

Environmental And Socio-Economic Impacts Of Ecotourism: A Review

Kirti Jain

M.Sc Environment Management, Forest Research Institute,
Dehradun, Uttarakhand, India

Abstract: With the increasing pace of changes in natural ecosystems, there has been a substantial increase in public awareness towards sustainable development. Promotion of ecotourism in the past few years is one such example. This study focuses on critical analysis of ecological and socio-economic impacts of ecotourism on nature and local communities respectively. Tourists' activities have detrimental effects on the environment such as altering soil-water characteristics, changes in animal behavior, hindering vegetation growth and increase in pollution. Host communities are influenced by the modern lifestyles and the economic statuses of the tourists. Ecotourism is primarily focused on the enhancement and maintenance of the aesthetic and cultural values of the area and providing a fair opportunity to the local people for income generation. This review suggests a better implementation of the government policies and promoting a more environmentally sensitive behavior among tourists. Local communities should be trained for better resource management and preserving their socio-cultural values.

Keywords: Ecotourism, Tourists, Sustainable Tourism, Rafting, Rishikesh.

I. INTRODUCTION

Nature-based tourism directly depends on the scenic beauty, topography, water features, vegetation and wildlife of an area. It contributes a lot to the nation's economy but the use of natural resources is neither wise nor sustainable (Butler, 1992; Ceballos-Lascurain, 1986; Healy, 1992, b). Tourism industry is conducive to economic growth in medium- and low-income countries but not necessarily in developed countries as the former caters a better satisfaction to the tourists' demands in terms of price and quality of goods and services (Eugenio et al. (2004). Farrell and Runyan (1991) differentiated nature tourism and ecotourism by stating the latter one as particularly more focused towards improving and maintaining the natural ecosystems of the site.

The term 'ecotourism' was coined and defined by Ceballos-Lascurain as traveling to relatively undisturbed or uncontaminated natural areas to study, admire and enjoy the scenery and its wild flora and fauna, as well as any cultural activity of the area (Ceballos-Lascurain, 1987). Ecotourism can be better understood by its various components which are

expressed in the form of principles, themes and dimensions, etc. Buckley (1994) introduced a dimension-based model of ecotourism that includes conservation, sustainability, environmental education, and nature-based activities. Four principles of tourism were identified which would minimize environmental impacts, maximize benefits to local people, respect local cultures, maximize tourist satisfaction. Six fundamental principles of ecotourism has been provided related to minimization of negative impacts of both infrastructure and participant numbers, increasing awareness and educational opportunities, support for conservation, democratization (the participation of all stakeholders in decision-making processes), provision of community benefits and educational and experimental opportunities for locals (Wallace and Pierce, 1996). Eco-tourism has emerged as a concept which brings ecological modernization, tourism development and sustainable development together. It claims to fulfill sustainable development goals along with ecological goals of sustainability by-

- ✓ Encouraging sustainable livelihoods (Ceballos-Luscurnain 1996, 1987; Weaver 2001, Diamantis 2004; Donohoe and Needham 2006).
- ✓ Generating employment opportunities
- ✓ Enhancing environmental and cultural conservation through better funding for protected area management (Butcher 2006; CONANP 2007; SEMARNAT-CONANP 2007; CBD-UNEP 2007; DECCW 2008).

Ecotourism is a strategy for reconciling conservation with development in ecologically rich areas (Thampi, 2005). The purpose of sustainable tourism is to maintain a balance between environment protection and catering the needs of tourists and host communities, preserving their cultural values and establishing socio-economic equity in short and long term in both developed and emerging nations (Mitchell & Hall, 2005). However, the under-developed or the developing nations might not be able to afford the environmental protection measures required to prevent or restore degradation (Butler, 1991).

II. IMPACTS OF ECOTOURISM ON ENVIRONMENT

Impact of tourism depends on the nature and number of tourists and the characteristics of the site. The effects can be direct if caused by the tourist/s activities on the site or indirect if caused by the infrastructure created for tourists. Ecosystems and habitats are quite vulnerable to the development and infrastructural pressures. Continuous construction of new resorts, hotels, camping sites modifications cause damage to the structure, function and the aesthetic beauty of nature. Any negligible alterations by an individual in the characteristics of the soil, water or any microhabitat can influence the flora and fauna of the area. Ecological impacts either negative or positive have a great role to play in the management strategies to be adopted as the impacts are interconnected, they rare occur singly.

A. IMPACT ON ROCKS, MINERALS AND SOIL

Soil compaction is mainly caused by trampling, highly observed in caves, along lake/sea shores and dunes which are most vulnerable by passage of vehicles (Kuss et al., 1990). Woodland sites are most susceptible to soil compaction due to camping (Speight 1973). Compacted soils lead to impeded drainage, decreased availability of air and water to soil organisms and plant roots thus, affecting the functioning of active roots and soil quality. Climbing and caving cause abrasion of rock faces and wearing of surface deposits (Speight, 1973). Hiking and trekking may lead to formation of soil screes, slides. Scrambling down a slope causes disperse downward movement of topsoil. Average down slope movement has been known to increase from 5cm/year to 30cm/year. Topsoil erosion and scrambling directly affect the vegetation succession. Powdering of litter layers is caused due to fragmentation and trailing. Continuous loss of soil litter layers slows down the process of nutrient recycling, affecting the organisms involved and other ecological processes associated with it (Kuss et al., 1990). Puddling of the ground surface develops marshy conditions leading to gleying and

drainage problems. Aquatic soils are known to be affected by the motorboats and other disturbances causing changes in sedimentation patterns of the soil and water. Alpine soils are very much affected by harvesting for fuel wood, grazing cattle, mining projects and wall construction (Byers and Banksota, 1992). All of these more or less, make soil susceptible to soil erosion leading to permanent ecological change.

B. IMPACT ON WATER RESOURCES

Managing water quality is a difficult task due to various point and non-point sources of pollution and changing land use patterns. The major problem is not to just check pollution in water resources within the sites (or protected areas) but also the extended area around them. The use of motorboats leads to aquatic weed nuisances, turbulence and turbidity in shallow water and sediments (Kuss et al., 1990). Viable fecal bacteria persist in the sediments at a higher concentration, so it is detrimental to cause any dispersion in them. Chemical contamination due to waste disposal from hotels (such as chlorine and caustic soda) to dissolve fats/lipids or to disperse the odor of sewage directly affects the aquatic life. It might kill some plants or animals or might make them resistant. A lot of waste is generated by the tourist activities. There is a high risk of the rivers/lakes getting polluted if the waste is not disposed by properly-sited sewage disposal systems. Visitors demand to have a good view in their stays. Hotel, home stays constructions near beaches, lakes and their waste material (cement, etc.) run-off results in eutrophication, making it difficult for the aquatic life to survive; siltation and damaging adjacent reefs also, killing the scenic beauty.

C. IMPACT ON VEGETATION, WILDLIFE AND ECOSYSTEM

Recreational activities can have an immediate, direct effect on different species, their activities, composition and habitats such as trampling and vehicle passage adversely affects the ground vegetation. People often leave the designated tracks and cross the grasslands in search of different species. Increase in vehicle passage results in increase in loss of vegetation cover on the parallel roads and turning radii loops (Gakahu, 1992). *Sterna albifrons* (little tern) is known to show breeding failures by the presence of fishermen and bathers on nesting beaches (Speight, 1973). Noise from motorboats and sailing crafts can disturb waterfowls to the extent that they can even desert their frequently visited water bodies. Fishes can be agitated too by the noise and the oil spillages of the motors. Water-skiers mostly affect the species like Great crested grebe (*Podiceps cristatus*) that build floating nests on inland waters. Species of open habitats like deer, chamois, etc have known to alter their behavior patterns like avoiding their most frequently visited areas during the day. Studies have reported that some seabirds like puffins are feeding plastic scraps to their chicks. Demand of sea food by tourists directly affects local fisheries and threatens wildlife populations. Tourists littering around on the site causes habitat changes and population localization of bears, rats and sparrows and an increase in local population of

herring and common gulls, jackdaws and foxes (Teagle, 1966).

In a realistic model no species survives alone. Any effect on one species or its survival would have direct or indirect effect on the other. Such disturbances in microhabitats might alter the entire ecosystem eventually.

III. SOCIO-ECONOMIC IMPACTS OF ECOTOURISM

Ecotourism is a multi-level process socially as well as economically involving people from the higher most government authorities to local and tribal communities which have a crucial role to play in tourism development. Wearing et al. (1996) defined socio-cultural impacts of tourism as the different ways in which tourism contributes towards the value systems, lifestyles, safety levels, individual moral conduct and family behavior, creative expression, cultural and traditional ceremonies and community organizations. For past few years, the role of local communities has been acknowledged in conservation, management and development of biodiversity and landscape of the tourist site. Government is observed as an appropriate sector which creates jobs, international income to stimulate regional development (Hall, 1991).

Ecotourism generates new employment opportunities for the natives. It helps in infrastructural development of the area like transportation and health services. Along with aesthetic pleasure, ecotourism provides a fair opportunity to tourists to learn from different traditional cultures and at the same time, it boosts up the self-esteem of the tribal communities. On the contrary, it can cause social instability among the host communities as the tourists with different beliefs and cultures might create negative inter-relationships. Gibson (2010) argued that tourists spend strong currencies on their tours without the realization that the tribal/local communities of the remote areas might not get the same opportunities. This creates envy which can lead to social instability. Howitt (2005) has focused on how western culture perceived environment just as a recreational site compared to the indigenous view of nature as hunting, gathering grounds, also harming its aesthetic value. As the number of tourist visits increase, it builds up more pressure on the nature, resource use and social capital. This can cause disturbance in the serenity of the quiet and less populated areas. Economically, tourism only benefits those classes of people who are engaged in tourism related businesses like accommodation, food, guiding services and local market owners while people who are involved in agricultural, cattle rearing still depend on natural resources. Since tourism is a seasonal process, it provides seasonal employment only. Dieke (2003) emphasizes the increase in foreign exchange at the macro level and employment generation at the micro level benefits of ecotourism.

IV. CASE STUDY

In India, tourism based on river Ganga has contributed a lot towards development of national economy and welfare of the local people. However, a large influx of tourists to the sites resulted in environmental degradation at the cost of loss of

local identity and traditional culture (Farooquee et al., 2008). Rafting, In India is commonly exercised on the Ganga River in Rishikesh and the Beas River in Himachal Pradesh, India.

A study entitled 'Socio-environmental impacts of river rafting industry on Ganges in Uttarakhand' conducted by R. Pandey, H.B. Vasistha and P.S Mahapatra in 2011 showed that since 1994 till 2007 the camping area on the river Ganges has increased from 2,000m² to 1,80,000 m². This huge expansion earned a fair amount of profit to the business owners and other beneficiaries like food, accommodation service providers. The adolescents were highly influenced by the lifestyles and financial status of the tourists. They were found to bunk schools and run to the sites to please their minds or get engaged in activities to earn money. Locals reported a behavioral shift in animals from diurnal to nocturnal habits to avoid the human disturbances during daytime. The aquatic flora and fauna seemed to be affected due to increased waste disposal of leftover food and other solid waste. The inappropriate fecal dumping method, washing of utensils and clothes, bathing on the banks of the river adds up a lot to the water pollution. Increased vehicles, bonfires in the area create air pollution. Accumulation of waste like rugged footwear, plastic bottles, polythene bags, wrappers, etc. destroys the scenic beauty of the area and causes soil pollution.

All the developmental activities, urbanization in these natural sites can have detrimental effects on the nature, society and eventually on tourism too. The seasonal dependency of tourism has impacted the spatial-temporal environment adversely since it puts intense pressure on fragile resources of the nature (Petrosillo et al., 2006).

V. DISCUSSION

The purposes of ecotourism are to make public aware of the environment, to make the tourists sensitive and responsible towards nature and its processes (Whiteman 1996), and to alleviate the degrading impacts of human activities on natural areas (Sirakaya and McLellan 1998). However, Wight (1993) has cautioned that ecotourism is being used as a label to 'eco-sell' tourism and travel and to obtain benefit from the 'greening' of the economic marketplace. To achieve the desired goals of ecotourism, the tourists and the local people of the sites need to adopt environmentally sensitive and sound behavior. This can be achieved through education-based learning programme. Tourism industry must ensure their operational integrity via impact analysis or green auditing. Also, the host communities must be a part of their resource management strategies and be directly benefitted by the resource utilization to ensure true sustainability of the ecotourism (Cater and Goodall, 2003).

VI. CONCLUSION

Ecotourism is one of the leading sectors of the tourism industry. It has made significant contributions to the national economy and has great potential to promote environmental awareness directly or indirectly through its practices. This review suggests improvements in the individual behavior of

tourists and hosts, and government efforts to achieve the goals of ecotourism.

The local people need to be trained properly about hospitality and management practices to make good use of the income generating opportunities. Also, it requires obligatory implementation of the government rules and policies to prevent over-exploitation of the resources. Several strategies need to be adopted to keep a check on the degrading activities at the tourist sites.

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