

NEGATIVE IMPACTS OF RIVER-BASED TOURISM DEVELOPMENT ON BIODIVERSITY AND STRATEGIES TO CONSERVE THE BIODIVERSITY

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Abstract

River-based tourism development in globally is having an adverse impact on biodiversity. Most of the hotels, lodges, restaurants have the tendency to get involved in river-based tourism directly and indirectly. Thus, planning and implementation of river-based tourism activities damage the biodiversity in several ways. It increases from time to time. This study has done the identification of the negative impact on the biodiversity mainly due to the tourism industry along the rivers and the strategies that can reduce the negative impact. The aim of the study is to raise the awareness of people by drawing attention to biodiversity. The study was carried out using secondary data. A secondary data analysis was done to identify the negative impacts of river-based tourism development on biodiversity and suggestions to reduce those negative impacts. According to the findings of this study, it was found that the lack of proper waste management, lack of awareness of people about the occurrence of conditions harmful to biodiversity such as waste management and human activities, lack of proper awareness of the construction workers and the lack of proper planning before the start of riverside tourism activities.

Keywords: Biodiversity, conservation, development, negative impact, river-based tourism

1.0 Introduction

Tourism has long been regarded as a "clean industry," with no significant environmental consequences. This image, however, is now out of date. Most parties are aware of the potential negative consequences and recognize the need for action (Duim & Caalders, 2002). The variety of plant and animal life in the globe, or in a single environment, is simply referred to as biodiversity, or more specifically, biological diversity. This diversity is essential for the processes that support all life on Earth, including people (Jones, 2022).

The growth of tourism can put more pressure on already-scarce natural resources by driving up consumption there. One of the rarest natural resources is water, especially fresh water. In general, the hotel, swimming pool, golf course, and private water consumption industries abuse water resources. This may result in decreased water availability, deterioration of water sources, and increased waste water production (Sunlu, 2003). Water resources are typically overused by the tourism sector for hotels, swimming pools, and visitor personal usage. This may cause a shortage of water, the deterioration of water sources, and an increase in the generation of waste water. Additionally, visitors typically drink more water while away from home than they do at home. The daily consumption can approach 440 L. This is almost twice what a typical city person would eat. Water scarcity is a serious issue, especially in arid areas (Ansari & Gill, 2014). Increasing sewage pollution is frequently a side effect of building new hotels, recreation centers, and other facilities. Wastewater harms flora and fauna by contaminating the lakes and oceans that surround tourist destinations. Because of the high concentration of nutrients in sewage runoff, algae thrive and cover filter-feeding corals, making it difficult for them to survive. For coastal ecosystems, changes in salinity and transparency can have far-reaching effects (Nuskiya & Kaldeen, 2019). In addition, sewage pollution poses a threat to both human and animal health (Kocabulut et al., 2019). By providing direct financial support, the tourism sector may aid in environmental preservation. Tourism can directly aid in the preservation of fragile habitats and regions. Park admission fees and other comparable forms of income can be utilized to fund the management and maintenance of environmentally sensitive regions (Sunlu, 2003).

For park operations or conservation efforts, tourists or tour companies may be charged additional fees. Planning and management of the environment have improved the advantages to natural regions that can be increased when tourism infrastructure, especially hotels, are managed sustainably (Sunlu, 2003). However, it is necessary to carefully plan for controlled development based on a study of the area's environmental resources. Planning can assist in deciding between conflicting uses or figuring out how to make them work together. The progressive deterioration of environmental assets crucial to tourism can be prevented by planning ahead for tourism growth and avoiding costly and dangerous blunders (Sunlu, 2003). According to past studies, there is a problem with river-based tourism on biodiversity. However, people can conserve natural resources within their businesses. This study tries to investigate this research gap.

2.0 Literature Review

2.1 Conservation of Biodiversity

The vast variety of life on earth is referred to as biodiversity. It can be applied more precisely to all the species found in a certain area or environment. Every living creature, including plants, microorganisms, animals, and people, is referred to as biodiversity. Genetic, species, and ecosystem diversity are the three hierarchical layers of biodiversity. The variation of genes within a species is referred to as genetic diversity. The population can respond to natural selection and adapt to its surroundings appreciations to genetic diversity. The basis for speciation is the degree of genetic variety. At the species and community levels, it plays a crucial part in the preservation of diversity. Variability in the environment frequently leads to

an increase in genetic diversity within a species. Animal variety species diversity is the variety of species (Kumar & Usha ,2018).

Significant economic, aesthetic, health, and cultural benefits of biodiversity serve as the cornerstone of sustainable development. However, there is broad scientific agreement that the world's genetic diversity is quickly declining ecosystems and species. This certainly has an anthropogenic cause. The extent of human influence on biological diversity has been growing rapidly, mostly as a result of global patterns of production, consumption, and commerce as well as the development of agriculture, industry, and human settlements. At this time, nothing is known about the economic or ecosystem value of biodiversity. The interconnectedness of species within ecosystems and the effects of the extinction of one species on others are two areas where information is particularly lacking. As a result, slowing down the rate of biodiversity loss and preserving what biodiversity there is as a foundation for sustainable development remain key worldwide challenges. The term "conservation" refers to the safeguarding, maintenance, management, or restoration of animals and other natural resources like water and forests. Keeping biodiversity intact will ensure the survival of numerous species (Hirimuthugodage, 2013).

2.2 Biodiversity in Sri Lanka

Sri Lanka has the most biodiversity per unit of geographical area among Asian nations and is one of the 34 biodiversity hotspots identified worldwide. Nearly all of the country's indigenous woody plants and around 75% of its endemic animals reside in the wet zone rainforests. A staggering 3,000 different types of rice have been recorded, demonstrating the amazing genetic variety of agricultural crops. Many of the native rice types are resistant to pests, unfavorable weather, and poor soil. There are about 170 kinds of ornamental plants, in addition to the diversity found in coarse grains, legumes, vegetables, spice crops, roots, and tubers (Hirimuthugodage, 2013).

Many years ago, a number of dangers to Sri Lanka's biodiversity were noted. The primary risk comes from the rising demand for land for human settlement and related development activities. Some of the other major threats to biodiversity include poor land use planning, indiscriminate exploitation of biological resources, tax enforcement of laws, a lack of an integrated conservation management approach, the extinction of traditional crop and livestock varieties and breeds, pollution, conflicts between people and wildlife, the spread of unidentified invasive species, and rising human population density. For a growing it is difficult to strike a balance between ecological and economic development goals in a country like Sri Lanka. However, it is important to carry out development operations in a way and at a pace that prevents the long-term loss of biological varieties (Hirimuthugodage, 2013).

Tourism and biodiversity is the best way to develop Sri Lanka. Sri Lanka is an island and we have a highly desirable biodiversity system. We have a lot of natural resources. Ecotourism and Biodiversity will be fundamentally important to discuss in detail how to improve and humanely develop in furthering our Golden Goal. It is very important to discuss the adverse effects of river-based tourism on biodiversity and biodiversity conservation strategies. According to our literature review, there are many discourses both globally and locally about the development of river-based tourism based on tourism and biodiversity. However, there is a research gap on the practicalities and negative impacts of river-based

tourism. As it is extremely rare to discuss the negative impacts of river-based tourism on biodiversity, this research was undertaken to fill that empirical gap.

2.3 Sustainable Tourism Development

Tourism destination development and planning shouldn't be taken for granted. Along with other tourism-related activities, tourism destinations should be considered as part of the stakeholders' sustainable development (Silva et al., 2021). In the book *Agenda 21 for the Travel and Tourism Industry: Towards an Environmentally Sustainable Development*, UNWTO and World Travel & Tourism Council (WTTC) adopted the idea of sustainable development for travel and tourism. Environmentally friendly activities, support for the preservation of cultural and natural heritage, and concrete economic and social benefits to locals in host places are the three pillars of sustainable tourism. The problems at hand might have less to do with how to increase tourism and more to do with how to control tourism growth and create sustainability (WTO, WTTCEC, 2014).

2.4 River - based Tourism Development

Currently, river- tourism is growing, and with it, tourist activities along the river and the number of tourist-friendly buildings have both expanded. The feature of water, one of the most well-liked natural settings for rest and pleasure, is the primary element of river-based tourism. Rivers, like many other bodies of water, have developed into a significant location for leisure travel, sports tourism, history and cultural tourism, and other water-related activities (WTO, WTTCEC, 2014).

The largest percentage of tourists are associated with the riverside tourism industry, according to statistics from the World Tourism Organization. Planners are now increasingly aware of the need for sustainable development in these places due to the beaches' continued popularity, high demand, and vulnerable ecological structures. To achieve sustainable tourism in order to maintain the financial advantages, stimulate travel, and safeguard environmental resources. The areas along rivers frequently have unbreakable ties to their surroundings and municipal centers. The majority of human activities, such as trade, commerce, energy, fishing, housing, and tourism, are concentrated in these locations. The quality of inhabitants' lives has increased as a result of tourism (Tekin, 2017).

2.5 Negative Impacts of River - based tourism Development.

In the tourism sector, the environment will be altered to varying degrees to improve the comfort of visitors, and visitors will also emit varying amounts of pollutants while traveling. In the natural environment, it is considerably simpler for human activity to impact the water environment. Aquatic species are initially affected when the water environment is polluted. The development of surface organisms will thereafter be influenced by the land environment close to the water environment watershed. If it is not stopped, the unsustainable growth of tourist attractions will eventually cause the depletion of tourism resources and a slowdown in the growth of the industry (Cooper, 2009).

3.0 Methodology

The qualitative research method is used to examine a phenomenon or concept in the social world. It investigates social or human problems affecting individuals or groups. A qualitative approach can be used to investigate a problem or issue in depth. A detailed understanding of a social problem can only be achieved by talking with people directly and allowing them to share their stories or experiences, or by empowering them to hear their voices about the issue that will be explored. (Creswell et al., 2007) A qualitative method is pursued in this study. The Secondary information from several sources was utilized in the study. In order to explore more about the negative impacts of river-based tourism development on bio-diversity, the researchers gathered data from a variety of sources, including local government publications, online magazines, books, newspapers, and tourism journal articles analyzed and secondary data. Thus, to identify current rehabilitation practices and make additional suggestions, the authors studied the existing literature.

4.0 Findings

The tourism sector has the potential to affect wildlife, plants, and natural ecosystems through habitat destruction, pollution, overuse of natural resources, and visitor traffic in sensitive ecosystems. The tourism sector will alter the environment to variable degrees in order to increase visitor comfort, and visitors will likewise generate different amounts of pollutants while they are there (Ansari & Gill, 2014). In the natural environment, human activities have a higher impact on the water environment. The first species to suffer when the water environment is polluted are aquatic organisms. The development of surface organisms will then be influenced by the terrestrial environment close to the watershed. If it continues, unsustainable development of tourist sites will eventually deplete available tourism resources and cause tourism development to stagnate (Ansari & Gill, 2014).

Biodiversity and tourism are intricately interwoven. On the one hand, tourism is typically supported by biodiversity, which is defined as the diversity of life on Earth, and tourist attractions, such as tropical forests, coastal habitats, and national parks, heavily rely on their natural features and attractiveness to draw people. Alternatively, tourism has the potential to destroy biodiversity. Plants, animals, and natural ecosystems can be harmed by habitat destruction, pollution, rising tourist numbers, and unrestricted use of natural resources for profit, which reduces biodiversity (Jones, 2022). The growth of related infrastructure on coastal wetlands and the utilization of natural resources for the construction of new tourist lodgings and facilities can both be detrimental. However, careful and attentive planning and management are necessary to avoid detrimental consequences on biodiversity, and such approaches may directly conflict with pressure for commercial tourism development. On the plus side, tourism can play a significant role in biodiversity protection (Jones, 2022).

The change in the water environment is governed by objective rules, but at the same time, all forms of human tourism have an impact on the water environment (often negatively), and the water environment changes in response to these activities. For instance, if the water environment is improved, more tourists would be attracted to travel, which will boost tourism's economic benefits. Tourists won't consider visiting the area if the water

quality declines, making it difficult to grow tourism and worsening the quality of life for locals (Prideaux & Cooper, 2009). A balance of material, human, and environmental production indicates that tourism is developing healthily. Human production in tourism refers to human traveler activities, economic gains, and pollutants produced during the process. Environmental production in the tourism industry, particularly tourism that emphasizes the water environment, refers to the potential for polluting the water environment. (Habibullah et al., 2016). In the natural environment, human activities have a higher impact on the water environment. Aquatic organisms are the first to suffer when the water environment is polluted, followed by the land area close to the watershed, which has an impact on the development of surface organisms. If it continues, unsustainable development of tourist sites will eventually deplete available tourism resources and cause tourism development to stagnate (Van Der Duim & Caalders, 2002).

5.0 Conclusion and Recommendations

By providing direct financial support, the tourism sector may aid in environmental preservation. Tourism can directly aid in the preservation of fragile habitats and regions. The maintenance and protection of environmentally sensitive regions can be funded through park admission fees and other comparable forms of income. For park operations or conservation efforts, tourists or tour companies may be charged additional fees. Planning and Management of the environment have improved. The advantages to natural regions can be increased when tourism infrastructure, especially hotels, are managed sustainably (Sunlu, 2003). However, it is necessary to carefully plan for controlled development based on a study of the area's environmental resources. Planning can assist you in deciding between conflicting uses or figuring out how to make them work together. The progressive deterioration of environmental assets crucial to tourism can be prevented by planning ahead for tourism growth and avoiding costly and dangerous blunders (Sunlu, 2003).

The necessity for action to stop the loss of biodiversity is acknowledged by a number of international accords and initiatives. The 2010 Biodiversity Target, the Millennium Ecosystem Assessment (MA), the Sustainable Development Goals (SDGs), the Convention on Biological Diversity (CBD), and other multilateral environmental treaties are among them. Another is the recently established International Science Policy Platform on Biodiversity and Ecosystem Services (IPBES). These agreements and initiatives serve to inform the public about the problems while also offering guidelines and instructions for effective action to save and restore biodiversity and ecosystem services (Common & Towards, 2010).

The tourism industry is already taking steps to reduce biodiversity impacts and support conservation. Some tourism businesses, for example, have established funds to support conservation projects, while others encourage tourists to make voluntary donations to conservation organizations in the areas they visit (CBD & UNEP, 2007).

One of the most important and rapidly expanding sectors worldwide is tourism. The negative consequences of tourism are more obvious as the number of visitors increases. To control the steadily rising tourist flows, the environment and host communities are under strain. Tourism has an impact on the environment in a number of ways, including erosion, changes to the flora and fauna and landscape, problems with waste disposal, littering, and

water-related problems such as contaminating the water supply and a shortage of clean drinking water. Tourists are impacted by environmental pollution, which in turn is increased by tourism. Some tourist locations may be put at risk by environmental pollution; after all, as was already mentioned, destinations depend on their environment's quality to draw visitors and keep them coming back. Biodiversity is being lost due to the loss of habitat, over-exploitation of resources, climatic changes, pollution, invasive exotic species, diseases, hunting, etc. Since it provides us with several economic and ethical benefits and adds aesthetic value, it is very important to conserve biodiversity.

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