

A Study on the Environmental Impacts of Ecotourism in Kodagu District, Karnataka

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Abstract

Ecotourism is a new concept in the tourism industry of India, which essentially developed since past 20 years. However, India's cultural and natural potential for ecotourism is well established. Over many neighboring countries, India has great advantages for ecotourism with many scenic attractions and diversified ecology. Among other destinations, Kodagu district of Karnataka state has emerged as a new ecotourism destination with the unique natural landscape, multiform fauna and flora species along with diversified culture. Since ecotourism was not quickly developed in Kodagu district, it brought many benefits to local community and natural environment. However, it also caused numerous negative impacts for natural resources, ecology and local environment.

This study is conducted to examine the positive and negative environmental impacts of ecotourism in Kodagu district. The study involved the participations of the experts who have visited and settled in the district. By using the questionnaire method as data collection, the study analyzed both quantitative and qualitative data. The canvassed questionnaire method is employed to obtain empirical data from the expert's interview like local community leaders, chief of Non Government Organizations (NGO), owners of travel agencies and chief or employer of local authorities. Furthermore, the document analysis method is used to acquire the primary data from prior literature and public materials. The study focuses on analyzing collected data in order to generalize the environmental impacts of ecotourism in Kodagu district. The result of study provides a summary of key findings and improving recommendations relating to ecotourism and environmental impacts management in the district.

Key words: ecotourism, natural landscape, environmental impacts

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1. Introduction

According to Buckley (2008), Ecotourism is widely recognized for its positive impacts to environment, ecotourism operators and tourism lobbyists argue that the ecotourism has contributed to the economic, social and cultural development of the local communities by conserving and supporting the protected areas. Eco-tourists are fond of enjoying nature, culture and its development supporting local communities during their visit to the destination. Ecotourism operator and other tourism lobbyists have argued that ecotourism always generates benefits and supports the conservation of the destination. The protected areas are significant for the development of tourism in a place.

This study is made to analyze the environmental impact of ecotourism in the destination. Ecotourism can have different impacts and that can be divided into two major categories; negative and positive. Negative impacts are always connected to the natural resources, local culture and disturbance arose by ecotourism in their development whereas positive impacts have always been analyzed from the eyes of benefits provided to the destination in different form such as conservation of the destination, economical, social and cultural development of the local communities related to the destination etc.

In this section of the study, the light is given to the vital and most possible impact of ecotourism on the environment of the destination. A major part of the natural resources is consumed by human every year for the sake of human's socio-economical development. "The planet's natural resources are consumed or contaminated by its human population. Human survival needs drinkable water, breathable air and usable biological diversity. Natural ecosystems are the world's primary reservoirs for each of these" (Buckley, 2008, p.5). The basic needs of human are satisfied and fulfilled after consumption of a vital proton of natural resources. Apart from this modernization, industrialization and urbanization are other processes under-taken by humans to fulfill their socio-economic demands and ambitions, which lead towards heavy consumption of natural resources. These activities are leading to the reduction of natural wilderness.

Hence, protection of natural resources for environmental development for sustainable earth is important. Many theories have been written explaining the importance of ecotourism for conservation of nature and its resources. The literature has described the impact of ecotourism briefly (Buckley, 2008). Out of a great number of environmental impacts, some of the major impacts are discussed in this section.

2. Statement of the Problem

Kodagu district of Karnataka state has emerged as a new ecotourism destination with the unique natural landscape, multiform fauna and flora species along with diversified culture. Since ecotourism was not quickly developed in Kodagu district. Environmental impact has one of the consequences of ecotourism. The two types of impacts have predicted in this issue these are; positive and negative impacts of ecotourism. Positive environmental impacts of ecotourism are such as increase in conservation awareness among stakeholders of ecotourism, improved landscape characteristics and quality, well-preserved water resources, water bodies, and natural habitats, increase in water, air and other environmental qualities. From negative impacts of ecotourism like decrease in abundance and diversity of flora and fauna, decrease in water, air and natural habitats quality, decrease in sensitivity of ecosystems, noise pollution, soil erosion and landslide, change of hydrological system of the river and its creek system, deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites and traffic jam in the densely populated tourist place.

3. Study Area

Kodagu as it is officially known as one of the tiniest districts in the southern part of Karnataka covering an area of 4102 Sqkm. Kodagu lies between 11° 56' and 12° 50' North latitude and 72° 22' and 76°11' East longitude. The Thadiyandamol (1750 m) is the highest peak and Siddapur (900 m) is the lowest elevation in kodagu. Kodagu consists of three taluks (administrative units) like, Madikeri (Mercara) the district Head Quarters, Virajpet and Somvarpet. The district borders Mysore district to its east, Dakshina Kannada district on the west, Hassan district in the north and the state of Kerala to the south. The total population of Kodagu district in 2011 is 554,762 persons.

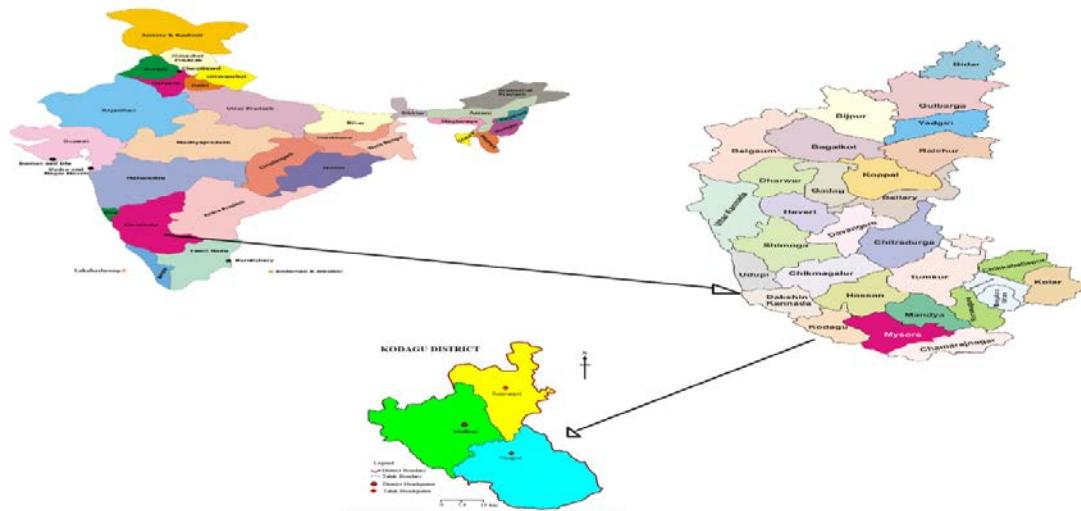


Figure 1 Location Map of Kodagu District.

4. Objective of the study

The study has been carried out with the following objective

1. To examine the environmental impacts of ecotourism

5. Materials and Methodology

Expert interview with government officers, Non Government Organization (NGO) leaders, community leaders and chief or employer of local authorities based on canvassed questionnaire to get the information on environmental impacts of ecotourism in this study. Interview conducted in various ecotourism places like bird watching centres, cultural heritage spots, fishing camp/s, health promotion and spa centres, home stays, national park and elephant camp, recreation centres, river rafting, trekking places and waterfalls.

5.1 Data collection method

The primary data has collected through canvassing structured questionnaires in this study. 500 samples have collected from different ecotourism activity sites to understand both the positive and negative impacts of ecotourism. The questionnaire has many aspects on positive and negative impacts of ecotourism. The positive impacts are increase in conservation awareness among local communities, authorities, and other concerned stakeholders, reduction in environmental efforts, conservation status becomes important in

Nagarahole (Rajiv Gandhi) National Park and Dubare Elephant Camp, increased conservation and preservation of natural and cultural resources and natural and built landscape in the areas, improved landscape characteristics and quality, both from an environmental and from cultural points of view, well-preserved water resources, water bodies, and natural habitats, increase in abundance and diversity of flora and fauna, increase in the aesthetics of the areas, increase in water, air and other environmental qualities

The negative impacts are decrease in abundance and diversity of flora and fauna, displacement and change of migration patterns of fauna, change in fauna behavior, decrease in the aesthetics of the areas, decrease in water quality, decrease in air quality, destruction of natural habitats, decrease in sensitivity of ecosystems, noise pollution, soil erosion and landslide, loss of nutrient quantity and quality, change of hydrological system of the river and its creek system, decrease in water resources and water bodies in terms of quality and quantity, decrease in landscape characteristics and quality, deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites and traffic jam in the densely populated tourist places.

6. Results and Discussion

Ecotourism initiative in Nagarahole (Rajiv Gandhi) National Park and Dubare Elephant Camp protected areas would give considerable amounts of positive impact on ecology, ecosystem, biodiversity and natural resources management in the areas (see Table 1). According to Jungle Lodges and Resorts (JLR) programs of Karnataka state (1980), ecotourism is to be developed as a responsible mechanism to help safeguard natural resources, natural environment and biodiversity. It is optimistic that ecotourism will provide medium biological and physical impacts on the protection of plant and animal species in a wide range of natural habitat forms which are in current jeopardy due to human use. Most expert respondents interviewed explained that when these natural attributes of Nagarahole (Rajiv Gandhi) National Park and Dubare Elephant Camp areas are properly protected, they would provide socio-economic returns to the locals and all concerned stakeholders better than current rapid destructive natural resources consumptions of reckless coffee estate owners and illegal private people.

Table-1: Perceptions of the interviewed expert respondents of possible environmental impacts of ecotourism development in Kodagu district

Projected Positive Environmental Impacts of Ecotourism	Scaling Items				
	1	2	3	4	5
Increase in conservation awareness among local communities, authorities, and other concerned stakeholders	-	3	3	8	4
Reduction in environmental efforts	3	6	6	5	-
Conservation status becomes important in Nagarahole (Rajiv Gandhi) National Park and Dubare Elephant Camp	-	3	6	8	3
Increased conservation and preservation of natural and cultural resources and natural and built landscape in the areas	2	2	7	6	3
Improved landscape characteristics and quality, both from an environmental and from cultural points of view	-	6	8	5	-
Well-preserved water resources, water bodies, and natural habitats	3	4	9	3	-
Increase in abundance and diversity of flora and fauna	-	6	4	8	-
Increase in the aesthetics of the areas	2	6	6	5	-
Increase in water, air and other environmental qualities	4	4	5	4	-
Total Score	14	40	54	52	10
Projected Negative Environmental Impacts of Ecotourism	Scaling Items				
	1	2	3	4	5
Decrease in abundance and diversity of flora (i.e. flooded forests, semi thick forests, evergreen forests, shrubs and bushes, etc.)	5	4	6	4	-
Decrease in abundance and diversity of fauna (i.e. waterbirds, aquatic life, wildlife, etc.)	4	5	5	6	-
Displacement and change of migration patterns of fauna	3	5	5	5	-
Change in fauna behavior	1	7	6	5	1
Decrease in the aesthetics of the areas	3	8	4	5	-
Decrease in water quality (i.e. increase in water contamination caused by household wastes)	2	3	6	6	2
Decrease in air quality (i.e. aesthetics of the areas decrease)	7	9	4	-	-
Destruction of natural habitats (i.e. fish and aquatic, reptile, mammal, amphibious and wildlife habitats, etc.)	6	4	4	6	-
Decrease in sensitivity of ecosystems	3	6	7	4	-
Noise pollution	3	4	5	4	2
Soil erosion and landslide	6	7	3	3	-
Loss of nutrient quantity and quality	5	6	9	-	-
Change of hydrological system of the river and its creek system	6	7	4	3	-
Decrease in water resources and water bodies in terms of quality and quantity	5	3	8	3	-
Decrease in landscape characteristics and quality	7	6	3	4	-
Deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites	5	6	4	4	-
Traffic jam in the densely populated tourism places	-	7	7	5	-
Total Score	71	97	90	67	5

It is also promising that ecotourism will provide high impacts on the strengthening of conservation status and the increase and improvement of conservation programs and activities committed by concerned agencies and local communities. These respondents expressed that ecotourism could provide a variety of economic incentives to government officials, staffs as well as to the local people/communities. This would encourage both the environmental NGOs and relevant government appointed agencies to resort to its economic revenue to improve their works in conserving natural resources and ecological integrity of the areas. Similarly, the

economic alternative provided by ecotourism for the stimulation of local economic activities and people's livelihoods would sensitize the locals to understand the value of their resources. As long as they are involved in ecotourism development, understand the purposes of local development through ecotourism and obtain benefits (direct or indirect) from its process, they would love and care about the conservation activities for a sake of local interests. They articulated that ecotourism could make the executing staffs and local villagers understand the substantial ecological features of the areas, and thus would assist much to the implementation and success of current protected areas management plans. As mentioned by this group, one of the reasons that could make these stakeholders more willing to safeguard local resources is because they represent main attractions to pull visitors to visit the areas. If natural resources and other ecological attractions are vanished, they will also lose their profits and tourism-related income generation activities.

The results of the Likert Scale Analysis also show that ecotourism development will trigger high impacts on the increase in conservation awareness among local communities, authorities and all concerned stakeholders. The expert group viewed that this would lead to improved conservation status in the district. This increased awareness and natural appreciation among these groups may support the long-term management and preservation of natural resources as well as the natural and built landscapes in the district. The premise that the local communities are dependent on the consumption or over-consumption of forest resources and other natural biodiversity to support their daily lives and economic exchange would thereby be modified accordingly. Through the change of such orthodox rural practice, ecotourism will significantly generate high positive impacts on the increase in fauna and flora species in Kodagu district in both abundance and diversity.

However, some social experts revealed that the temptation to maintain only the biodiversity and ecosystem or to improve the environmental governance of the places for ecotourism without caring about people's fundamental livelihoods or the ecotourism benefit dispersion would lead to an unremitting failure of ecotourism initiative in the district. Concurrently, it would make the environmental degradation (resources and wastes) possible in the ecotourism places. These experts express that to increase the environmental tax and efforts (budget and technology) in environmental governance is not the only key strategy to success. Unless there are appropriate resource utilization policy frameworks, skill development training programs, and mutual benefit sharing methods, the multifaceted development plans via ecotourism would remain as impossibility. Other respondents confirmed that poaching might be committed by individual villagers who have low education and limited access to common

property resources as well as to participating in local development. However, when ecotourism is fully developed in the district, there would be another reason related to poaching of the locals. It might be unquestionable that those who would feel as if their rights to participate in or their chances to receive additional revenue from ecotourism development are not given might be disappointed. Provided they feel or would feel in this way, they would continue to harm the environment in ecotourism places. From a social point of view, some expert respondents did not view this as the only result of local discontentment, but also the results of people's poverty, livelihood shock and loss, and the way ecotourism developers or planners would underplay the problems they encounter.

The existing institutional framework, lacking political will and potential conflict of interest (ecotourism revenue and forestry production revenue) would trigger negative reaction from different stakeholders, particularly from the local communities. According to the discussion with some experts in detail, there are many factors contributing to current lethargy of JLR project in Nagarhole (Rajiv Gandhi) National Park and Dubare Elephant Camp, and these might also hinder ecotourism success at some point. These are inadequate capacity of the staffs, lack of anti-poaching techniques and sophisticated support equipments, unclear definition of responsibilities, weak legal framework and so on and so forth. Nevertheless, one of the most critical policy drawbacks that have not been painstakingly deemed necessary by government, NGO and donor agencies is the poor remuneration of the project support staffs at local level. Normally, low motivation due to low salaries makes these staffs become reluctant to perform their duties including during their encounters with poachers. The only thing they could do is to threaten poachers to bribe them before or after their activities. Therefore, if ecotourism could generate only undersized benefit to the increase of their salaries or give unfair shares to different groups of authorities, there would be more problems leading to environmental degradation.

Although the results in Table -1 shows that ecotourism will provide negative environmental impacts from low to medium levels, most expert interviewed also confirmed that the presence of tourists in large quantity and poor quality (e.g. lacking or no awareness about environmental significance) would accelerate current environmental problems in the Kodagu district. This would cause further loss of fauna and flora species, biodiversity, ecological system, natural beauty and environmental quality of the district. The environmental and tourism experts justified that if ecotourism is going to be developed at fast speed targeting a plethora of revenue from a large number of tourists, it would bring a lot of problems in the future. Mass tourists with low quality as eco-tourists in the district would behave rashly or less

sensitively to the natural resources / habitats and local environment. Without proper management plans and ecotourism principles would lead to great decrease and destruction of the places. However, they also associated the problems to the carrying capacity of the places as well. Besides a decrease in abundance and diversity of fauna and flora (e.g. change of animal behavior and movement due to close exposure of tourists), destruction of natural habitats (e.g. sensitive trailing or zoning system) and the quality of the environment, the respondents also reported three other possible risks. These risks are the results of high impacts that ecotourism operation could bring to the areas. They explained that high volume of tourists in the tourist places would cause noise pollution (e.g sound of the motorized boats), and traffic jam in densely populated places (especially those close to the boating places e.g. Dubare Elephant Camp). From an ecological outlook, it would also lead to water contamination or pollution (e.g. dumping of sewage wastes especially in the flood season). These are due to difficulties in introducing and fostering waste management, waste separation and waste transportation in Bhagamandala and Talacauvery region.

7. Conclusion

Environmental impacts of ecotourism in Kodagu district have assessed in this study. Many key factors have involved in structured questionnaire to collect the information from stakeholders of ecotourism on positive and negative environmental impacts of ecotourism. Respondents have opined on the issue of impacts based on their knowledge and experience in different ecotourism destinations of Kodagu district. Opinions of respondents have sorted in the level of impacts varies from “1” which is equal to the “lowest quantity of impact” to “5” which is equal to the “highest quantity of impact”. The result shows that high negative impacts on environment and low quantity in positive impacts. Though, in some factors (e.g. conservation awareness and efforts) of positive impacts would notice better improvement. Hence ecotourism in the district is not well established due to the lack of knowledge and awareness in the people. Stakeholders and concerned authorities would have lighting on this issue to proper and sustainable development of ecotourism in Kodagu district.

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