent and active involvement of the local people, who should become partners in this process.

The tremendous development of the past 200 years long has significantly brought immeasurable prosperity and wealth. But inadvertently it has caused severe and significant ecological degradation which has variety of negative impacts on health and quality of the growing community population. Consequently, the planet earth is spontaneously facing environmental complication including deforestation, desertification, global warming, acid rain, toxic waste, industrial wastes (Brown and Staff of the World Watch Institute 1991, 1992, 1993; Pryde 1992; Smil 1994). The ecological sustainability of current industrial practices becomes more questionable because it was estimated that by the next 20 years by the year 2030, the world population will be double from 5.5 billion to 11 billion (Ehrlich & Ehrlich, 1991). In order to provide the basic amenities to the increasing population, it is estimated that the manufacture of goods and production of energy will need to be increased by 3 to 35 times as compared to the current status. But unfortunately the current technologies, social organization and production practices, this level of production will generate commensurate increase in environmental degradation (Commoner 1990, Frosch and Gallopoulos, 1989; Meadows, Meadows, Randers & Bahrens, 1972). Thus incorporation of enhanced ecological strategies and management policies will play an integral role in the safeguard of the environmental degradation.

1.1. Dibru-Saikhowa

Dibru-Saikhowa is one of the significant biodiversity spot situated in the south bank of river Brahmaputra in the extreme east of Assam. It lies between 27°30' N to 27°45' N latitude and 95°10' E to 95°45'E longitude at an average altitude of 118 m (Range 110-126m) above the mean sea level. Biogeographically the area exhibits the properties of both the Indian and Malayan Sub regions and represents the North-Eastern India-Brahmaputra valley Bio-geographical province (9A). It is a safe haven for many rare and endangered species. The richness of habitat types, urban landscapes often have high species diversity even including rare and threatened species (Shepherd 1994). It's famous for its pristine beauty and is also essential as residents for recreational areas.

Dibru-Saikhowa is one of the five National Park of Assam and one of the 34 hotspots in the world. It is one of the few river island National Park in the country. It provides the eye soothing sights of migratory and rare endangered birds, the wild feral horse, the hoolock gibbon and river dolphin among other delights.

This ecosystem is a home to a wide range of animals including mammals, birds, reptiles, amphibians, fishes, butterflies and insects. The park is inhabited by 35 species of mammals, 502 species of birds, 104 species of fishes, 43 species of reptiles, 680 species of plants etc.

Dibru-Saikhowa National park considered to be the largest national park of Assam, spread over an area of 650 Sq. Km and is bounded by the mighty Brahmaputra river and Arunachal hills in the north and Dibru and Patkai hills on the south. It is located at about 13 kms from Tinsukia town (a commercial hub of the state) and about 515 kms from Guwahati (Capital City). It was declared as a Wildlife Sanctuary in the year 1986 by the Govt. of Assam by uniting two reserve forests. It was elevated to the Wildlife National Park status in the year 1999 restricting its core area to 340 Sq. Km. with a large buffer zone. The park is generally kept open for tourist from the month of November to April or as notified the National Park authority. A written permission from the Park authority for entering into the National Park is obligatory. No entry after the sunset and before sunrise is permitted in the park. Guijan ghat and Saikhowa ghat are the two entry points for tourists to this park.

Dibru-Saikhowa enjoys a tropical monsoon climate with a hot and wet summer and a cool and usually dry winter. The annual rainfall ranges from 2300mm to 3800mm. the main rainy months are June, July, August, and September. The annual temperature of the area ranges from 7 degrees Celsius to 34 degrees Celsius. The Park itself received about 750- 800 visitors per year, mainly of Indian origin, with only a few hundreds of being overseas visitors. The increasing number of overseas visitors to this place is probably due to the success of promotional strategies such as '*Incredible India*'. Despite this growth in visitors to the Park, very little information exists regarding the environmental (biophysical and social) impacts of visitor activity and the effect of these impacts on the visitor experience.

1.2. Eco-Tourism

Eco-Tourism is derived from two words- 'ecosystem' and 'tourism'. Collectively, hence it is termed as eco-tourism. The system in which we live is called ecosystem and tourism means the practice of travelling for pleasure. Thus, a tourism which contains a visit to and Ecosystem is known as Eco-tourism. Apart from this, Eco-tourism not only includes travelling to such ecosystem, but also to conserve the nature and its objects in a fruitful manner. It is noted that there are about 8 National Parks and 441 Sanctuaries in India which works for the protection and conservation of wildlife resources.

Eco-Tourism is a significant management strategy supported by the Government of India which contributes to the preservation of the environment. Eco-Tourism is a form of Tourism which strongly includes travelling to destinations where diversity of flora fauna and cultural heritage are the primary attraction. It generally includes relatively undisturbed areas. The various significance of Tourism is to educate the traveler, to provide funds for ecological conservation, to directly benefit the economic development and political empowerment of local communities and lastly to foster for different cultures and for human rights. Since long Eco-Tourism has been considered as a critical endeavour by the environmentalists, so that the future generation may experience such destination relatively untouched from human intervention. The integral role of Eco-Tourism incorporates enhanced management strategies involving conservation of biological and cultural diversity through ecosystem protection, recycling, energy efficiency, water conservation and creation of economic opportunities for local communities. It appeals to advocate both environmental and social responsibility.

1.3. Objective of the Study

The objective of this study is

- To draw a valid standpoint regarding Eco-Tourism in maintenance and management of conservation strategies of biodiversity.
- Moreover, the study focus on unacceptable visitor impacts, potential indicators based on these impacts identified and visitors support for potential management actions/ programmes at Dibru-Saikhowa National Park.

2. Review of Relevant Literatures

The study highlights on the prior research works performed on various management and conservation strategies including both Government and Non-Government roles. Legislation on a Community Right (1996) has been adopted to provide more access to information regarding potential hazards from industrial operation. India is also signatory to Basel convention (1989) on Control of Trans boundary movement of hazardous wastes and their disposal. The (Hazardous Wastes Management and Handling Rules, 1989) was introduced under sections of the Environment Protection Act of 1986. The HWM Rules (1989) provide control of generation, collection, treatment, transport, import, storage and disposal of wastes. The Government has moved to enact into legislation, additional incentives for industries to comply with environmental provisions and bring market forces out in the business of environment. In this vein the (Public Liability Act 1998) was adopted to require industrial dealing with hazard) to ensure against accidents or damages cause by release of pollutants.

The environmental impacts of Eco-Tourism have been published by a number of writers. Some have focused on Tourism in natural areas (Cohen, 1978); (Mathieson & Wall, 1982); (Buckley & Pannell, 1990); (Andereck, 1995); (McArthur, 1996); (Shackley, 1996), while others have taken a specifically Eco-Tourism approach (Boo, 1990); (Olindo 1991); (Sherman & Dixon, 1991); (Ceballos-Lascrain, 1996); (Commonwealth Department of Tourism, 1994); (International Centre for Tourism Research, 1995), and those concentrating on tropical rainforests include (MacKinnon et al., 1986), (Valentine and Cassells, 1991); (Valentine, 1992), (Kinnaird and O'Brien, 1996), and (Wearing and Larsen, 1996). The studies considered to be relevant to this Research paper are a number of visitor impact studies conducted in natural areas (Anderson & Manfreda, 1985); (British Columbia Forest Service, 1995); (Lucas, 1990); (Department of Conservation and Land Management, 1991); (Dowling, 1993). The conclusion that can be withdrawn from the above literature studies can be summarized below: The benefits of Eco-Tourism include an enhanced appreciation of natural environments, both in terms of their intrinsic and economic worth for protection and conservation; the educational value of exposing visitors and locals to nature and conservation; and the potential of Eco-Tourism to motivate the designation of additional natural areas

for conservation and protection. Conversely, pressures originating from inappropriately managed infrastructure and visitor activities can adversely impact the receiving environment. Negative impacts on terrestrial ecosystems include destruction of plant and wildlife habitats; soil and dune erosion; soil compaction; distraction of soil stability; distraction of nutrient cycles; and reduction in biodiversity. Impacts on vegetation include structural alterations to plant communities; damage due to trampling; the introduction of exotic species carried in on clothing; and direct removal of specimens through harvesting. Further to these biophysical impacts, increased human presence may lead to disturbances such as litter, as well as air and noise pollution caused by vehicles. Although there is limited understanding of the effects of Tourism on wildlife (Andereck, 1995), all of the aforesaid impacts may have deleterious effect.

3. Research Methodology

The research methodology was based on the prior literature reviews which were put forwarded by the different research scholars depending on their research works on the role of Eco-Tourism in management strategies and conservation of Bio diversity. Literature reviews on ecological imbalance and degradation of the quality environment were also taken into consideration for the study.

The literature reviews identified the possible impacts of Eco-Tourism which were then used to guide questionnaire development to collect primary data. The questionnaire was designed to gain information from visitors visiting Dibru-Saikhowa National Park. The sampling frame was limited to the national park visitors. Visitors were asked if they would like to participate in the study, and if they agreed, were given a brief description of the study objectives and questionnaires accordingly.

The questionnaires were distributed at the both of the entry points of the Park and the places where most visitors stay some stage of their visit. The study was conducted during Nov- Dec, 2010 with few research scholars of Dibrugarh University, Assam. 104 questionnaires distributed by research scholars, and 16 questionnaires distributed by Park staff. A total of 79 responses were obtained from the 84 questionnaires distributed by the research scholars, and 25 out of 46 questionnaires distributed by Park staff. The questionnaire was written in simple English and comprised three sections: tourist and visit characteristics; actions undertaken; and tourist observation of impacts and management strategies.

4. Results and Discussion

As Dibru-Saikhowa is a biodiversity hotspot with numerically high tourist visits, so the members associated with the national park efficiently involves in the maintenance of the park. Such maintenance strategies synchronously contribute to the protection of the environment and conservation of the associated biodiversity. Such management policies ensure the protection of the environment as its quality is continuously degrading with increase anthropogenic activities.

With special reference to the research studies it is quite evident that the fulfilment of the basic amenities of the increasing population community will unfavourably affect the quality of the environment as the relationship between industrial development and pollutant free environment is inversely linked.

Many visitors suggested that education and well organized conservation programs can be used as a potential management tool to aware people regarding the need of well protected environment and for the implementation of waste management practices and also for the conservation of the rare and endangered species.

It is strongly believed that strict restrictions and prohibition of human interference within the protected areas will provide immense justice to the protection acts and policies. But the secondary objectives should be only fulfilled keeping in consideration that the entire ecosystem is not imbalanced and the free movement of the animals and their way of living are not restricted.

So disturbance and human interference within the Core zone is completely restricted, illegal poaching and hunting activities should be punished in accordance to law. Restricted human interference should be allowed only in the Buffer zone in the form of research, student's educational visit, trading activities, excursion, and collection of Germplasm etc.

Such activities in Buffer Zone and Manipulation Zone will aware the people regarding conservation issues and management policies which will ultimately contribute to the maintenance of the quality of the environment to prevent biodiversity loss.

Impacts most frequently observed by the visitors included soil erosion along walk –trails, waste and smelly discoloured water. A number of respondents also commented on waste on the frost floor, water logging along some trails and at the aggravation of wildlife and a lack of enforcement of national park regulations.

For almost all of the impacts, a greater number of respondents expressed concern about the potential impact than the observed impact. The significance of waste as one of the most basic concerns of Dibru-Saikhowa Park visitors is supported by the results of similar studies in Australia (Dowling, 1993), Canada (British Columbia Forest Service, 1995) and the United States (Lucas, 1990).

The intolerance of many visitors to waste (litter) may be explained by the view that littering violates deeply held norms of Western culture, where littering is seen as abuse rather than normal use of natural areas (Lucas, 1990).

The concern with biophysical impacts such as soil erosion and vegetation damage as indicated by Dibru-Saikhowa visitors has also been expressed by wilderness users both in Canada (British Columbia Forest Service, 1995) and Australia (Department of Conservation and Land Management, 1991). These outcomes as being highlighted above regarding visitor perceptions of the impacts of tourist can be widely used and will be important to identify the potential indicators for monitoring environmental conditions at Dibru-Saikhowa National Park and acts beneficial for similar research works in near future.

5. Conclusion

One of the major challenges for the management of Eco-Tourism is using interpretation and education to help visitors gain a better understanding of the natural environment of an area, thereby enhancing their experience and protection of the area. As Lucas (1990)

notes, visitors to natural areas provide a particularly good audience for information and education, and such approaches are ideal for conservation reserves because they do not directly alter the natural environment. Education also has an important role in terms of communicating the reasons behind management actions to visitors, so that visitors are more likely to support management strategies, especially those restricting their activities. Cole (1995) commented that indirect techniques such as education are most likely to be effective when used proactively. These results are supported by Anderson and Manfred's (1985) study of visitor preferences for management actions in a US wilderness area.

The study of the Dibru-Saikhowa National Park highlights that education is the best management technique that can significantly bring about a new reformation and improvement in the entire sequence of management processes and aware people. The findings of this study also have implications for protection supervision. The top support for direct as well as indirect management actions also implies that visitors generally recognize that overuse of forest areas and overcrowding have the possible to further degrade natural areas thereby create an adverse impact on the environment, and hence are to be inclined to hold up preventive action.

There are several animal and plant right organizations that fight for the rights of the animal and plants. Numerous organizations and NGOs are coming forward to provide environmental education to the common people at the grassroots level. Different eco-tourism model should be more strengthened to preserve the nature and for ensuring sustainable development of tourism. Moreover, it should also be emphasized for generation of the much needed employment and livelihood of the local people. The best way to make eco-tourism to be successful is to ensure that the projects undertaken for viable tourism products like wildlife, wilderness, and plants etc. which are available in Tinsukia and Dibrugarh Districts.

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