



Environmental Effects of Loktak Lake Tourism in Manipur (India)

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ABSTRACT:

Tourism is one of the biggest and fastest-growing sectors in the global economy and has a significant impact on the environment. The relationship of tourism with the environment is complex. It involves many activities that can have unpleasant environmental effects and Tourism has the potential to create beneficial effects on the environment by causal to environment protection and conservation. Loktak Lake is a freshwaterlake in Northeast India and the largest freshwater lake in South Asia. In and around the lake there are many attractive tourist sites and spots starting from national parks to residents in floating huts inside the lake. Large tourist inflow occurs every year which causes many changes and disturbances to the natural ecosystem and to the natural habitats of various rare faunas which are found only in the lake area. Some encouraging aspects of the lake can also be found in tourism itself too. The present paper tries to evaluate both the positive and negative impacts of tourism activities on Loktak lake and the challenges faced to protect the Loktak ecosystem.

Keywords: Eco-system,Loktak Lake tourism,Keibul Lamjao National Park, Sustainability.

Introduction:

Loktak Lake in Bishnupur District which is 48kms from Imphal City, the capital of manipur and it is the largest fresh water lake in the North–East India. The lake covers an astounding 287 sq km and is fed by 5 main rivers: Manipur River, Nambul, Yangoi, Nambol, and Thongjaorok. It is a beautiful stretch of water resembling a miniature inland sea. A day spent at Loktak Lake is a lifetime of memory. Fishermen living in floating islands called Phumdis in floating huts known as Phumsangs are unique sights of this lake. The only floating National Park in the world, the Keibul Lamjao National Park located on the Loktak Lake is the last natural habitat of the “Sangai” (*Rucervus eldii eldii*), the dancing deer of Manipur. The Keibul Lamjao National Park is the last refuge of the endangered brow-antlered deer or Sangai, Manipur's state animal (Manipur Tourism). A glimpse of the deer in this unique wetland ecosystem is a must for any wildlife enthusiast.

In addition, the lake shelters about 230 species of aquatic plants, 100 types of birds and 400 species of fauna like barking deer, sambar and Indian python. Loktak is a visual treat for birdwatchers, who can find species like black kite, East Himalayan pied kingfisher, northern hill myna, lesser eastern jungle crow, Burmese pied myna and lesser skylark. Other wildlife to be seen include: Hog Deer, Otter, a host of waterfowls and migratory birds.

Being the largest freshwater lake in North Eastern India, Loktak Lake is also called the only Floating Lake in the world due to the floating phumdis which is a heterogeneous mass of soil, vegetation and organic matter that takes place at various stages of decomposition. The lake has a significant role in the economy of Manipur and is considered to be the lifeline for the locals due to its importance in their socio-economic and cultural life. Also, the ancient Loktak Lake serves as a source of water for hydropower generation, drinking water supply and irrigation. Not just this, but by visiting the place one could see how Loktak Lake is a source of livelihood for the rural fisherman who lives in the surrounding areas. Adding a little more to it the lake was initially designated as a wetland of international importance under the Ramsar Convention on March 23 1990, considering the ecological status and the biodiversity values of Loktak Lake (Ramsar site information service,1990).



Fig 1 :A Fisherman in Loktak. Photo: Wetland international



Fig 2:A home on Floating grass of Loktak. Photo: Wikipedia

Loktak Lake, which acts as a natural reservoir for rivers and streams flowing from the hills, and its related wetlands are central to the State's life. There are 55 human settlements around the lake. A recent study indicates that 54 percent of households are dependent on the lake for drinking water and other domestic purposes. At least 57 percent of them are involved in fishing, fish farming, and fish marketing; 24 percent in fishing and agriculture; 6 percent in weaving lake products; and 4 percent in ferrying boats. That is, more than 90 percent of the households are dependent entirely on Loktak for sustenance (Salam,2022).

In 2006, the State government enacted the Manipur Loktak Lake (Protection) Act "to provide for administration, control, protection, improvement, conservation and development of the natural environment of the Loktak Lake". It restricts certain activities in the lake, such as the free-ranging fishery as traditionally practiced by the local people (ibid). State Government is planning to develop a Loktak Mega Eco-Tourism Project, which will develop Loktak as a world-class tourist destination, with a golf course, amusement park, artificial beach, integrated ropeways, and homestays. a Loktak Mega Eco-Tourism Project, which will develop Loktak as a world-class tourist destination, with a golf course, amusement park, artificial beach, integrated ropeways, and homestays.

Both domestic and international tourists had been visiting Loktak lake since the formation of Manipur tourism in 1987 and there had been various outcomes of tourism activities in and around the lake with the upcoming plan of the State Government to expand the tourism scope of Loktak lake there might be various consequences to the natural setting of the lake ecosystem.

Objective:

To find out the various kinds of environmental effects of tourism activities on Loktak lake and discuss the future conservation of Loktak lake's ecosystem.

Methodologies Applied:

Interview of the local community along with participant observation was mainly applied to get the real picture of the present research. Secondary sources were also used to gather facts regarding the Loktak lake and its ecosystem.

Findings and Discussion: The impact of tourism activities on the Loktak lake Environment can be discussed under two headings:

1. Positive Impact:

Protection and Conservation: Tourism can significantly contribute to environmental protection, conservation and restoration of biological diversity and sustainable use of natural resources (Rath and Gupta, 2017). Revenue from park-entrance fees and similar sources has to be allocated specifically to pay for the protection and management of environmentally sensitive areas like the Keibul Lamjao National park. Because of their attractiveness, pristine sites and natural areas, the Loktak Lake area is identified as valuable and the need to keep the attraction alive can lead to the creation of national parks and wildlife parks.

Environmental Awareness: Raising Tourism has the potential to increase public appreciation of the environment and to spread awareness of environmental problems when it brings people into closer contact with nature and the environment. With the Manipur state Government's various plans of turning Loktak tourism into a giant tourist hot spot by introducing various carbon-emitting types of machinery and modification of the natural setting for water sports, the local communities and the general public have grown more aware of environmental harm and destruction.

2. Negative Impacts

Solid waste and littering: Waste disposal is a serious problem and improper disposal can be a major despoiler of the natural environment of the lake. There is no proper solid waste management system by the Government or at the community level. As different kinds of tourists arrive at Loktak area, huge tons of solid waste have been left behind every year. Solid waste and littering can degrade the physical appearance of the water and cause the death of water animals (UNEP, 1997). Except for Hotels and Restaurants, which collect waste materials and burn while some waste

items are being given to garbage collecting agencies. But this kind of management is not enough and a huge amount of solid waste are usually left alongside the road or at the picnic spots. Even the burning of waste materials like plastic bottles, plates, papers, bags, and plastic disposable glasses has contributed to air and water pollution.

Sewage: Due to construction of hotels, recreation and other facilities often lead to increased sewage pollution. Wastewater generated through tourism activities has polluted the lake and surrounding tourist attractions, which gives heavy damage to the flora and fauna.

Ecological Impact: The area is inundated throughout the year, affecting its natural flow due to the Loktak hydroelectrical project. The migratory fish population from the Bay of Bengal has reduced, the floating grasses (phumdis) have mushroomed due to almost stagnant water, and agricultural avenues reduced (Rajpurohit, 2022). As the floating grasses have become thinner, the Sangai deer will not be able to stand on the grasses for grazing and the thin phumdis cannot support the weight of the Sangai (Tubo and Hussain, 2016). The hoofs of the limbs of Sangai get stuck in the thinner marsh, thereby resulting in their drowning (Singh, 2014). After some time, it will be almost difficult to see any more of the Sangai deer which is again a kind of blow to wildlife enthusiasts and tourists.

Displacement of Fishermen and Loktak Residents: With the state Government's plan of turning the Loktak lake site into a world-class tourist spot, many fishermen along with their floating huts are being made to change their area of residence inside the lake (Mongabay, 2022). But to a visitor or tourist, the fishermen's populace is an integral part of the Loktak ecosystem. The forcible removal of the vegetation, the dredging, and the operation of motorised vessels, all will lead to the destruction of habitats, impact on nutrients, and increase in turbidity and noise, resulting in oil and lubricant leakage and pollution – all of which will have a serious impact on the fish and other aquatic fauna & flora, and in turn on the livelihoods of the fishers (Dharmadhikary and Wangkheirakpam, 2020).

Conclusion:

Loktak lake is currently in a deep ecological crisis, and the water bodies are showing signs of near-total collapse. Unless remedial measures are taken straightaway, the whole ecosystem is headed for a major catastrophe (Khoiyangbam, 2021). The main cause for the degradation is mainly Anthropogenic in nature. Whether it be for daily sustenance or for economic-driven tourism activities. Tourism has the potential to increase public appreciation of the environment and to spread awareness of environmental problems when it brings people into closer contact with nature and the environment. This confrontation may heighten awareness of the value of nature and lead to environmentally conscious behaviour and activities to preserve the environment (Sunlu, 2003).

Tourism should strive to attain sustainability in all spheres of economic, environment and social existence. The Government and the general public should go hand to hand to bring about a solution to the present crisis of Loktak lake and achieve a long-term positive impact on the lives of the people and the environment. It is high time to bring about a balance between tourism activities and environmental protection so that the future of the precious flora and fauna, the eco-system and of Loktak lake is saved from any unwanted ecological crisis.

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