

Wetland and Tourism – A Case Study of Pulicat Lake, Nellore District of Andhra Pradesh

Potukuchi Thryambakam

Director, Ketan's Institute of Hospitality Management, Hyderabad – 500036, India

Abstract

World's surface is covered by valuable ecosystems such as wetlands to the tune of 6%. Wetlands are playing an instrumental role not only for the local flora and fauna and people but also the communities living outside to wetlands. Many wetlands are prime locations to tourism. They provide important services for tourism. They provide resources for tourists such as food and water, and raw material for building tourism infrastructure, and they regulate ecological processes that contribute to a healthy environment such as climate regulations and water purification. One of such wetlands is Pulicat Lake in P.S. Nellore District of Andhra Pradesh. Pulicat lake is the third most important wetland for the majority shore birds on the eastern seaboard of India. The lake is extremely important are for a variety of migratory birds like waterfowl, pelicans, herons, egrets, storks, flamingos, ducks, gulls, and terns. This research paper discusses the threats and pollution and human impacts, which have great bearing on the flora and fauna of the Pulicat Lake, fisheries, the pollution from pesticides, sewage, agricultural chemicals and industrial affluent which are gradually becoming the major threat for the very existence of the great Pulicat Lake.

KEYWORDS : Wetland, lake Tourism, Sustainable Tourism, Bio – Diversity in Andhra Pradesh.

Introduction

Tourism is currently the world's largest industry (\$ 3.4 trillion annually) and ecotourism represents the fastest growing segments of this market. With advances in the transportation and information technology, even more remote areas of the earth are coming within reach to travelers. In fact, tourism is now the world's largest industry, with nature tourism is the fastest growing segment (Yadav, 2002) tremendous potentiality for sustainable development of its potential nature based tourist resources (Seace, et al., 1992)

The term "Ecotourism" was coined by "Hector Ceballos Lascurain" in 1983, and was initially used to describe the nature-based travel to relatively undisturbed area with an emphasis on education. The concept of ecotourism is new one, and the state has Wetlands are ecosystems or units of the landscape that are found on the interface between and and water. While water is a major factor of wetland definition (Ramsar Convention Bureau, 1997), soils, vegetation and animal life also contribute to their unique characteristics (Koetze, 1996; Howard, 1995; Roggeri, 1995).

Wetlands are amongst the most productive of the world's ecosystems, providing services such as water, food, construction materials, transport, and coastline protection, as well as

important opportunities for tourism and recreation, which are also defined as ‘ecosystem services’. The scale of tourism at the global level is impressive. In 2012, international tourism is expecting to reach 1 billion international arrivals and is forecast to rise to 1.8 billion by 2030. Thus the tourism phenomenon can be expected to continue to expand as more people in more countries around the world have growing affluence and time to travel.

Domestic tourism is even more significant than international, with estimates pointing to 4 billion domestic tourists worldwide. Wetlands are a significant part of the global tourism experience and are likely therefore also to be a key part of the expansion in demand for tourism locations. People are naturally attracted to water, to coastal wetlands such as coral reefs and beaches, and to inland wetlands such as lakes and rivers, reflecting the strong bond between people and nature as well as the unique aesthetic appeal of wetlands.

The Ramsar Convention has only recently formally addressed wetland tourism, recognizing the increased demands for tourism expansion and the potential negative impacts on the health of wetlands, but also understanding that, if managed sustainably, tourism can bring many benefits, environmental, social and economic. To set a framework for managing tourism in and around wetlands, the UN World Tourism Organization’s definition of sustainable tourism is an important tool for the Convention in applying sustainable practices in wetlands. Using this definition, sustainable tourism shares the same aim of maintaining ecological character as ‘wise use’ as defined by the Convention.

As a result, it has proved difficult to define wetlands, and over 50 definitions exist. That used by the Ramsar Convention (1997: 2) is as follows:

“areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters”.

This definition provides significant latitude – wetlands, as a result, come in a whole host of forms and types. The Ramsar Convention recognises five major wetland systems (Ramsar Convention Bureau, 1997), while others identify up to seven main groupings (Dugan, 1990). The major Ramsar groupings are:

- ❖ Marine (coastal wetlands);
- ❖ Estuarine (deltas, tidal marshes, and mangroves);
- ❖ Lacustrine (lakes and associated wetlands);
- ❖ Tiverine (rivers, streams and associated wetlands);
- ❖ Palustrine (marshes, swamps and bogs).

These forms are further divided into more than 30 sub-divisions classifying them according to physical, chemical or biological characteristics. Wetlands are distributed all over the globe and are estimated to cover about 6% of the earth’s surface (Maltby, 1986).

Tourism in wetlands offers many positive opportunities at the national, regional and local levels but also many challenges as well. The opportunities can include economic

benefits to national and local economies, support for local livelihoods and local cultures, and, importantly, support for wetland conservation, too. The case studies illustrate well the challenges encountered in wetland tourism – the impacts on wetlands from the development and operation of tourism facilities, such as degradation of wetland areas for extraction of building materials, infrastructures, over-abstraction of water, inappropriate waste disposal, and so on, as well as the direct impact of tourists on wetland ecosystems through noise pollution, excessive trampling, disturbance of wild species, amongst others.

Sustainable tourism may be defined as “the tourism that allows visitors to enjoy an attraction, community, or region in such a way that the local natural and artificial environment and social culture can be sustained indefinitely” (Bramwell, 2006). In other words, sustainability in regards to tourism is described as a business with minimum negative impacts on local natural resources, economically with good business practices that continue to contribute to the economic well-being of the local community, and socially with conservation of local culture and social values (Buckley, 1999; SRCW and UNWTO, 2012).

Ecotourism may be defined as a responsible travel to natural areas that conserves the environment and improves the well-being of local people (Drumm and Moore, 2005). It is claimed to help educating the traveler; providing funds for conservation; directly benefiting the economic development and political empowerment of local communities; and fostering respect for different cultures and for human rights (IUCN, 1997; Diamantis and Ladkin, 1999; Honey, 1999; Zambrano et al., 2010).

Moreover, as Drumm and Moore (2005) contend, ecotourism is one of the alternative economic activities and viable strategy to simultaneously make money and conserve resources. The following principles distinguish it from the wider concept of sustainable tourism (Khanal, and Babar, 2007): contributes actively to the conservation of natural and cultural heritage; includes local and indigenous communities in its planning, development and operation contributing to their well-being; interprets the natural and cultural heritage of the destination to the visitor; and lends itself better to independent travelers, as well as organizes tours for small sized groups

Objectives of the Study

The specific objectives of the study were: to Analyze the role Wetland and Sustainable and Eco Tourism by taking a study on Pulicat Lake, P.S. Nellore District of Andhra Pradesh as a destinations from the kaleidoscope of Eco Tourism. The key findings are to know how those areas have been perceived by the people of that area for the upliftment and betterment of their lifestyles. The Positive and Negative impacts of Tourism and tourist activities have been studied.

In short the objectives can be summarized as the following

Objectives:

- ❖ Defining the role of ecotourism in the frame work of sustainable development strategy, preconditions for ecotourism in areas having biological diversity (sustainable mobility, conservation and management of natural and cultural landscapes, wetlands etc.)
- ❖ Identifying the best practices of ecotourism in Wetlands and such areas
- ❖ Development of strategies for ecotourism development, at the global, national and regional level.
- ❖ Reducing the threats posed by uncontrolled tourism development at the fragile sites to conserve.
- ❖ Developing a source of long term financial, sustainability for the conservation of protected areas sites.

Research Methodology

The paper entitled Wetland and Tourism – A Case study of Pulicat Lake of P.S. Nellore District of Andhra Pradesh, India is a simple descriptive case study.

Data and information were obtained on the spot observation of ecotourism resources by the author supported by secondary information sources like books, papers, reports, maps and information from local people.

For this study, data related with tourist flow from Government Tourism Department, Department of Forests, Andhra Pradesh, field survey for primary information and different tourism promotion organization were collected and used.

PULICAT LAKE

Pulicat is a great lake of Andhra Pradesh and Tamilnadu, which houses a variety of flora and fauna and is an ecologist's dream island. We are talking about the Pulicat Lake, the second largest brackish-water lake or lagoon in India. It is extending over the Ponneri and Gummidipundi taluk of Thiruvallur district in Tamilnadu and Sulurpet and Tada Taluk of Nellore district in Andhra Pradesh and covers an area of about 461km. The lake also encompasses the Pulicat Lake Bird Sanctuary. One can see that the lagoon is aligned parallel to the coast line with its western and eastern parts covered with sand ridges. The area of the lake varies with the tide. The fishing village of Pulicat is at the south end of the lake. The towns of Dugarājupatnam and Sullurpeta are two important towns on the periphery of the lagoon. Three major rivers which join the lagoon are the Arani River at the southern tip, the Kalangi River from the northwest and the Swarnamukhi River at the northern end, along with some smaller streams. The lagoon has rich flora and fauna diversity, which supports active commercial fisheries and a large and varied bird population. The shallow lake is known for its diversity of aquatic birds and is an important stopover on migration routes and is reported to be the third most important wetland on the eastern coast of India for migratory shorebirds, particularly during the spring and autumn migration seasons. In view of the rich avifauna of the lagoon, two bird sanctuaries are established in the lagoon, one in each of the two states of Andhra Pradesh

and Tamil Nadu. But pollution and human impacts in the form of Arani and Kalangi rivers carrying runoff from agricultural fields in the drainage basin causing an increase in pollution load from fertilizers and pesticides into the lake, pollution from domestic sewage being released to the lake. Also the petrochemical complex, power plant and a satellite port on Ennore creek have further aggravated the problem. In spite of all this, this truly is paradise for the bird watchers and nature lovers.

The minimum and maximum depth of Pulicat Lake is 0.2 m and 17.5 m respectively. As the water level rises by November each year with monsoon rains the salinity drops considerably the lake has luxuriant stocks of fish, prawn and lime shell deposition underground. Silica sand, gypsum and other minerals are also prominent in the lake side. In Tamil, Pulicat Lake is called as “Pazhaverkadu” which means “forest of rooted fruit” which specifies the mangroves. It includes 26 fisherman villages that depend the Pulicat Lake for livelihood. The total area of the lake is 600 km² with average depth of 1–3 m which favours larval development of fishes and shrimps. These organisms from the sea are migrated to the lake for laying eggs that attract the migratory birds from other countries. Only dry wastelands are lining the roadside to Pulicat Lake. Some of the villages can be reached only by boat. Those villages are located on long sandy stretches with 25 km long and 0.1 to 1 km width. It separates the sea and backwater. Those fishermen of the sand bar are the evicted people from the Sriharikota rocket launching station area. They lead a tough life and are struggling everyday for fishing. In this perspective, there is a need to conserve the ecosystem with potential biodiversity resources as well as fishermen community for their livelihood. So there is a necessity to look on to the coastal resource management implications are very much needed in this hour.

Problems in Pulicat Lake

1) Damages in the environment

Pulicat Lake is one of the most beautiful location and visitors through the area and cause utmost pollution and thrown away the waste near the shore areas where the fishes and other organisms get accumulated with plastic wastes and they die due to some toxic chemicals present in the plastics. Sustainable fishing is the need of the hour and the fisher folk have to be conscientised about it.

2) Pollution

Agricultural fields in the drainage basin which result in pollution load from fertilizers and pesticides into the lake. Shrimp and crab culture ponds situated along the shore of Pulicat, also pollute the lake by discharge of untreated effluent waters from the culture ponds. Such polluted effluent water may even incorporate toxic pollutants and pathogenic organisms into the biodiversity, food-chains and into locally consumed and exported seafood like shrimps, crabs and fishes.

3) Fishing Pressures

Reliable data on the population of fisherfolk on the Pulicat Lake, for the past 50 years, has been difficult to procure, since the fisherfolk keep migrating, or their villages get splitting up or getting shifted by the governments. However, the few villages for which the figures are available and as per the survey by Chacko et al. (1953), as a baseline as per Sebastian (1991) estimate of 28,000 in 50 villages, and comparing them with a survey conducted by a NGO, it shows that during the past 50 years, the total fisherfolk

population on the Pulicat Lake has gone up by about 200 to 350% and the number of active fishermen has gone up by about 166%.

As the total population of the fisherfolk increases, active fishermen among them are obliged to catch more and more fish, in order to feed the growing population at home. Add to this growth in the traditional fisherfolk population, there is almost an equal number of non-fishermen who, in recent times, have swooped on to the lake, to catch shrimp, for export. Therefore, it might be surmised that the total fishing pressures on the Pulicat Lake could have gone up by about 600 to 700% than the 1950 levels. This boom in fishing pressures has resulted in heavy over-fishing and the consequent depletion of fisheries, leading to unprecedented competition, frustration and fishing conflicts.

4) Village Population

There are approximately 52 fishing villages located around the Pulicat Lake, harbouring about 30 to 40 thousand fisherfolk, who have been survive for generations, exclusively on fishing in this lake. Their population has naturally been growing, but the fishery resources in the lake have been inversely dwindling rapidly, so that there is a severe competition between the escalating fishing pressures and the depleting fishery resources, on this lake.

5) Non-Fishermen

Being lured by the lucrative trade in shrimp exports, several non-fishermen from the distant villages around the Pulicat Lake also have started fishing for shrimps on this lake. They come late in the evening, after their farm labour is over, and fish throughout the night, on the lake. More than adding to the already prevailing fishing pressures from the traditional fishermen on this lake, these non-fishermen practice destructive fishing gear and methods, like drag-nets (konda-valai), which destroy both the bottom habitats on which they tread and the fishery stocks, by catching even tiny juveniles.

6) Tourist Behaviour

This an important aspect to be highlighted as the behavior of tourist in this lake site has both good and bad effects in the conservation and preservation of this beautiful wetland lake.

SUSTAINABLE APPROCHES FOR PULICAT LAKE

This provides a framework to assist the development of policies for more sustainable tourism based on: minimizing the negative impacts of tourism on society and the environment; and maximizing tourism's positive and creative contribution to local economies, the conservation of natural and cultural heritage, and the quality of life of hosts and visitors.

The twelve aims for an agenda for sustainable tourism are:

- 1) Economic viability
- 2) Local prosperity
- 3) Employment quality
- 4) Social equity
- 5) Visitor fulfillment
- 6) Local control
- 7) Community well-being
- 8) Cultural richness
- 9) Physical integrity

- 10) Biological diversity
- 11) Resource efficiency
- 12) Environmental purity

The order in which these twelve aims are listed does not imply any order of priority: each is equally important.(UNEP - UNWTO – 2005).

Conclusion

Wetlands are distinctive ecosystem in between aquatic and terrestrial ecosystems or are transitional zone ecosystems between dry land and open water body. Accordingly, Andhra Pradesh owns one of the biggest Wetlands known as PULICAT LAKE which have national, regional as well as global ecological and socio economic significances. In spite of all their indispensable functions and values, these wetlands are in the rapid crisis of deterioration due to neglect and unplanned and skewed development needs and priorities. Consequently, wetlands are ranked amongst the most highly threatened ecosystems in India and unfortunately the degradation and loss of wetlands are continuing. Though natural factors, ecological factors and lack of potentials are important wetland influencing factors, the most sever and coming severing threats are those related anthropogenic factors. Most of these anthropogenic factors are raised due to engaging the stakeholders on the immediate benefits and values of wet wetlands instead of the long term and sustainable benefits and values.

In order to reverse these emerging problems and conserve these fragile but crucial wetlands, integrated problem solving approach through realizing the collaboration of relevant stakeholders from policy level down to grassroots community is indispensable opportunity to Indian wetlands. Government, Communities, private sector and all others who have stake in wetlands should cooperate and contribute their part. Decision makers at higher levels are required to strengthen sustainable wetland management efforts through effecting policy and legislation, improving institutional arrangements and supporting capacity building initiatives.

It is appropriate to reassess the significance of wetlands and their environs for national development, and also the consequences of wetland degradation.

our study confirmed that ecotourism development in the study area has perceived positive and negative economic, environmental, and socio-cultural impacts in the study area; and value-chain analysis in ecotourism sub-sector helps to identify the major stakeholders in the value-chain and the major challenges and opportunities for ecotourism development as a local poverty reduction tool.

Appropriate planning and management of ecotourism activities really matter for optimizing the positive economic, environmental, and socio-cultural impacts of ecotourism on the livelihood of rural local communities. The strategy implications identified through our study are believed to contribute much for future improvement in the ecotourism sub-sector in India.

Ecotourism is a field of human activity where observation and development can wisely effectively be balanced to achieve a mutual goal to the benefit of the people in the community. It can be developed effectively only when there is consent and active involvement of the local people, who should become partner in this process.

Ecotourism is possibly is one of the meaningful sources of economic development and job creation. Cross country evidence demonstrates that tourism is labour Intensive and offers a variety of small scale opportunities creating jobs for poor, women, and young people, and jobs for indigenous community. So, community based ecotourism is the best option in such areas which is owned an managed by a community and takes care of their natural resources in order to gain income through operating a tourism enterprise and using that income to better their lives. It involves conservation, business enterprise and community development and there will be direct and indirect participants and direct and indirect beneficiaries

An ecotourist always love to get the first hand experience by staying in the rural areas and closer to the nature, so there is very possibility to get a chance to know.

The local youth can serve as the tour guide with proper knowledge of the village area, the history of the concerned tribe and the available of the local resources. Encouraging local women's craft centers in the village where tourists or visitors can buy their local handicrafts and it will certainly help the economic upliftment of the women. In addition, the community has to maintain local natural area particularly the places, of scenic beauty and the places where rich bio-diversity always prevails .This way the natural resources which other wise is destroyed by the people can be conserved. The dept. of tourism and the dept. of forest have enough scope to encourage this in the local area. Local youth from the different communities should be encouraged, trained up to undertake the conducted tour for the tourist with proper publicity. Such groups can take the tourist for a guided walk around villages, watching local crafts centre, boat trip on the river, visit to protected area site, a ride on elephant, a visit to tree garden, cultural events (local music /dance). Adequate safety should be provided to the tourist which is a most important aspect in encouraging such activities. The relationship between conservation of natural area and job opportunities from tourism to the natural area is what community- based ecotourism is all about.

Acknowledgements

We are very grateful to all organizations and persons for their full cooperation in providing necessary data during data collection process. We also appreciate the efforts and hardship taken by various government agencies of Andhra Pradesh and India andUNWTO and other professional bodies, NGO's who have documented the things in such a meticulous manner which has helped us a lot in writing this paper.

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