ASSESSMENT OF SOCIO-ECONOMIC IMPACT OF TOURISM/ECO-TOURISM AT BARABAR AND NAGARJUNI (B AND N) HILLS IN BIHAR (INDIA)

V. Kumar* and Arvind Kumar
Indian Institute of Forest Management, Bhopal (INDIA)

Received August 02, 2009  Accepted December 05, 2009

ABSTRACT

This study is an effort to assess the tourism/ecotourism potential of Barabar and Nagarjuni hills caves site in Bihar (India) and to assess its potential socio-economic impact on the local population. All sampled stakeholders including govt. officials were interviewed by use of pre-tested questionnaire. It has been revealed that in spite of its huge potential for declaring it as a eco-tourist site, it has not been done so owing to various reasons like lack of infrastructure, lack of awareness about such a site amongst tourists from outside, lack of political will etc. but the stakeholders including govt. officials and local people have revealed for their full cooperation and participation, if the site is declared as tourist/eco-tourist site by the govt. along with fund and management back-up.

Key Words: Eco-tourism, Socio-economic growth, Barabar and Nagarjuni hills.

INTRODUCTION

B and N Hills caves are situated in Jehanabad district of Bihar, (India). According to the provisional estimate, this district is situated in between 25-0’ degree N to 25-15’ degree N latitudes and 84-31’ degree E to 85-15’ degree E longitudes. Its surrounding districts are the district of Patna in the north, Gaya in south, Nalanda in the east and Arwal district in the west. These hills are full of greeneries, small trees, bushes, creepers etc. The river Phalgu, a seasonal river, having religious importance, flows through very near to these hills. The climate of the area is of extreme nature, i.e. very hot in the summers (may touch up to 46 degree C.) and biting cold in the winters (may drop to around 4 degrees C.). The average rainfall of the district is 1074.5 mm. out of which 90 percent comes from monsoons. The hills are made up of hard granite rocks and the caves have been hewn out of those huge granite rocks. That’s the reason why those caves have survived the vagaries of nature for more than two thousand years. These hills’ caves are situated in a serene and calm environment, still untouched by nuisances of urbanization. It can be approached through roads, from three sides. From Patna, the Capital of Bihar, one can directly reach these caves sites through road (80 Kms.) or one may

* Author for correspondence
catch a train, which goes to Gaya. On the Patna – Gaya train route, one has to get down either at Bela or at Makhdumpur railway station and from there: one has to reach by road, covering a distance of around 20 kms. But these road routes have very limited number of public transport services except during ‘Sravani’ fair. A more busy and frequent public transport services to reach these caves’ sites from Gaya can be the Gaya-Manpur-Khizarsarai road route. From Khizarsarai, one can cross the Phalgu river to reach these world famous sites by covering a distance of 5 Kilometres.

History of the district of Jehanabad abounds in ancient and medieval sites, mounds and caves. The earliest of the archaeological remains in the district are to be found in the Barbar and Nagarjuni (B and N) hills. The credit for unraveling the beauty and appeal of these hills in modern times goes to the celebrated British author E.M. Foster. His book ‘A Passage to India’ contains a good description of the Barabar hills. His book has referred Barabar as “Marabar”. The movie “A Passage to India” also shows the Barabar mountain, the caves and Patal Ganga. The main characters of his novel visit this place. The B and N hills are famous for its rock cut caves, which are supposed to be the earliest examples of cave architecture in north India. Nagarjuni hill is separated by plains and lies around a kilometer north-east of Barabar hill, relatively nearer to the sacred river Phalgu. The Barabar hill houses four rock cut caves that are sited here. They are popularly known as “satgharwa” (seven chambered) as they have, in total, seven chambers. These ancient caves, hewn out of single granite rock, about 50’ long, find mention in the ancient epic “mahabharatha” as “Gorathgiri” and depicts it as rich in flora and fauna. The epic relates that Lord Krishna, Arjuna and Bhima ascended the hill to have an idea of Rajgir, around 20 Kms. east across river Phalgu, before sneaking into Magadhan capital to fight the mighty King Jarasana. These caves belong to the Mauryan period and they extol the virtues of Mauryan craftsmanship having polished interior walls with mirror like effect. The entrances of the B and N Caves bear a number of inscriptions belonging to different period, viz. the Asokan period (3rd C.B.C.) and the later Gupta period (7-8th C.A.D.). The Barabar caves are designed to look as if they are made of wood. During the reign of Asoka, four caves at Barabar hills were hewn for the ascetics of Ajivaka sects. These are known as Sudama, Vishwajhopri, Karnchaupar and Lomas Rishi. The Lomas Rishi cave is the most attractive among the four and one of the first available examples of famous Buddhist Chaitya arch style in India. It is also believed to be India’s earliest surviving religious edifice. The Sudama or Nigrodha cave (banyan tree cave, as mentioned in the Brahmi inscriptions) is the earliest in the series dating back to the 12th regal year of Asoka (260 B.C.). Equally well polished is the single celled Karna Chaupar cave or Supriya cave, which appears to be incomplete. Vishwajhopri cave is another twin chambered cave, a little distance away. The Archaeological Survey of India (ASI) has sent a proposal to the UNESCO for inclusion of Barabar Hills in the list of World Heritage Site.

The Nagarjuni Hills caves are three in number. The largest among the three is the Gopika cave, approached through a flight of steps. The other two caves namely Vapiyaka
and the Vedathika can be entered through a cleft. Dasratha, the grandson of Asoka; excavated these caves when he ascended the throne in 214 B.C. Most of these caves give an impression that the artists left them unfinished as the interiors are polished but the exteriors are plain.

Apart from these Caves, one of the highest peaks of Barabar hills houses a Shiva temple, known as Siddheshwarnath. The temple belongs to the Gupta period and it seasonally attracts around 4 lakh pilgrims. The base of the hill has a beautiful natural lake, named Anand Sarovar. Near the stone cut pathway to the caves of Barabar hills is the holy tank Patal Ganga. A natural stream of water keeps flowing throughout the year.

All these above fulfils the requisite conditions for further developing this area for the purpose of tourism/ecotourism.

Eco-tourism is defined as responsible travel to natural areas that conserve the environment and improves the well being of local people. It has a variety of socio-economic impacts on the region concerned. Tourists contribute to sales, profits, jobs, tax revenues, and income in an area. The most direct effects occur within these sectors like lodging, restaurants, transportation, amusements, and retail trade. Through secondary effects, it affects the most of the sectors of the economy. An economic impact analysis of eco-tourism activity normally focuses on changes in sales, income, employment, and creation of economic activities for the local communities/villagers resulting from tourism activity. The social impacts are the impacts felt by local community due to tourists’ inflow to the region. It may impact their life style, culture, personal growth, etc.; minimizing the negative impacts of conventional tourism. The B and N Hills caves region has a number of small hamlets which might get impacted socially as well as economically, if the region is developed as an ecotourism spot. Both Gaya tourist site is well known throughout the world mainly because the religious sentiments of followers of Buddhism is attached with it. A large number of tourists visiting Bodh Gaya are foreigners and/or is from other parts of India. But, since these tourists are unaware of these hills (B and N Hills) and also since there is no plan, having approval and budgetary support from Government of India to develop these hills, having tremendous potential of tourism/eco-tourism; the visitors mainly, the foreigners and from other parts of India, to these hills are negligible at present. But, looking at the potentials to develop this site as an tourist/eco-tourism site; this study has been conducted to assess the exact potentials of visits by the tourists from all classes and its socio-economic impact on the local people.

Objective

In view of the above, this study has been undertaken with an objective to assess the existing and potential socio-economic impact on the local people.

METHODOLOGY

Sampling and data collection

In accordance with the objectives of the study, data collection work was carried out. Primary data was collected from the respondent tourists at Mahabodhi temple of Bodh Gaya and Barabar and Nagarjun (B and N) Hills’ Caves sites and the local community, which includes shopkeepers and villagers at and around B and N Hills’ caves.
site and the Government officials. Data was collected through face-to-face interview with the help of different set of pre-tested questionnaires prepared for various stakeholders.

The secondary data was collected from different Departments of the Government of Bihar and various concerned web sites. For the purpose of study, it was collected from the Department of Environment and Forest, Department of Tourism, Directorate of Statistics and Evaluation, Bihar, Patna besides referring websites available on this subject.

The number of respondents or the sample size at various sites varied (minimum was 0.05 percent); as our population for the purpose of this study also varied. Equal numbers (2 each) of Government officials were interviewed from the Department of Environment and Forest, Department of Tourism, and the Department of Art, Culture and Youth affairs that included one official from the Directorate of Archaeology.

Purposive sampling has been used to sample the different stakeholders of the study. The tourists, domestic as well as foreigners, were interviewed at the B and N Hills’ caves site. Thus, in total, 200 tourists were interviewed for a population size (based on the average inflow of tourists as ascertained through the survey) of approximately 4,00,000.

In the third phase, the local community including the shopkeepers, villagers and other minor stakeholders e.g. religious figure, cowherd boy, etc., at and around B and N Hills’ caves site were interviewed. Thus, in total 35 persons were interviewed out of an adult population of approximately 700 people.

In the last phase, the views of Government officials from different Departments of Government of Bihar were recorded for the purpose of our study. Hence, in total, six officials were interviewed.

**Analytical tool**

Tabular and percentage analysis techniques were used to analyze the quantitative data for assessment of the potentials of tourism/eco-tourism at B and N Hills’ caves site and its socio-economic implications. The Government officials’ views have specially been taken into consideration to suggest an effective framework and management of the site for tourism/eco-tourism.

**Limitations of the study**

1. The respondents including villagers, shopkeepers and other stakeholders e.g. religious figures, etc.; do not keep any records. It is based on their assessment and recall memory.
2. The investigator of the study has limited resources in terms of time, manpower, money, etc.
3. The Government officials being in the service of the State Government have to abide by certain set of service rules. Hence, any question, put before them through the questionnaire, having political nature or the one that exposes the government; makes them evasive or unwilling to answer very closer to the truth, especially in the open ended questions.
4. Being the investigative nature of the study and very broad ‘areas’ under its coverage and due to lack of earlier experience of surveying at the site under study; hypothesis formulation was not possible. Hence the study does not confirm or deny any earlier set norms/facts.

5. On account of resource scarcity, the vegetative survey of the area could not be undertaken in order to find out the bio-diversity status of the area and its growth potential\(^7,8\).

**Assumption**

Respondents who earned/spend the money in person, believe in the process of tourism/eco-tourism business development and the information provided by them is true to the best of their knowledge.

**RESULTS AND DISCUSSION**

Results/findings have been enumerated through tabular analysis technique, tourists’ expenses pattern. First of all average expense per visit (in rupees) per person (tourist) at B and N Hills’ caves have been calculated and presented in Table 1 as given below:

**Table 1 : A comparative scenario of average expense per visit per tourist at B and N Hills (in Rupees)**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Items of Expenses</th>
<th>Indian tourists at B and N Hills</th>
<th>Foreigners at B and N Hills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Local</td>
<td>From other places</td>
</tr>
<tr>
<td>1</td>
<td>Travelling</td>
<td>7</td>
<td>170</td>
</tr>
<tr>
<td>2</td>
<td>Food</td>
<td>20</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Lodging</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Fees</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Misc.</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>311</strong></td>
</tr>
</tbody>
</table>

* Tourists from within the radius of 5 km.

In case of B and N Hills’ caves site; it is very much evident from the table that the average spending per visit by a foreigner is the maximum (Rs.1300). It is approximately 50 times the expenditure incurred by a local visitor and four times in case of visitors from other places. Yet their number is merely 3(1.5%) of the total number of visitors (200) during the same period of the year. The average expenditure of a tourist from other places, within the country, is approximately 10 times (Rs.311) the average expenditure made by a local tourist per visit (Rs.30) but much lower when compared to that of a foreigner’s spending (Table 1).

Food was another expensive item for all the tourists, but it was the most expensive and constituted more than 60 percent of the total expenditure incurred by the local tourists. Lodging expenses was nil for all the tourists at B and N Hills Caves site. It was because of non-availability of lodging
facility at this site and the tourists (e.g. foreigners, from other places) requiring this facility stayed mainly at Bodh Gaya. Again, there was total absence of any kind of fees at B and N Hills Caves site for all the tourists. Even a token amount levied by the government as entry fee could have generated huge revenue, as the annual average inflow of local tourists was in lakhs, which could have been used for the maintenance and upkeep of the site (Table 1).

**Constraints in developing b and n hills as tourist/eco-tourist site**

Assessment of the limitations in developing the B and N Hills sites as an tourism/ecotourism site as perceived by stakeholders has been depicted in Table 2.

**Table 2 : Assessment of the limitations in developing the B and N Hills site as an eco-tourism site as perceived by its various stakeholders**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Stakeholders Reasons</th>
<th>Government Officials</th>
<th>Local community</th>
<th>Tourists At B and N Hills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of infrastructure</td>
<td>4(66)</td>
<td>21(60)</td>
<td>135(67.5)</td>
</tr>
<tr>
<td>2</td>
<td>Lack of Peoples’ participation</td>
<td>4(66)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>3</td>
<td>Lack of Government’s Wills</td>
<td>0(0)</td>
<td>5(14.3)</td>
<td>0(0)</td>
</tr>
<tr>
<td>4</td>
<td>Law and order problem</td>
<td>0(0)</td>
<td>8(22.9)</td>
<td>0(0)</td>
</tr>
<tr>
<td>5</td>
<td>Others</td>
<td>0(0)</td>
<td>1(2.9)</td>
<td>0(0)</td>
</tr>
</tbody>
</table>

**Note**: Figures in parentheses shows the percentage.

It was evident from the survey that around two thirds of the total respondents amongst all the stakeholders accept the lack of infrastructure as an important bottleneck. However, out of six Government officials interviewed from different departments of Government of Bihar, four (.66%) of them also consider the lack of mechanism of peoples’ participation as a major hindrance. The local community also felt that there was lack of Government initiative as out of 35 respondents, 5(14.3%) of them sited lack of government’s will and 8(22.9%) of them as law and order problem at and around B and N Hills at hindrances in the development of site as a major tourist/eco-tourist site. Thus, in total, 13(37%) of the respondents amongst local community exposed the lack-luster approach on the part of government to develop it as a ‘primary’ tourism/eco-tourism site.

The number of local visitors was dominant (85%) at B and N Hills: hence, the flow of economy was limited as these local visitors hardly spend anything in comparison to other visitors who had to spend for everything they needed.

**Financial gains to the local community and their willingness to develop b and n hills**

The pattern of financial benefits accruing to local community due to existing tourism activities and that of their willingness to develop the site, the tourism/ecotourism for financial gains have been studied and presented in Table 3.
Table 3: Pattern of economic (financial) benefits accruing to local community due to existing tourism activities and that of their willingness to develop the site for tourism/eco-tourism for economic (financial) gains.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Pattern</th>
<th>Yes</th>
<th>No</th>
<th>Levels of earnings</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt; Rs.100/day</td>
<td>&lt; Rs.200/day</td>
<td>&lt; Rs.400/day</td>
<td>&gt; Rs.400/day</td>
</tr>
<tr>
<td>1</td>
<td>No. of people who get benefitted</td>
<td>12 (34.3)</td>
<td>23 (65.7)</td>
<td>35 (100)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Number of earning persons in different income categories</td>
<td>5 (14.3)</td>
<td>4 (11.4)</td>
<td>2 (5.7)</td>
<td>12 (34.3)</td>
</tr>
<tr>
<td>3</td>
<td>Number of persons willingness to manage</td>
<td>35 (100)</td>
<td>0 (0)</td>
<td>35 (100)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>No. of people involved in the management of site</td>
<td>0 (0)</td>
<td>35 (100)</td>
<td>35 (100)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Number of people willing to take loans to put up/renovate shops</td>
<td>35 (100)</td>
<td>0 (0)</td>
<td>35 (100)</td>
<td></td>
</tr>
</tbody>
</table>

From the Table 3, it is evident that the number of people who got benefited from the ongoing tourism activities at the site is 12 (34.3%) of the total 35 respondents. Out of 12 respondents who got benefitted; five of them earned less than Rs.100 per day, four of them earned less than Rs.200 per day, two of them earned less than Rs.400 per day and one earned more than Rs.400 per day. All of them were willing to participate in the management of the site where as none of them were presently involved in managing the affairs at the site. All of them were also willing to take up loans to put up or renovate their shops.

Apart from this, nine of the respondents in their replies, in response to open-ended questions on the issue suggested to document the rich history and cultural heritage of the site in various forms of media to attract tourism.

Summary of the views of government officials

In total, six Government Officials from different departments of the Government of Bihar were interviewed. All were aware of the concept of tourism/eco-tourism. According to them, the Government of Bihar had an tourism/eco-tourism policy for which Department of Tourism was the nodal Department. In talks with the officials, it was found that the budgetary allocation for eco-tourism was done on the basis of Detailed Project Report (DPR) of any
suitable site for the same. Five out of six officials agreed that the Government had plans to develop tourism/eco-tourism sites in the state. Latest such plan was near Balmikinagar Tiger Reserve and the work for the same was under progress.

Four of them i.e. 66% of them were also aware about the Government’s plan to develop B and N Hills site as ‘destination tourism’. In fact, officials of the Department of Tourism (DoT) told that a DPR of a sum of approximately Rs.4.5 crore has been prepared for the same and allocation of funds for the same was under process.

All the officials interviewed also agreed that the ancient caves of Barabar and Nagarjuni (B and N) Hills would be developed as an important tourist/eco-tourist site in Bihar. But none of them were aware of any earlier attempt of the Government of Bihar to develop it as an tourism/eco-tourism spot. Again, all the officials interviewed agreed that the Public-Government NGO participation could be encouraged to develop these sites as a true tourism/eco-tourism site; which could solve, at least, some of the socio-economic problem of the people residing in the villages around these B and N Hills caves. All the officials denied that there was any generation of revenue for the government from on going tourism activities around this site; and, at the same time they were also unaware of any budgetary allocation for development of these sites in the last 5 years or so.

All the officials also agreed that the nearness of these sites to the world famous Maha-Bodhi temple at Bodh Gaya could be exploited to benefit these cave sites for the inflow of tourists and a bridge to be constructed over near-by river Phalgu connecting Rajgir, another important site of Buddhist circuit, could open floodgates as far as development of B and N Hills and inflow of tourists at these cave sites was concerned. The road distance between these two tourist sites would be reduced drastically because of this bridge. Two-third of the officials interviewed also agreed that the development of these sites as tourism/eco-tourism site would reduce the problem of extremism prevailing in these areas. As these caves’ fall under Jehanabad district of Bihar, this was affected by extremism.

**CONCLUSION**

The results revealed that the site under study was mainly frequented by local tourists (85 percent). Although tourists from other places of the country and some foreigners did visit the site for various reasons. Hence, the economic activities were severely restricted at the site. Different stakeholders had attributed this restriction in the economic activities at the site under study to many reasons. The most common or the generally accepted (by 2/3rd of the respondents) reason had been the lack of infrastructure. The other reasons cited for the same are law and order problem, lack of government’s willingness to develop the site and other minor reasons.

The result also revealed that the local people were very enthusiastic at the prospect of developing this site as an tourism/eco-tourism spot. They were more than willing to participate with the government and other stakeholders to develop this site as an tourism/eco-tourism spot. Although, the number of people amongst local community getting benefitted from the already existing tourism activities were approximately one-third of the total respondents, but the number
of people willing to participate in the management of affairs of the site and to take-up loans to put-up/renovate their shops were cent-percent.

The study also revealed that harnessing the eco-tourism potentials of the site could have far reaching socio-economic impacts on the local population residing around the site. The local community was willing to integrate their economic activities with the tourism/eco-tourism activities, if the existing potentials for the same were developed around the site. It was obvious that this could definitely benefit them and that was the reason why they readily said ‘yes’ to this given opportunity of participation in the tourism/eco-tourism activity. The infrastructure needed to develop the site could also benefit them in more than one way. This could increase the educational standards and standards of living as well; without any adverse impact on their socio-cultural life as the tourists of both the sites overwhelmingly revealed (during discussion with them at the time of interview) their willingness not to interfere with the privacy of the local people and to respect local culture and tradition. Some of them also expressed their willingness to take help of local guide to limit any adverse ecological/cultural impacts arising out of their tourism/eco-tourism activities. The government officials too were beholding the views that any such move would benefit the people socially and economically. A majority of them were hopeful that it might help in mitigating the local socio-economic problem of extremism. Further, during talks with the officials and from their interviews; it was revealed that the government collected nil revenue from the ongoing tourism activities at the site. It was also revealed that the government was planning to develop the site as ‘destination tourism’ with an investment of approximately Rs.4.5 crore and rudimentary infrastructure for the same already existed. These facts pointed towards the lack of will on the part of the government to develop it as an tourism/eco-tourism or conventional tourism site. But all the officials agreed to tap its tourism/eco-tourism potential.

Suggestions

The following steps can be taken by the Government, taking into confidence the stakeholders, to promote tourism/eco-tourism at the site:

1. To improve the inter-departmental coordination and strengthening the infrastructure at and around the site. It should be well connected by road with the near-by famous tourist places- Rajgir and Bodh Gaya. A bridge over river Phalgu can be constructed to facilitate easy movement of tourists between Rajgir and B and N Hills. It will reduce the time of journey and expenses. It would also provide an alternate route for tourists travelling between Bodh Gaya and B and N Hills.

2. To improve awareness amongst different stakeholders about different aspects of the site. Its religious and historical importance could be highlighted through appropriate forms of media anticipating its World Heritage Site status.

REFERENCES


4. Feifei Xu and Geoffery, Eco-tourism In Yancheng Wetland, China; Wall, Centre for Tourism Research and Development, 32(1), (2007)


SAVE EARTH. WE HAVE NO WHERE ELSE TO GO!