

PROMOTING WILDLIFE TOURISM ON GEOTOURISM LANDSCAPE: A STUDY IN MANAS AND KAZIRANGA NATIONAL PARKS OF ASSAM, INDIA

Premangshu CHAKRABARTY*

Visva-Bharati University, Faculty of Geography, Department of Geography,
Santiniketan, Bolpur, West Bengal, India, e-mail: drpremanshuindia@gmail.com

Subrata PAN

Bankura Christian College, Faculty of Geography, Department of Geography,
Bankura, West Bengal, India, e-mail: pansubrata@gmail.com

Rahul MANDAL

Visva-Bharati University, Department of Geography,
Santiniketan, Bolpur, West Bengal, India, e-mail: rahulskbu1992@gmail.com

Citation: Chakrabarty, P., Pan, S., & Mandal, R. (2019). PROMOTING WILDLIFE TOURISM ON GEOTOURISM LANDSCAPE: A STUDY IN MANAS AND KAZIRANGA NATIONAL PARKS OF ASSAM, INDIA. *GeoJournal of Tourism and Geosites*, 24(1), 189–200. <https://doi.org/10.30892/gtg.24115-352>

Abstract: National Parks worldwide are natural heritages visited by millions of tourists with varying length of stay depending on the level of uniqueness in terms of scientific, historical, aesthetic, economic, recreational or educational values. Manas and Kaziranga are two ecotourism destinations of India located in the state of Assam, widely acknowledged for their universal values by UNESCO as world heritage sites. This paper is an attempt to make a comparison between the status of tourism in these two protected areas from the stand point of visitor satisfaction and overall sustainability aspects. A symbiosis between geotourism and wildlife tourism is the central goal. The study evaluates the exemplarity of the landforms with a focus on the paradigm shift in tourism planning and management of national parks.

Keywords: Heritage, geotourism, ecotourism, satisfaction, sustainability

* * * * *

INTRODUCTION

Promoting tourism in Protected Areas (PAs) is a key global strategy to draw public funding in natural heritage management. From theoretical standpoint, the nature comprises both abiotic and biotic elements and when taken together, a holistic approach on conservation arises from such linkage (Grey, 2004). The holistic appreciation of a PA is only possible when geology as the abiotic component could be combined with the biotic i.e. fauna and flora elements in marketing of natural heritages. When a PA is attractive for

* Corresponding author

its natural heritages, it can provide income and livelihood opportunities (Hussain et al., 2010). The National Park (NP) branding of such PAs not only boost the economy of its buffer zone but also involve the local community to protect and conserve unique ecology, so that it could be experienced and enjoyed by future generation as well (Stemberk et al., 2018). Being considered to be one of the basic institutions of great socio-economic impact, the National Parks promote recreation blended with environmental education for millions of visitors belonging to different age groups since responsible tourism fits the scope of its activity (Szczęsna & Wojtanowicz, 2014). It is a journey towards sustainable development with an equitable share of the local community in the economic opportunities that arises from convergence of wildlife tourism and geotourism in spatial context. Sustainable spatial development achieved from utilization of geosites usually represents strong regional identities (Lazzari & Aloia, 2014). A geopark is a natural park of such geosites (terrestrial, aquatic and/or underground) in which plant and animal species may generate a significant value for tourism (Kubalíková & Kirchner, 2015).

In many countries, geoheritages have been put into the service of geotourism with the establishment of geoparks and nature parks (Yıldırım & Koçan, 2008). In many circumstances, the other natural resources like wildlife is the primary attraction for drawing the tourists and geotourism is developing simultaneously as educative tourism. One who travel a national park for wildlife watching become a geotourist while appreciating the geosites of the National Parks.

Under an ideal circumstance, tourism and associated infrastructure operate within natural capacities for regeneration and future productivity of natural resources (Eber, 1992). If the equilibrium is not maintained by allowing somewhat selective forms of tourism, a tourist-park conflict may arise, which would be an additional burden for park management, already busy in resolving the people-park conflict. Recognition like World Heritage Site status from UNESCO, as in case of Manas and Kaziranga NP of Assam (Figure 1), draws millions of tourists every year with varying length of stay.

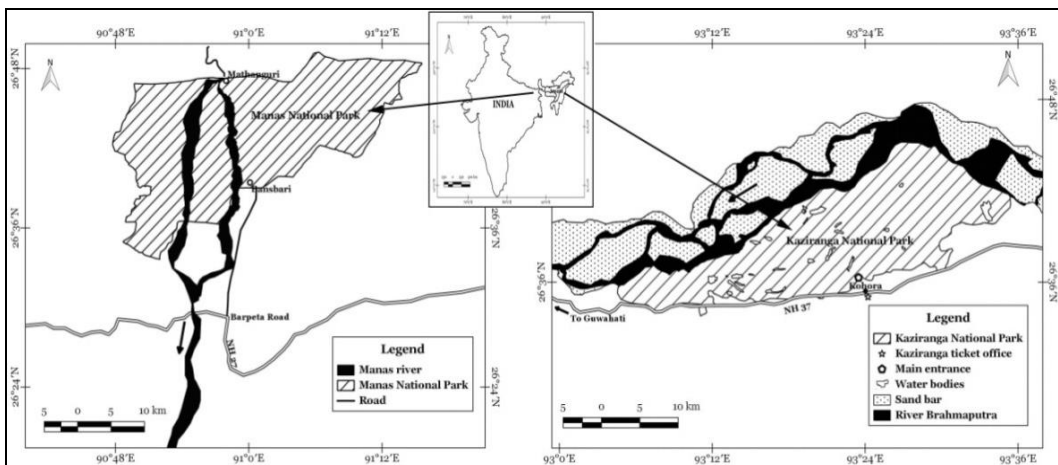


Figure 1. Location map of the study area

Both the NPs have been studied from various angles as revealed from available literature reviews but a research gap remains on relative assessment of their performances in promoting sustainable tourism. The followings are the objectives of the present study:

1. To compare the overall tourism scenario of Manas and Kaziranga National Park.

2. To assess visitor satisfaction status of Manas and Kaziranga National Park based on different motivational values assigned by the tourists.

3. To identify immediate necessities for Manas and Kaziranga from natural heritage management perspective.

National Parks are known more for ecotourism rather than geotourism. It is because the term ecotourism, which is popularly defined as a visit to natural areas for experiencing the elements of natural and ecological resources, is more appealing to the globalized tourism market. Geotourism is unseparable from ecotourism in real sense for the geological diversities that have profound impacts on ecological resources. Use of geosites for ecotourism (Table 1) reveals the scope of research on interconnectivities between ecotourism and geotourism. Generally, tourists visit the national parks to feel the calmness, wilderness of nature and to watch different kind of birds and wild animals.

Table 1. Geosites of Manas and Kaziranga National Parks serving wildlife tourism
(Data source: Field assessment of geosites in terms of their attractiveness and spatial distribution, 2018)

Geosites	Spatiality and integrity aspects
Majestic riverine sites	The Brahmaputra river flowing along the northern boundary of Kaziranga National park exhibits braided drainage pattern with numerous river islands, providing shelter to birds and wildlife; thereby recognized as ecotourism paradise (Figure 2). Mathanguri is a hillock on the bank of river Manas, a vantage point for wildlife watching particularly in evening and morning when the animals come to the river for drinking water. This river serves as the boundary between India and Bhutan. The animals from Royal Manas National park of Bhutan and Manas National Park of India travel to this place from opposite sides (Figure 3).
Wetlands	Swampy and marshy tracts of Kaziranga are favourite habitat of the Great Indian One-Horned Rhino and wild buffalo. Relicts of older channels have been evolved as shallow oxbow lakes, locally known as 'beels'. There are at least nine such beels of 50-150 ha within the boundary of the Kaziranga National Park (Figure 4). The wetlands of Manas are also the habitat of a great variety of fauna, for which it has been recognized as wetland of international importance (Scott, 1989).
Wet Alluvial grassland	Grasslands cover almost two thirds of the Kaziranga National Park characterized with the species called <i>tall elephant grasses</i> on the relatively higher elevations and short grasses on the lower grounds. These grasslands are also found on the sandy riverine tract of the mighty Brahmaputra, serving as niche of a variety of wild life. In case of Manas, about half of its total geographical area enjoys the cover of such flat and well-drained alluvial grasslands (Champion and Seth, 1968), considered as the safe heaven for wildlife (Figure 5).
Himalayan foothills	Karbi Anglong hills are located in the southern boundary of Kaziranga National Park, which is the source of a number of Many small streams. It is also shelter place for the migrant animals when annual flooding takes place. The deposits of Manas river including enormous quantities of boulders, stones, sand, silt and other debris that are carried down contributing to unique geotourism landscapes amidst of surrounding hills as a nature tourism paradise (Figure 6).

National parks give an opportunity to the visitors to relax their body, refresh their mind and enjoy the virginity of nature ensuring biodiversity. On one hand, national parks worldwide protect and conserve the valuable and endangered natural resources, while on the other they make a great contribution to the local and national economy by developing tourism within their territorial limits and work towards the benefits of local community (Kafle, 2014). Eco-Development (ED) model was originally advanced by UNEP involving participatory management of resources in NPs and became very much successful in Indian National Parks like Kanha in the context of ecotourism management (Chakrabarty, 2012).



Figure 2. Island as geosite supporting wildlife



Figure 3. Wildlife watching point, a geotourism landscape of Manas National Park



Figure 4. Wetland of Kaziranga supporting the Great Indian One-Horned Rhino



Figure 5. Water Buffalo amidst of wet alluvial grassland



Figure 6. Himalayan foothills on which Mathanguri rest house is situated

IUCN (International Union for Conservation of Nature and Natural Resources) has categorized “National Park” as its Category II type of protected area. Geosites of such areas constitute the abiotic environment to support the organisms, which are the essential elements of ecotourism.

MATERIALS AND METHODS

The purpose of this study is to compare how ecotourism advances hand in hand with geotourism in such PAs, designated as World Heritage Sites. For evaluation purpose, the abundance of geosites is combined with the richness of wildlife in order to realize the expectations and potentialities of natural parks that are situated within the terrestrial limits of national parks. Identification, characterization and assessment of the geosites are followed by their description in terms of attractiveness and spatial distribution. Primary data collected during the field survey from community and visitors have been analysed applying a number of quantitative techniques.

The respondents (80% Indian and 20% Foreign) interviewed during their stay at Manas and Kaziranga constitute the base of ethnographic discussions. Questionnaire surveys have also been conducted during the study camping at both of the National Parks on several occasions. In order to analyse the attitudes of visitors on various attributes, a multi-attribute approach (Chaudhary, 2000) on valuation is adopted for the present study. The scientific and educational aspects, aesthetic and recreational aspects, ecological and geotourism aspects have been subsequently taken into consideration with an assessment of the marketing value in respect of blending ecotourism and geotourism opportunities.

Following the procedure of Importance-Performance Analysis (Johann, 2014), the tourists responses have been obtained in Likert-scale. A five point scale ranging from 1 (strongly disagree) to 5 (strongly agree) has been utilized. The mean value of the tourists' response has been used for Manas and Kaziranga to conduct pairwise t-test for the purpose of comparison. This test is applied to determine attribute wise significance of differences (Maghsoodi Tilaki, 2017) in order to interpret the keys responsible for varying status of two neighbouring NPs. Further, a Visitor Satisfaction Index (VSI) has been attempted for comparing of the overall tourism status of Manas and Kaziranga National Parks before making the planning recommendations. The SPSS software is used for statistical analysis, while QGIS software has been used for digital cartography.

RESULTS AND DISCUSSIONS

Geotourism can occur in a range of environment from natural to constructed and planned aiming to preserve both abiotic and biotic environment (Dowling & Ólafsdóttir, 2013). Besides contributing to biodiversity conservation, there are various functions like scientific, educational, recreational, cultural etc that require an integrated approach for a sustainable future (Pletsch et al., 2014). In India, there are 37 sites obtained the status of UNESCO World Heritage Sites (WHSS) for Outstanding Universal Value (OUV) among which seven are National Parks (UNESCO-WHC, 2019).

They are Kaziranga National Park (Assam), Manas National Park (Assam), Keoladeo National Park (Rajasthan), Sundarbans National Park (West Bengal), Nanda Devi and Valley of Flowers National Park (Uttarakhand), Great Himalayan National Park (Himachal Pradesh), Khangchendzonga National Park (Sikkim).

Among these National Parks, Manas and Kaziranga are situated almost in same latitude at a distance about 300 km by road in the same state but in terms of the promotion of sustainable tourism, the status of these two neighbouring NPs is different. Because of latitudinal location of the parks, they enjoy subtropical monsoon climate.

Though the average rainfall recorded in Manas is more than that of Kaziranga, Kaziranga is much more affected by seasonal flood. The area under water bodies is about 7% in Kaziranga while in case of Manas, it is less than 1%.

Located at the foothills of Bhutan Himalaya, the Manas National park (26° 35' N - 26° 50' N and 90° 45' E- 91° 15' E) is an important conservation region constituted by the old alluvium locally called Bhabhar and flood plain ecosystem (Sarma et al., 2008). Located in the Bodo tribe dominated Baksa and Chirang districts of Assam, this is a natural heritage site consisting of three ranges namely - the Western Range with its headquarters at Panbari, the Central Range with Bansbari as its headquarters near Barpeta Road, and the Eastern Range with Bhuyapara near Pathsala as its headquarters (Baro & Borthakur, 2017). Manas is the river from whom the name of NP is derived, which is a tributary of mighty Brahmaputra originated in Tibet. It is flowing along the northern boundary of Kaziranga National Park (26° 35' N -26° 45' N and 93° 05' E to 93° 40' E), which is administratively situated in Golaghat and Nagaon districts of Assam. Being another NP of the state declared as world heritage site, Kaziranga is divided into four ranges, namely, the Western Range (Baguri), the Central Range (Kohora), the Eastern Range (Agaratoli) and the Burapahar Range at Ghorakati (Barua and Sharma, 1999). It was in the year 1985, both Manas and Kaziranga had been designated as a world heritage sites by UNESCO covering 519 sq. km and 430sq.km areas respectively.

Both of the parks are however situated on the floodplains and accommodate a wide variety of rare and endangered species offering the scope of geotourism and wildlife tourism marketing together. Rhino is the keystone species in case of Kaziranga while the wild water buffalo is the attraction of Manas followed by the one-horned Indian rhino, golden langur and a wide variety of birds. Anthropogenic pressure, especially from activities of buffer zone population is a serious threat for the protection of both the natural heritage sites. In this context, tourism has evolved as a weapon to provide alternative livelihood for indigeneous communities who were engaged in illegal livestock grazing, fodder and fuel wood collection, tree-felling and hunting activities. Strategically, communities living within or near forest have to be treated as one of the essential components for conservation (Schwartzman et al., 2000). This approach was discovered very much successful in case of Manas National Park, where world heritage site status was likely to be withdrawn because of severe lapses in protected area management during the dark period of ethno-political disturbance that persisted about two decades back, when the population of Indian Rhinoceros was almost poached out (Lahkar et al., 2018).

However, with successful community involvement, the vulnerability has been addressed and there is subsequent increase of the arrival of tourists while Kaziranga is recipient of a steady flow of visitors since the 1970s and apparently occupy a better status in tourism market in comparison with Manas National Park. Visitors' feedbacks are very important for future planning on experimentation with a combined ecotourism – geotourism package. Such feedbacks provide an opportunity to analyze the expectations and satisfaction level of the visitors (Okello & Yerian, 2009). In view of increasing pressure to become self-sufficient due to restrictions on government funding usually arising from economic crisis and recession, utilization of aesthetic and recreational values of the National Parks for responsible tourism may be a sustainable option (Castley, 2012). Tourism in National Parks not only promotes protection and conservation of biodiversity but also provides alternative sustainable livelihoods for local people (Rugendyke & Son, 2005). To investigate further, visitors' responses in Manas and Kaziranga have been quantified using five point Likert scale and analyzed accordingly on value centric comparison of these two NPs as follows:

Scientific and Educational value

Appreciation and learning of a landscape is one of the motivational aspects of geotourists (Allan et al., 2015). The national parks are assessed based on the geoheritage resources which have scientific values and make people understand the geologic process and the evolution of earth (Singtuen & Won-in, 2018). The scientific and educational value of a national park could be measured through enumerating its uniqueness in terms of both geologic and ecological diversities. While comparing the overall scientific and educational value, it is found that Manas and Kaziranga National Parks are in neck to neck situation. It is admissible that in case of literature availability and quality of guiding, tourists have given more credit to the administration of Kaziranga National Park in management context. In respect of quality of guiding, the score obtained is somewhat less for Manas (average 2.72) in comparison with Kaziranga National Park (average 2.79). In spite of such, the geotourism conducive environment of Manas has raised its overall score more than Kaziranga, which is perceived as much more organized for years.

Aesthetic and Recreational value

To judge the aesthetic and recreational values, various indicators have been taken into account such as quality of landscaping, facilities offered to the tourists like elephant riding, jeep safari, restricted trekking, eco-friendly accommodation etc. Recreational assessment of the landscapes has been carried out worldwide on the basis of the developed system of criteria and their properties (Mazhitova et al., 2018). As the quality of utilization of geotourism resources in both of the parks are very poor in comparison to popular NPs worldwide, the respondents gave low score (below average 3) from their awareness level. Elephant riding is prime attraction of Kaziranga and visitors gave it high satisfaction score (average 4.54). Jeep safari in both of the parks is another popular activity, which is opted by the visitors. From the standpoint of virginity and natural beauty, Manas National Park is identified as better than Kaziranga by respondents visiting both of the parks. Natural beauty of Mathanguri forest bungalow at India-Bhutan border on the bank of river Manas is very charming. In the morning and evening, it is a site for animal watching as many wild animals gather to quench their thirst. Regarding the opportunity of water point view, Kaziranga achieved a good score (average 4.14) on account of its hydro-geomorphological conditions. But because of the ecotourism merit of Mathanguri, Manas achieved a better score (average 4.4) in this context from recreational angle. While enumerating the average cumulative score of all the value indicators of aesthetic and recreational sector, the position of Manas is found somewhat better from the score obtained (3.70) than that of Kaziranga (3.33).

Ecological and Geotourism value

Ecological value of a NP depends on its biodiversity value (Reynard et al., 2007). Both the Manas and Kaziranga are given credit by UNESCO for in-situ conservation of biological diversity and designated as world renowned ecotourism destinations. Manas National Park has two major biomes: grassland and forest may be further classified into wet alluvial grassland, moist deciduous and semi-evergreen forests (Champion & Seth, 1968). The grasslands that cover almost half of the park are Terai and Bhabar type accommodating wildlife which draws visitors from various parts of the country and abroad (Choudhury, 2016). The landscapes of geotourism being added with wildlife value generate immense attractions towards both of the parks that have been acknowledged with recognition as World Heritage Sites. Geotourism has already been documented as one of the important strategies to support biodiversity conservation (Hakim & Soemarno, 2017). For planning effective wildlife conservation strategies, reliable data on the spatial distribution of species within a region is crucial (Tobler et al., 2008).

Manas National Park has 60 mammal species of which 22 are considered threatened (including the endangered Asian Elephants) along with 42 reptile species, 7 amphibians, 372 species of birds, 54 species of fish and over 100 species of insects (District Statistical Hand Book, Baksa, 2010). Being the Eastern Himalaya Biodiversity Hotspot, Manas also sustains a large tiger population along with others carnivores (Goswami & Ganesh, 2011). Declared as a Tiger Reserve, Manas is the home of diverse carnivores, particularly because of its unique regional ecological settings (Borah et al., 2012). It is found that respondents gave high score to Manas for rare and endangered species availability (average 4.54) and on account of its protection status (average 4.07).

Kaziranga National Park is also well endowed with a variety of flora and fauna drawing ecotourists. It is a region of tall elephant grass, marshland, and dense tropical moist broadleaf forests. The park is known for the highest density of tigers among protected areas in the world. It is the home of the world's largest population of the Greater One-Horned Rhinoceros, Water Wild Buffalo, Eastern Swamp deer, Asiatic Elephants and Sambar (Sharma, 2018). These five animals are collectively known as 'Big Five' of Kaziranga. In spite of such species diversity, the score of Kaziranga on rare and endangered species availability (average 3.79) is low followed by the score of protection status (average 3.3). Overflow consequences of the river Brahmaputra may be one of the reasons behind less valuation by the visitors on Kaziranga. Every year, during the monsoon period, flood occurs and inundates almost half area of the NP affecting a large number of wildlife. Climate-induced hydrological hazard of Kaziranga killing a large number of animals every year is the challenge to the capability of PA management to maintain its ecotourism value over time. At the beginning of monsoon, the animals use to migrate from low lying areas to the high altitude areas of Karbi Anglong hills. When animal passing the populated villages and across the highway, they are often subjected to poaching or road accidents (Bonai & Chowdhury, 2004).

Marketing value

The economy is very much related to the potential use of the protected area especially for the purpose of ecotourism. In Manas National Park, some ecotourism societies have been organized by the local people with the help of a few NGO. They made various types of local food, handicraft and also performed their traditional dance and music to entertain the visitors accommodated at the buffer zone. In case of souvenir production, Kaziranga is scoring far better than Manas. In Kaziranga, local artisans known for their masterwork in carving wood are making models of popular animals like one-horned rhinoceros, crane, tiger, elephant, deer etc very much appreciated by the visitors (Gurung & Goswami, 2015). There is still no such provision at the entry points in case of Manas because wildlife tourism in the park is still in the juvenile phase. From the stand point of economics of facilities and amenities, particularly accommodation and transport availabilities, the score of Kaziranga is far better than Manas. Cumulating the values obtained on different heads (Table 2), a comparison is attempted between Manas and Kaziranga where both geotourism and ecotourism could be advanced together assuring the issues concerning sustainabilities.

Table 2. Comparison of score achieved by Manas and Kaziranga from tourists' response
(Data source: Field data obtained from ethnographic surveys, 2018)

Valuation from Respondents	Manas	Kaziranga
1. Scientific and Educational value	3.34	3.27
2. Aesthetic and Recreational value	3.70	3.33
3. Ecological and Geotourism value	4.31	3.55
4. Marketing value of Ecotourism - Geotourism combination	3.21	3.54

A paired t-test has been attempted to examine whether there is statistically significant difference between the score achieved by Manas and Kaziranga from tourists' response. Four pairs have been formed (Table 3) and positive correlations between them have been derived. A very high value on ecological and geotourism context is representative of significance difference arising from quality of resources available for visitors' satisfaction. It is evident that from the standpoint of scientific and educational context, the performance of both the park are more or less similar, while Manas is far better in aesthetic and recreational aspects. The weakness of Manas lies in tourism marketing as revealed from the negative t value showing significant difference from Kaziranga, which is marketing wildlife tourism successfully in the background of its geotourism landscape.

Table 3: Paired t-test on values obtained by Manas and Kaziranga
(Data source: Calculated by authors using SPSS 15.0)

Pairs	Paired Differences						
	Mean	Std. Deviation	t value	Confidence Interval (Alpha .05)		df	Sig. (2-tailed)
				Lower	Upper		
1. Scientific and Educational value for Manas - Scientific and Educational value for Kaziranga	.06452	.52375	1.534	-.01859	.14762	154	.127
2. Aesthetic and Recreational value for Manas - Aesthetic and Recreational for value Kaziranga	.36903	.41974	10.946	.30243	.43563	154	.000
3. Ecological and Geotourism value for Manas - Ecological and Geotourism value for Kaziranga	.75484	.52337	17.956	.67179	.83789	154	.000
4. Marketing value for Manas - Marketing value for Kaziranga	-.33118	.35329	-11.671	-.38724	-.27512	154	.000

Visitor satisfaction is one of the most crucial issues of any tourist place. This is why Tourist satisfaction has been one of the key areas of tourism research for more than four decades (Shavanddasht et al., 2017). Satisfaction level of a visitor in any tourist place depends on expectation level of the individual in view of supply against demand, thereby plays significant role in marketing tourism products and services (Egresi & Polta, 2016). Satisfaction depends on one's own value judgment and feeling. Visitor satisfaction Index (VSI) is attempted to compare the satisfaction level of the visitors in Manas and Kaziranga applying the following formula:

$$VSI = \frac{\sum_{i=1}^n VI}{n}$$

Where,

VI = Valuation Index (Actual Value – Min. Value/Max. Value – Min. Value)

n = Number of value dimension

Table 4. VSI values

NPs	VSI
Manas	0.64
Kaziranga	0.60

The result of VSI has shown in the table 4. VSI shows encouraging result for both of the National Parks, which is relatively higher in case of Manas National Park, where

tourism is not fully developed yet. Under such circumstance, Kaziranga should be much more aware on satisfying the visitors in view of a healthy competition with Manas in near future. Further a scheme for sustainable planning should address the following issues:

a) Enumeration of the carrying capacities to determine the threshold limit of daily visitors' entry in peak season with special emphasis on protection of bio-geologically diverse areas to promote bio-geodiversity tours.

b) Community involvement for defending wildlife from poachers and valuable trees from loggers.

c) Human resource development for managing PAs involving the community to look after the activities of visitors from conservation standpoint.

d) Raising geoconservational awareness of visitors mandatorily before entering the park with the application of multi-media devices at the entry points of both the parks.

e) Ensuring maximum benefits from tourist accommodation by promoting the local players in order to prevent leakages because dominance of entrepreneurs from outside means profit from business will not percolate in the host economy.

The success in pro-poor geotourism depends on quality of biodiversity and integrity of the environment (Hakim & Soemarno, 2017). Nature heritage sites like Manas and Kaziranga can contribute to poverty reduction by involving the community in various tourism oriented services ranging from guiding to making of tourist souvenirs. Tourism has a number of functional mechanisms for improving the livelihoods of local people in destinations (Monterrubio & Espinosa, 2013). Local handicrafts created by the community are collected as souvenirs by the visitors as symbol of their travel experience (Litirell et al., 1994). The accommodation industry of both of the parks could be encouraged to promote the local handicrafts for sale in their premises with provision of the scope of interacting with the artisans who demonstrate their skills in the presence of the visitors. Ethnic groups like Bodo, Garo, Rabha have their indigenous craft making skills, which may be promoted as future heritage tourism resource especially for Manas, where souvenir industry is not developed yet in comparison with Kaziranga. The aim of sustainable tourism planning for both of the parks is to prevent the outside operators from reaping most of the profits from tourist arrival and divert the earnings for the benefit of local communities.

CONCLUSIONS

Sustainability is the central goal for which careful planning and management is necessary. Community participation in this context is fundamental in protecting the rarity, integrity and representativeness of both ecological and geological tourism resources. Manas and Kaziranga may provide a variety of services so that recreation and knowledge seeking visitors together can enjoy the flavour of geotourism while travelling in the area for wildlife appreciation. Both of the National Parks have been designated as heavenly places by the visitors from geotourism perspective during the process of their value assignments, based on which the comparison between the parks has been made.

Though Kaziranga is more advertised and easily accessible, the study reveals that ecotourism potential in Manas is much more because of the support of its geotourism resources. Proper promotional measure including dissemination of information on its Outstanding Universal Values (OUVs) in tourism market is very much essential to utilize such opportunities. It is to be noted that at present tourism infrastructure of Manas is at juvenile stage, while Kaziranga in this context has already reached the stage of maturity.

In spite of availability of better infrastructure in Kaziranga, the performance score of Manas is slightly better. Implementation of a community oriented responsible tourism planning for this National Park may be a strategic initiative to address

poaching and habitat destruction in future. This is vital since the park is situated at a dormant seat of ethno-political conflict, which may arise again. It is noteworthy to mention that World Heritage Site designation was threatened due to untoward happenings in Manas between the late 1980s and the late 1990s. Promotion of sustainable tourism convincing the people about their economic benefits is now adopted as a policy by the administration to avoid repetition of such calamities that affect the natural heritages. Making a linkage between the process conservation and educational motives of geotourism combined with wildlife tourism, a balance between tourist needs, ecological requirement and expectations of local community could be achieved.

Acknowledgment

We do hereby acknowledge those officers and staffs of Department of Forest, Govt. of Assam, who provided us the opportunity for intensive field study in Manas and Kaziranga National Parks.

REFERENCES

- Allan, M., Dowling, R., & Sanders, D. (2015). The motivations for visiting geosites: the case of Crystal cave, Western Australia. *GeoJournal of Tourism and Geosites*, year VIII, no. 2, vol. 16, p. 142-153.
- Baro, D., & Borthakur, S., K. (2017). Diversity and distribution of Papilionaceae in Manas National Park, Assam, India. *Bioscience Discovery*, 8(1), p. 14-19.
- Barua, M., & Sharma, P. (1999). Birds of Kaziranga National Park, India. *Forktail*, vol. 15, p. 47-60.
- Bonal, B., S., & Chowdhury, S. (2004). Evaluation of the barrier effect of National Highway 37 on the wildlife of Kaziranga National Park and suggested strategies and planning for providing passage: feasibility report to the ministry of environment and forests, government of India. New Delhi: Ministry of Environment and Forests.
- Borah, J., Sharma, T., Das, D., Rabha, N., Kakati, N., Basumatri, A., Ahmed, F., Vattakaven, J., Bhobora, C., & Swargowari, A. (2012). Diversity of carnivores in Manas National Park - a World Heritage Site, Assam, India. *CATnews* 56, Spring, p. 16-19.
- Castley, J., G. (2012). An international perspective on tourism in national parks and protected areas. *Colong Foundation for Wilderness*, 6th NWC.
- Chakraborty, P. (2012). Kanha model for conservation and wildlife tourism. *Practising Geographer*, no. 1, vol 16, p 223-229.
- Champion, H., G., & Seth, S., K., (1968). A Revised Forest Types of India. *Manager of Publications*, Government of India, Delhi, p. 404.
- Chaudhary, M. (2000). India's image as a tourist destination - a perspective of foreign tourists. *Tourism Management*, vol. 21, no. 3, p. 293-297.
- Choudhury, D. (2016). A critical review on Manas National Park and its future prospect. *International Research Journal of Interdisciplinary & Multidisciplinary Studies*, 2(5), p. 40-46.
- Dowling, R., & Ólafsdóttir, R. (2013). Geotourism and Geoparks—A Tool for Geoconservation and Rural Development in Vulnerable Environments: A Case Study from Iceland. *Geoheritage*, Springer.
- Eber, S. (1992). Beyond the Green Horizon: Principles for Sustainable Tourism: A discussion Paper Commissioned from Tourism Concern by WWF UK/edited by Shirley Eber. *Godalming, Surrey: WWF UK (World Wide Fund for Nature)*, London, p. 54.
- Egresi, I., & Polat, D. (2016). Assessing tourists' satisfaction with their shopping experience in Istanbul, *GeoJournal of Tourism and Geosites*, Year X, no. 2, vol. 18, p. 172-186.
- Goswami, R., & Ganesh, T. (2011). Conservation amidst political unrest: the case of Manas National Park. *Current Science*, 100(4), p. 445-446.
- Gray, M. (2004). Geodiversity: valuing and conserving abiotic nature. *Wiley, Chichester*.
- Gurung, D., J., & Goswami, C. (2015). Developing linkage between wildlife tourism and handicraft for local economic development: A case study of Kaziranga National Park. In: Goswami, C., Bhuyan, A., & Das, N. (Eds). *Tourism and Handicrafts: A sustainable Approach*. New Delhi: Excel India, p. 149-158.
- Hakim, L., & Soemarno, M. (2017). Biodiversity conservation, community development and geotourism development in Bromo-Tengger-Semeru-Arjuno Biosphere Reserve, East Java. *GeoJournal of Tourism and Geosites*, Year X, no. 2, vol. 20, p.220-230.
- Hussain, S., S., Giffin, A., W., Moran, D., Robinson, L., A., Fofana, A., & Paramor, O., A., L. (2010). An ex ante ecological economic assessment of the benefits arising from marine protected areas designation in the UK. *Ecological Economics*, 69(4), p. 828-838.

- Johann, M. (2014). The importance-performance analysis: an evaluation of tourist satisfaction with the destination attributes. *International Journal of Economic Practices and Theories*, no. 5, vol. 4, p. 572-578.
- Kefle, N. (2014). Nature based tourism and visitor experiences in Chitwan National Park (Thesis), *Lapland University of Applied Sciences*, Rovaniemi, Finland.
- Kubalíková, L., & Kirchner, K. (2015). Geosite and Geomorphosite Assessment as a Tool for Geoconservation and Geotourism Purposes: a Case Study from Vizovická vrchovina Highland (Eastern Part of the Czech Republic). *Geoheritage*, Springer.
- Lahkar, D., Ahmed, M., F., Begum, R., H., Das, S., K., Lahkar, B., P., Sarma, H., K., & Harihar, A. (2018). Camera-trapping survey to assess diversity, distribution and photographic capture rate of terrestrial mammals in the aftermath of the ethnopolitical conflict in Manas National Park, Assam, India. *Journal of Threatened Taxa*, 10(8), p. 12008–12017.
- Lazzari, M., & Aloia, A. (2014). Geoparks, Geoheritage and Geotourism: Opportunities and Tools in Sustainable Development of the Territory. *GeoJournal of Tourism and Geosites*, 13 (1), p. 8-10.
- Litirell, M., A, Suzanne B., Rita, K., Sherry, G., Shirley N., Rae, R., & Jane, A., S. (1994). Souvenirs and tourism styles. *Journal of Travel Research*, 33(1), p. 3-11.
- Maghsoodi Tilaki, M., J., Hedayati-Marzbali, M., Abdullah, A., & Mohsenzadeh, M. (2017). Towards tourism development: bridging the gap between tourists' expectations and satisfaction. *GeoJournal of Tourism and Geosites*, Year X, no. 1, vol. 19, p.104-114.
- Mazhitova, G., Z., Pashkov, S., V., & Wendt, J., A. (2018). Assessment of landscape-recreational capacity of North Kazakhstan region. *GeoJournal of Tourism and Geosites*, Year XI, no. 3, vol. 23, p.731-737.
- Monterrubio, J., C., & Espinosa, B. (2013). Characterisation of ecotourism employment in a developing world destination. *GeoJournal of Tourism and Geosites*, Year VI, no. 1, vol. 11, p. 54-65.
- Okello, M., M., & Yerian, S. (2009). Tourist Satisfaction in Relation to Attractions and Implications for Conservation in the Protected Areas of the Northern Circuit, Tanzania. *Journal of Sustainable Tourism*, p. 605-625.
- Pletsch, M., Velázquez, V., Azevedo, Sobrinho, J., Borges, G., & Coutinholetsch, C. (2014). Geological and geomorphological elements as management tools in protected areas open to public use: a case study of the Pedroso's Natural Municipal Park, Santo André, Brazil. *GeoJournal of Tourism and Geosites*, 2 (14), p. 111-124.
- Reynard, E., Fontana, G., Kozlik, L., & Scapozza C. (2007). A method for assessing 'scientific' and 'additional values' of geomorphosites. *Geographica Helvetica*, vol 62, p. 148-158.
- Rugendyke, B., & Son, N., T. (2005). Conservation costs: Nature-based tourism as development at Cuc Phuong National Park, Vietnam. *Asia Pacific Viewpoint*, 46 (2), p. 185-200.
- Sarma, P., K., Lahkar, B., P., Ghosh, S., Rabha, A., Das, J., P., Nath, N., K., Day, S., & Brahma, N. (2008). Land-use and land-cover change and future application analysis in Manas National Park, India using multi-temporal satellite data. *Current Science*, 95 (2), p. 223-227.
- Schwartzman, S., Moreira, A., & Nepstad, D. (2000). Rethinking tropical forest conservation: perils in parks. *Conservation Biology*, vol. 14, p. 1351-1357.
- Scott, D., A. (Ed.) (1989). *A directory of Asian wetlands*. IUCN, Gland, Switzerland and Cambridge, UK.
- Sharma, G. (2018). Studies on the Mammalian Diversity of Kaziranga National Park, Assam, India with their conservation status. *Journal on New Biological Reports*, 7 (1), p. 15–19.
- Shavanddasht, M., Karubi, M., & NekouieSadry, B. (2017). An examination of the relationship between cave tourists' motivations and satisfaction: The Case of Alisadr cave, Iran. *GeoJournal of Tourism and Geosites*, Year X, no. 2, vol. 20, p. 165-176.
- Singtuen, V., & Won-in, K. (2018). Geodiversity and geoconservation of the Chaiyaphum Region in Thailand for sustainable geotourism planning. *GeoJournal of Tourism and Geosites*, vol. 22, no. 2, p. 548-560.
- Stemberk, J., Dolejs, J., Maresova, P., & Kuca, K. (2018). Factors affecting the number of visitors in National Parks in the Czech Republic, Germany and Austria. *ISPRS International Journal of Geo-Information*, 7(124), p 1-10.
- Szczęśna, J., & Wojtanowicz, P. (2014). The Role of National Parks in Promoting Sustainable and Responsible Tourism. *Barometrregionalny*, 12(4), p. 19-25.
- Tobler, M., W., Carrillo-Percastegui, S., E., Pitman, R., L., Mares, R., & Powell, G. (2008). An evaluation of camera traps for inventorying large- and medium-sized terrestrial rainforest mammals. *Animal Conservation*, vol. 11, p. 69–178.
- Yıldırım, T., & Koçan, N. (2008). Evaluation of Acigol Caldera Nevşehir, Kalecitepe and Acıgöl Caves in terms of Geo-tourism. *Ege University Journal of Agriculture Faculty*, 45 (2), p. 135-143.
- *** District Statistical Hand Book, Baksa. (2000). Assam.
- *** UNESCO-WHC. (2019). India: Properties inscribed on the World Heritage List (37). Retrieved from <https://whc.unesco.org/en/statesparties/in>.

Submitted:
11.12.2018

Revised:
15.02.2019

Accepted and published online
19.02.2019