Research Article

Assessment of Possibilities of Ecotourism Development around Jagadishpur Lake

Kamal Pathak, Hom Bahadur Chhetri**, Solank Shrestha, Sandhya Karki, Dinesh Adhikari, Saru Gahatraj, Pawan Karki, Catherine Mhae B. Jandug

1Institute of Forestry, Tribhuvan University, Nepal
2School of Landscape Architecture, Beijing Forestry University, China
3School of Forestry, Beijing Forestry University, China
4College of Forestry and Environmental Science, Caraga State University, Philippines

*Corresponding author

Accepted: 20 April, 2020; Online: 17 May, 2020

DOI: https://doi.org/10.5281/zenodo.3831108

Abstract: Wetlands cover 5% area of Nepal. There are many natural and artificial wetlands in Nepal. Out of them, Jagadishpur is the largest artificial lake and important wetland, located in Kapilvastu district. Despite the high potential for tourism development and close proximity to the Lumbini World Heritage site, this lake is less known to national and international visitors. Thus, this study was carried out to assess the possibilities of eco-tourism around this lake. Household survey, key informant survey and focus group discussion were carried out to know the people’s perception, issues and challenges for tourism development. Collected data were analyzed qualitatively. Jagadishpur along with the other nearby historical places like Sagarhawa, Tilaurakot, Gotihaw, Niglihawa, etc. have a high potential for eco-tourism development. Bird watching was found to be most feasible, followed by the Jeep Safari and boating. Other ecotourism activities like Tharu culture, homestay can also be developed. However, poor tourism infrastructure development, marketing capacity of local people on visitor management, etc. have been addressed as the issues in the study area. However, people and stakeholders are willing to sort out this problem and willing to involve in ecotourism activities. It is recommended that awareness programs by providing various skill development programs and workshops related to tourism, the information center and involvement of the private sector in the promotion of ecotourism in and around the site.

Keywords: Tourism, Potential, Rich biodiversity, Homestay, Economic benefit

Introduction

Ecotourism is one of the fastest expanding tourism markets receiving much attention in developing countries and economically poor regions around the world (TIES, 2016). Ecotourism accounts for a large share of some countries gross domestic product, and contributes to livelihoods of many people
in the country like Nepal (Isaacs, 2000). Some of the economic benefits which local communities can derive from ecotourism are employment opportunities, development associated with infrastructures and ecotourism businesses. Although eco-tourism is not a new concept in Nepal, people oriented management plans for the sustainable use of natural resources and cultural assets are being emphasized in order to channelized benefits to the affected communities (Bhandari, 1997). In eco-tourism not only the activities of the tourists are involved but also elements such as the conservation of eco-system and sustainable developments are also involved (Kunwar, 1997). Tourism can increase the opportunities for the rural poor in their own communities. It also has the potential to cut rural out-migration, to the urban areas, increase employment opportunities for the urban poor, and give them more income to give for their families in the rural areas (Joshi, 2010).

Tourism contributes about 9% supporting about 1 million jobs (WTTC, 2014). Nepal with rich ancient cultures set against the most dramatic scenery in the world is a land of discovery and unique experience has a great potential ideal destination. For example, a research conducted by (Wang et al., 2013) in China shows that the number of rural tourists is expected to reach the 771 million, valued at 114.5 billion Yuan, thus promoting direct employment for 989 million people and 36.8 million indirect jobs by the end of 2015. The livelihood condition of residents of the rural hills of Nepal is measurable and the dependency of the people on forest in general, and community forestry in particular, for their basic needs for forest products and livestock, is profound in Nepal (G.C. et al., 2016). Eco-tourism can be an economic boom if there is the proper rural tourism planning and design here in Nepal, because these days, many urban dwellers like to travel to these eco-tourism sites to get refreshed and for this purpose, Jagadishpur Lake can be a potential site.

Eco-tourism is also one of the ecosystem services that wetlands provide. At the global level, at least 35% of Ramsar Sites have reported some level of tourism activity, and this is quite consistent throughout the regions. Add domestic tourism and recreational day trips to that and the economic value generated by tourism to wetlands is truly enormous (RCS, 2006). Thus, it can be a great opportunity and a path for the reduction of poverty by utilizing wetland sources. Despite the high potential for tourism development in the JRRS area, the tourism has been poorly developed. Despite its close proximity to the Lumbini World Heritage site, the destination is not known to national and international visitors. The main objective of the study is to assess the possibilities of eco-tourism in and around Jagdishpur Lake area.

**Materials and Methods**

**Study Area**

The research was conducted in the Jagdishpur lake Kapilvastu District, located at: 27°35'N 83°05'E Province No. 5, in the Southern lowland of Nepal. The reservoir is the largest artificial lake in the country, which is located in Kapilvastu Municipality-9, about 11 km to the north of Taulihawa. The headquarters of Kapilvastu district was declared as a Ramsar site on 13 August 2003 and the site has been proposed as a designated bird sanctuary. The reservoir with a surface area of 225 hectares, constructed in the early 1970s for irrigation purposes, is fed by a canal from the nearby Banganga
River, which drains the Chure Hills. The reservoir is surrounded by cultivating land and a few smaller lakes serving as a buffer zone for bird movements. The site provides shelter for an assemblage of some rare, endangered species of conservation importance species, which include plants such as endangered Serpentine (*Rauvolfia serpentine*), rare Pondweed (*Potamogeton lucens*), threatened Lotus (*Nelumbo nucifera*), and endangered and the tallest flying bird species Indian Sarus Crane (*Grus antigone*). The current use of the reservoir by local population includes fishing, grazing, fuel wood and fodder collection, domestic use and supply of water for irrigation in 6,200 hectare of surrounding cultivated land (Kafle & Savillo, 2009)

![Location map of Study Area](image)

**Figure 1: Map Showing Study Area**

**Data collection and analysis**

Data was collected through direct observation of potential ecotourism sites. Similarly, Questionnaire survey with 108 respondents, one focus group discussions with local community and Key informant survey with 5 local elites was carried out to know the further possible opportunities and major issues in ecotourism promotion through the local people’s point of view.

Data was analyzed both qualitatively and quantitatively. Data obtained from the social survey were also analyzed using different tools. Likert scale of level 3 was used to find the people’s perception regarding potentiality. A ranking of the most feasible eco-tourism activities in and around the lake was done based on People’s response. Weighted mean was used to determine the ranking of different ecotourism activities. The results obtained from the data analysis were expressed in the form of table, bar diagrams and map, and logical presented.

Weighted mean =\((x_1*w_1 + x_2*w_2 + \ldots + x_n*w_n)/\text{total respondents}\).

Where, \(w=\text{weight of ranked position}\), \(n=\text{number of choice}\)

\(X\) represent response count for answer choice.
Results and discussion
Tourism is one of the fastest-growing economic sectors in the world (WTO UNDP, 2018). In the case of Nepal, the sector contributed altogether 4% of total GDP, while accounting for 3.9% of all jobs provided (WTTC, 2018a). There is a different form of ecotourism practiced like Species based ecotourism (Dahal et al., 2019). Homestay based ecotourism is common in Nepal. Sirubari (Syangja District, west Nepal) and Ghalegaon (Lamjung District, north central Nepal) were the first two villages to implement the concept of community, honesty which was a first effort to develop village tourism by the government of Nepal (Thapa, 2010). In Nepal, the number of visitors had reached around half a million through joint government initiatives and a well-established private sector by the year 2000. But, from 2001-2002, there was a sharp decline in immigrants (MoCTCA, 2002). The Tenth Plan will concentrate on improving tourism facilities in remote locations contributing to Nepal's increased domestic tourism (Awasthi et al., 2001). Eagles (1992) observed that in comparison to inherent reasons for travel against extrinsic ones, an eco-tourist's and general tourist's motives varied. The general traveler, he noted, preferred to feel at home in most scenarios while away from home. Based on nature, there are different categories of tourism, of which each one uses a combination of certain dimensions. For instance, Bird watching relies on nature; 'satisfaction comes solely from observations of nature' (Valentine, 1991) and Tharu culture is very Eco-Friendly, all cultural thing and activities of this tribe are deeply related with nature. Like other kind of ecotourism model, community based eco-tourism is also successful in Nepal (Waltera, et al., 2018), and it will be hard to undertake out the task if the natural environment is lacking. In ecotourism, a lot of activities are conducted. Nature walks, wildlife safari, elephant ride, nature photography, camping, scientific research, jungle drive, mountaineering, river rafting/kayaking, sightseeing, canoeing, wildflowers, plant observations, trekking and bird watching are common among them (Dhakal and Dahal, 2000). As a basic rule, eco-tourists are quite concerned with ecological issues than mass visitors, and as such, ecotourism 'promotes a deeper appreciation and admiration for cultures, heritage, and the natural world and generally preserves what they value' (Richardson, 1991). Eco-tourism serves as the best tool to conserve natural resources and becomes the solution to those problems created by traditional tourism with maximum benefits to local people. Therefore eco-tourism development is beneficial to local people on Jadishpur Lake. There are 5 protected areas included in the Terai and Siwaliks, yet only 31 of the 163 major listed wetlands fall under such PAs or their buffer zones (BPP, 1995). Wetland based ecotourism is also common in Nepal. This kind of eco-tourism are considered as a component of the green economy and is one of the fastest growing segments of the tourism industry, and focuses on environmental conservation, socioeconomic development and capitalist development (KC et al., 2015). There remains little understanding about the core issues of tourism (Wang et al., 2013) in our context but also we have lots of potentiality.
Ecotourism Potential sites:
The major ecotourism potential sites around the study area are:

Sagarhawa: Located about 0.8 km south of Jagadishpur, Sagarhawa is identified as the place where the Sakyas were massacred by the King Virudhaka. Sagarhawa was originally a forest with a lake known as Lambusagar. The present day Sagarhawa is marked with a long and beautiful lake surrounded by the mesmerizing landscape. Sagarhawa has great potential for the promotion of the pilgrimage, spiritual, bird watching and research/educational visits. The adjoining Sagarhawa village is suitable for village tour activities.

Araurakot Asoka Pillar: About 5.6 km from Jagadishpur, lies a rectangular fortified area popularly known as Araurakot, which is believed to be the natal town of Kanakmuni Buddha. At present, this site can best for spiritual walking and open meditation.

Gotihawa: About 5 km southwest of Taulihawa and 17.1 km from Jagadishpur is Gotihawa. Gotihawa is one of the major pilgrimage sites for Buddhists from all over the world. This holy site, sanctified by the birth of the Buddha has been marked by the construction of a stupa. An Asoka pillar was erected here by Emperor Asoka in 249 B.C. However, upper part of the Pillar is missing. Connected with Tilaurakot by an irrigation canal road and with Kudan by the graveled road, Gotihawa is equal potential for watching farmland and canal birds and village tour activities.

Kudan: The remains of the Nigrodharama are currently called Kudan is at about six kilometers south of Tilaurakot and a distance of 14.1 km from the Lake. Kudan has a very peaceful environment with a beautiful mango garden and small pond and is also suitable for watching birds.

Niglihawa or Nigalikot: Niglihawa lies about 4.3 km east of Jagadishpur Lake. It is the birthplace of Kanakmuni, the early Buddha of Bhadrakalpa. The site shelters an Asoka pillar erected by Emperor Asoka in 249 BC. The pillar is broken into two pieces, the lower part bearing inscription submerged in the ground and the upper part lying on the surface.

Kapilvastu Museum: It is situated at a distance of 8.3 km from Jagadishpur Lake. There are more than 136 archaeological sites in the territory of ancient Kapilavastu. Archaeological findings of Tilaurākoṭ and of other sites are kept in Kapilavastu museum. This museum operates under the Department of Archaeology of Nepal Government. This museum was established in 1962 located on the right bank of Banganga River and western site of Tilaurakoṭ mound.

Tilaurakot: 29 km west of Lumbini, 3 km north-west of Taulihawa and 8 km from the Lake, the ancient capital city of the Kapilvastu, the Sakya kingdom where Prince Siddhartha spent his early life. Important archaeological and religious monuments have been uncovered from Tilaurakot.
Figure 2: Map of Ecotourism Potential sites

Existing Attractions for Ecotourism in and around Jagadishpur Lake

Rich Biodiversity: Nepal is rich in biodiversity and regarded as hotspot for some locally and globally significant plants and animals (ICIMOD, 2009). Wetlands are usually rich in biodiversity but have problem of aquatic invasive species too (Gautam et al., 2019; Pokhrel et al., 2019). The Jagadishpur reservoir and its surrounding area are rich in biodiversity. It is one of the important bird areas of Nepal. A study carried out by (IUCN, 2015) showed that the Jagadishpur wetland is home to more than 167 species of birds, including eight species of rare birds, eight species of amphibians, and 38 species of reptiles (The Himalayan Times, 2018). It provides a home for many species of migratory waterfowl, including endangered species like the Sarus crane. The wetlands are extensively covered by floating leaved species, mainly lotus (*Nelumbo nucifera*); religiously important and threatened species are Wild Rice (*Hygrorhiza aristata*). The abundant submerged species include *Naja minor*, *Ceratophyllum demersum*, and *Hydrilla verticillata*, whereas the emergent species found around the reservoir margin are *Ipomea carnea* and *Typha angustifolia*.

Home stays: Ghalegaun and Sirubari are famous for home stay (Walter et al., 2018). Home stays are a type of tourist accommodation that differs from typical forms commonly found in communities. They offer the traveler a unique local experience that combines basic needs of food and shelter, and possibilities of interaction with the host family. The Tharu communities at Jagadishpur have started offering home-stay services to the visitors coming to their area, especially those coming to the historic Tilaurakot Durbar, Kudan, Gotihawa, and Jagadishpur Lake, among other tourist sites in the district. The guest can interact with host families; understand the local culture, tradition and customs. 13 households are providing the homestays services. Areas potential
for village tour and home-stays in JRRS include Nigali village, Jahadi village, Jagadishpur village, Bigulikot, Sagarhawa village.
Homestays will be a compelling methodology for drawing in guests to the Jagadishpur wetland and Buddhist legacy destinations, while offering guests a special social encounter and improving the pay of local people by offering nearby conventional nourishments, selling creates, performing customary melodic/social projects and selling privately delivered products.

**Bird-Watching:** Koshi tappu Ramsar site is rich in bird’s diversity many tourist visits to watch birds here (Karki, 2008). Many species of birds that inhabit the Jagadishpur wetland area are an attraction for the visitors. One can see the water birds, which have migrated from Siberia and Tibet, crossing the Himalayas, inhabiting, breeding and hatching in this area during winter. These birds can be seen floating and frolicking in the lake and the indigenous birds also join them, which is really very enjoyable to see. Bird watching view tower has been built on the southern side of Lake from which beautiful landscape of the lake can be observed. Birds like *Dendrocygna bicolor, Dendrocygna javanica, Anser indicus, Anser anser, Columba livia* etc. are commonly observed.

**Boating:** Benefit generate from wetland has high value (Thapa et al., 2020). Some are direct and some are indirect, boating is a direct one so, wetlands are the major sources of income for local livelihood through boating (recently from 2018, boating has also been started in wetland with the demarcation of certain area. This also helps to attract internal tourists. With the start of it, the number of tourists visiting to wetland has also increased.

**Tharu culture:** You can experience Tharu culture (costume, dances, pleasing food, lifestyle, languages, Festivals and traditions) very closely. Tharu community will present Jhumra dance, Lathi dance, Karra dance, Sajhani Virahani, etc. Tharu delicacies especially according to order such as ghogi, Dhikari, Sohani, Bariya, bukani, Fish curry, Gangata fry etc.

**Feasibility of Ecotourism Activities**
Out of many ecotourism activities 48% people believe that ecotourism can be promoted through jeep safari in the buffer zone of Banke national park, followed by elephant safari and cycling (Karki et al., 2020). In our study out of various ecotourism activities local people perceive following activities as their choices (Figure 3).
Figure 3. Feasibility of different eco-tourism activities

From above bar diagram, it can be observed that most of the people believed bird-watching to be the first choice eco-tourism activity in the study area while some of them said boating and jeep safari to be the better choice. However, any certain inference or decision cannot be made just by simple observing the bar diagram. Hence, weighted mean analysis is necessary.

Table: 1. Weighted Mean of Ranking of Different Eco-tourism Activities

<table>
<thead>
<tr>
<th>Weight</th>
<th>Preference</th>
<th>Bird Watching</th>
<th>Boating</th>
<th>Cycling</th>
<th>Jeep Safari</th>
<th>Socio-cultural activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>First choice</td>
<td>40</td>
<td>28</td>
<td>15</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Second choice</td>
<td>40</td>
<td>32</td>
<td>8</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Third choice</td>
<td>16</td>
<td>20</td>
<td>21</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Fourth Choice</td>
<td>8</td>
<td>16</td>
<td>40</td>
<td>15</td>
<td>29</td>
</tr>
<tr>
<td>1</td>
<td>Fifth Choice</td>
<td>4</td>
<td>12</td>
<td>24</td>
<td>10</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Weighted Mean</td>
<td>3.962</td>
<td>3.44</td>
<td>2.24</td>
<td>3.3</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Rank</td>
<td>I</td>
<td>II</td>
<td>IV</td>
<td>III</td>
<td>V</td>
</tr>
</tbody>
</table>

From the analysis of weighted mean of the ranking of different possible ecotourism activities in and around the lake, it was found that bird-watching had the highest weighted mean, followed by boating and jeep safari. Cycling and socio-cultural activities were ranked accordingly. The main
socio-cultural activity around the study area was found to be Tharu cultural dance, Maghi festival etc.

**Future Plans and Activities of Ecotourism in the area**

**Cycling:** It can be one of the best ecotourism activities around the reservoir. The lake has a perimeter of about 5 km and tourists can enjoy the beautiful scenery.

**Jeep Safari:** In the periphery of about 18 km around the wetland, there are 7 historical ecotourism sites like Tilaurakot, Gothihawa, Niglihawa etc. It can be a good way to promote tourism. Homestay owner is also willing to add this service to tourists which also helps to promote the Buddha related historical places.

**Tharu Museum:** Jagadishpur Reservoir Management Multistake holders Forum and Jagadishpur Jalashaya Homestay along with the Nighlihawa Municipality are planning to establish Tharu Museum to promote indigenous knowledge, skills and heritages.

**Picnic Spot:** There is a place for picnic near the Jagadishpur Lake. The visitors have the opportunity to enjoy, fun along with the bird-watching.

**Issues and Challenges**

Wetlands (Ponds, lakes, etc.) are vulnerable due to human intervention (Gautam and Paudel, 2020; Gyawali et al., 2019) and change in climate patterns like erratic rainfall (Poudel et al., 2020; Poudel & Gyawali, 2019; Sharma et el., 2019; Bhattarai et al., 2020). Similarly, Limited infrastructure, low level of awareness, no visitor information center, limited skilled human resources for tourism development and tourism enterprises, etc are major issues for ecotourism promotion in the area.

**Conclusions**

Tourism of Jagdishpur Lake was observed from years ago. Most of the People visited there for bird watching and cycling. However, People also came for boating, jeep safari and to observe socio-culture. According to the key personnel of the area people are keen to see Tharu dance (one of the famous cultural dance of Nepal). Therefore, for the sustainability of eco-tourism of the area all five major component of tourism should be given a proper check over a fix interval of time. Monitoring and evaluation of that component along with some infrastructure development could make Jagdishpur Lake as a tourist destination.

**Acknowledgements**

We are grateful to the reviewer and editors for their valuable input to improve the quality of this paper. We are also grateful to Institute of Forestry, Tribhuvan University, Nepal.
References


Bhandari, B. (1997). Prospective of tourism in chhekampar, Kathmandu: IUCN

Bhattarai, B., Sigdel, R., Gautam, D., Jandug, C. M. B., & Sharma, J. People’s Perception on Climate Change, its Impact and Adaptive Strategies in Kaligandaki Rural Municipality, Syangja, Nepal. DOI: 10.36346/sarjbab.2020.v02i01.001


Gautam, D., Paudel, U. (2020). Pokhara's ponds and rest place and their rarer status and importance. DOI: 10.13140/RG.2.2.19129.19040


ICIMOD, (2009). Climate change Vulnerability of Mountain ecosystems in the Eastern Himalaya, Kathmandu Nepal


Joshi, R. (2010). Eco-Tourism as a Viable Option for Wildlife Conservation: Need for Policy Initiative in Rajaji National Park, North-West India” *Global Journal of Human Social Science* Vol. 10 Issue 5 (Ver 1.0)


TIES, (2016). The international Tourism Society (TIES) "What is Ecotourism?”. Retrieved From www.ecotourism.org


Conflicts of Interest

There are no conflicts to declare.