


## TOURISM MANAGEMENT PRACTICES AT LOKTAK LAKE, MANIPUR



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### ABSTRACT

Being the largest freshwater lake in South Asia, Loktak Lake of Manipur, India is a popular biodiversity destination. It is the home for the Keibul Lamjao National Park - the only floating national park in the world. The lake is turning into a sustainable tourist destination considering the importance of its preservation and conservation. Using exploratory research, the paper aims to explain its flora and fauna, the pattern of the lake, water quality and usage, and about the phasmid vegetation. The work furthers the documentation available on the subject and is of use for tourism lovers, researchers and policy makers.

<b>Keywords</b>	sustainable tourism, water management, lake management, phasmid, manipur tourism
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## INTRODUCTION

Loktak Lake is the largest freshwater lake in South Asia and is located at Moirang in Manipur, India. “Lok” means “stream,” and “tak” stands for “the end”. It is famous for phumdis which are large heterogeneous or mass of vegetation, soil, and organic matter at various stages of decomposition. Loktak Day is observed on October 15 every year. This ancient lake is of economic value to the state. It serves as a source of livelihood for the rural people, especially the fishermen. The lake was designated as a wetland of international importance under the Ramsar Convention on March 23, 1990, considering its ecological and biodiversity values. The lake is well connected by road and air for visitors and tourists. Imphal, the capital of Manipur, is thirty-nine kilometres away from the lake. The lake is a unique destination for tourism and offers an excellent opportunity for visitors to enjoy the beauty of the lake floating with phumdis of different geometrical shapes. The two islands - Sandra and Phubala - offer facilities to tourists. The Sandra Island has a cafeteria in the middle of the lake and is an ideal tourist spot. Visitors get a bird eye view of life on the lake.

The only floating national park in the world, the Keibul Lamjao National Park is located on the Loktak lake is the last natural habitat of the Sangai, the dancing deer of Manipur. Fishermen living in floating islands called as phumdis in floating hut known as Phumsangs are unique sights of this lake

The lake is broadly divided into north, south and central zones. However, Loktak lake is rich in biodiversity comprises of 233 species of aquatic macrophytes of emergent, submergent, free floating and rooted floating leaf. There are fifty-seven species of water birds. The lake is also facing some threats and issues like loss of vegetation, deforestation, and shifting cultivation in the catchment areas have resulted in soil erosion resulting in the lake shrinking and an increase in salt level. It is also noticed that the decrease in phumdis has decreased in the Keibul Lamjao National Park, thereby threatening the survival of Sangai deer and interference in the migration of fishes. It is noticed that the livelihood of people depends upon the sale of edible fruits and rhizome of lotus plant products, and plants have also degraded because of polluted water.

To address all these issues, the Government of Manipur has set up the Loktak Development Authority under the Manipur Loktak Lake Protection Act, 2006, to provide administration, control, protection, improvement, conservation, and development of the natural environment of the Loktak lake.



## **RESEARCH METHODOLOGY**

Exploratory Research Methodology is followed in this study. The basic idea of the research is to have better understanding on Loktak lake. Secondary data sources are used for collecting the data necessary for the research.

## **OBJECTIVES THE STUDY**

- To understand the importance of water preservation at Loktak lake.
- To create awareness on Loktak lake as a natural site.
- To promote Loktak lake as a sustainable tourist destination.

## **NEED OF THE STUDY**

The study intends to understand the importance of the preservation and conservation of Loktak lake water as a natural attraction and floating national park, which has to be preserved and maintained. Loktak lake is an important source because it is the shelter for about 230 species of aquatic plants and around 400 species of fauna. Moreover, it is a visual treat for birdwatchers.

The study shows that due to farming practices, urbanization, massive destruction by people, and poorly planned development activities, wetlands from a large portion of the globe have disappeared. Through this study, awareness among the local community is highlighted as such exploring resources where fibrous plants play main role to local women.

The study will help the local community to protect and preserve this natural attraction. Incoming of tourist's book for a homestay along the lake to get a first-hand experience of life by the lake. This lake offers first-hand experience to explore the lake by boat in long fishing boats in the early hours of the morning.

However, this place offers a lot for tourists, like homestay, huts, and green rings of Loktak, but it was to be removed so that the lake can be rejuvenated. This was a decades-old struggle between the authorities and the local people, including fish folk and homestay owners who believed that the clean-up is a cosmetic measure meant for the benefit of foreign tourists.

## **SCOPE OF THE STUDY**

Loktak lake is under the Ramsar convention, where the lake has been designated as a wetland of international importance and is rich biodiversity. Wetlands supply a number of economic, social and ecological benefits. Loktak lake is considered as the lifeline of the people



of Manipur due to its importance in their socio-economic and cultural life. The lake is known to provide ecological and financial security to the people.

Moreover, there are six villages situated nearby the Keibul Lamjao national park, Manipur and their communities residing are found that collection of aquatic vegetation from the park, fishing, rearing ducks and cattle are income for the local community. Loktak lake uses the lake for drinking and households uses, hydroelectricity power generation, irrigation, biodiversity, recreation etc.

## **RESULTS AND DISCUSSION**

### **FLORA AND FAUNA**

Blessed with a varied variety of flora and fauna. Depending on the hill ranges, the climatic conditions. The Shirui lily festivals celebrates the state flower of Manipur and the event is a part of Manipur tourism efforts to develop and implement sustainable and responsible tourism in the state and increase awareness about the endangered species of Manipur Shirui lily found only in the Shirui hills. The festivals are organized from around April to May every year. The department of tourism will organize the fourth state-level Shirui Lily festival from 25 to May 28 2022.

Every year the state of Manipur celebrates the Manipur Sangai festivals from 21st to 30th November. The festival is named after the state animal, Sangai. The festivals are labelled as the grandest festival of the state today and helps promotes Manipur as a world class tourism destination. The festivals showcase the tourism potential of the state in the field of art and culture, handloom, handicraft, indigenous sports, cuisine, music and adventure sports of the state. The festivals reflect the tourism potential in the state. The Manipur Sangai festival showcase state cuisines at a number of food stalls which is opened during the festivals. Manipur popular dishes include fish curry and Eromba (a dish prepared with boiled vegetables and fermented fish) Every Manipur dish whether vegetarian or non-vegetarian has its own distinctive flavour because of the natural and indigenous ingredient used in preparing these dishes.

### **PATTERN OF LOKTAK LAKE**

Loktak lake comprises of small lakes locally called Pats, which becomes one sheet of water during monsoon. The lake is oval in shape with maximum length and width of 32km and 13 km respectively. Loktak lake is called a floating island. The development activities include water resource and agriculture development. Loktak lake ecosystem and people living in and around is also affected because of increasing human demand and agricultural forms which is



the single sources of livelihood of the community. Rapid increase in population insignificant increase in the cultivated area has led to land degradation, increase in soil erosion, pressure on the forest and increase in fertilizer usage.

## **WATER QUALITY AND USAGE**

Loktak lake is in danger due to increasing pollution, however lake water is used for irrigation and ecological purposes. Analysis of water quality of various zones especially in the northern and southern zones. Intense use of fertilizers usage in the agriculture field and fish farming in the northern zone are also major factors for water quality deterioration.

Fishery is an important economic resource of Manipur contributing to three percentage of the state GDP. Loktak lake provide more than 50% of fish production. Sadly, it is seen that use of exploitative fishing techniques and inadequate marketing infrastructure are the barriers to the growth of this lake leading to decline of fishes.

## **KEIBUL LAMJOO NATIONAL PARK**

Within the lake body in the southern zone the national park, a distinctive natural habitat known as Sangai. The habitat comprises of floating phumdis , hillocks and elevated strips of land. Sangai the state animal lives other animals like hog deer, wild boar and large indian civet. The park is rich in fauna and account for 81 species of animals. Degradation of Loktak lake, particularly after construction of Ithai barrage has seriously affected the park habitat. This lake has been a source of sustenance for around fifty-five villages of India and serve them with fresh water, food, shelter and sustenance. The lake is famous with another name as a floating lake it is because of the large vegetation that it supports.

## **LOKTAK LAKE IMPORTANCE**

Loktak lake originates from Manipur River in Moirang, Manipur. This lake is the largest freshwater sources for fifty-five villages for domestic use. A dam was built in the 1980 which is responsible for high power generation. Loktak Lake has a floating national park named Keibul Lamjao national park that locates on Phumids. The Loktak lake is a perfect destination and the reason is the phumdis, people go boating and explore the lake. Through boating you can reach different floating islands which is a unique experience for people throughout the world. Keibul Lamjao National Park is the only natural floating national park in the entire world, it is famous for Bro-antlered deer and dancing deer.

## **OTHER DISCUSSION**

Seven water quality parameters like temperature, pH dissolved oxygen, alkalinity, chloride and hardness were studied. The temperature of the water was measured by digital



thermometer and is expressed in degree celsius, according to the study pH value was determined by Hanna digital pH meter dissolved oxygen and biological oxygen demand by Winkler Titrimetric method, alkalinity by using potentiometric titration method and chloride content was measured by using Mohrs argentometric method. The pH of Loktak lake varied between 6.2 and 8.2 during the study period. The pH of lake water is almost uniform throughout the season with a little variation. Lake becomes acidic in winter and slightly alkaline in spring and post monsoon.

A total of four sampling sites was taken that is site one, site two, site three and site four. Water sampling was performed during rainy season, morning between 6:30 AM to 9:30 AM and then the samples were given for testing, analysing the seven parameters given above.

According to the observation all the four sites carried different pH value during rainy and winter season. Moreover, the higher dissolved oxygen contain may be due to luxuriant growth of algae and aquatic plants resulting to higher photosynthetic rate as a result of increased temperature. However, biological oxygen demands most important parameter in water is the oxygen and it is seen that high BOD is visible in site I, i.e. more of domestic waste from local community.

High alkalinity is found in site iv is due to the use of detergent and soap for domestic purpose by the local villagers near the site. Along with alkalinity there is chloride is one of the important water parameters and it is found in nature in the form of salt of sodium, potassium and calcium. Chlorides in water are the indicators of large amount of non-point source pollution by pesticides, grease, oil, metal and other toxic material.

## CONCLUSION

Loktak lake is famous for its floating vegetation called a phasmid. Phumdis is the circular vegetation that is made up of mixture of soil, vegetation and other organic matter. The mixture thickened into solid since past years. It is home to aquatic species of plants and species of animals.

A dam was built on the lake in 1980 and today it supplies hydropower to different states of India. Loktak lake supports floating islands and a national park. Manipur river is the sources for the formation of this lake. Moreover, there are two main zones of the lake which are known as buffer zone and core zone. Buffer zone is known as balance area and core zone is known for the protected area.

In the study it is seen that domestic waste and sewage waste into the lake which cause a risk pollution for this freshwater source. Due to urbanisation the lake has been turning



polluted. The consistent drainage of municipal waste, pesticides and fertilisers has been draining the quality of water. Domestic human activities like bathing, washing clothes and utensils is a serious threat. This study shows that quality drained over the years and what other human activities are responsible for harassing the natural beauty.

It is also noticed that high dependency on Loktak lake by those people residing in and around it is for consumption purpose and household financial earning because of human activities the lake was found to be polluted and destruction of the surrounding natural environment occurred resulting in poor socio-economic condition of the community.

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