The evaluation of environmental and socio-cultural impacts of tourism on the Khorgo-Terkhyn Tsagaan Nuur National Park

Khishigdalai Ulaankhuu*

School of Business, University of the Humanities, Ulaanbaatar, Mongolia

ARTICLE INFO: Received: 11 Sep, 2019; Accepted: 08 May, 2020

Abstract: The Khorgo-Terkhiin Tsagaan Nuur National Park is one of the major tourist destinations in Mongolia. The Park, in recent years, has witnessed a significant increase in the number of visiting local tourists. The present research was conducted to assess the environmental, social and cultural impacts of tourism in the region particularly today when we talk about sustainable tourism. To assess these impacts, as assessment method was used which is applied internationally. These impacts were based on three criterion for sustainable development-environmental impacts, social and cultural impacts. The National Park has been facing environmental impacts such as poor waste management, soil erosion, overgrazing, and water pollution. Even though it has some great impacts on the social, cultural and environmental aspects and its products and services, preserving traditional and cultural heritages and improving the skills of local and tourist workers, it continues to have a negative affect on the traditional customs, national arts and culture. Therefore, it is important that the means and methods of reducing these negative impacts should be planned and developed in the near future.

Keywords: Khorgo-Terkhyn Tsagaan Nuur National Park; environmental impact; socio-cultural impact and sustainable development;

INTRODUCTION

In recent years, the concept of developing sustainable tourism-management has been adopted internationally to improve Protected Areas (PA) [1].

Most of the international tourists visiting Mongolia travel to PAs and deliberately eight out of every ten tourists have traveled to PA [2].

The International Union for Conservation of Nature (IUCN) has noted that the implementation of sustainable tourism management in the Pas [3] has a positive impact on the environment, socio-culture and the economy. The Khorgo-Terkh Tsagaan Nuur National Park (KTTNNP) is located in the central part of the Khangai Mountains and has a unique volcanic lake with humid weather conditions. The National Park was included in the list of the Ramsar Convention of Wetland Protection in 1997 [4].

*corresponding author: Khishigdalai@humanities.mn
https://orcid.org/0000-0002-1450-3931
It is impending to study the ecosystem of the region, protect and develop sustainable tourism in order to increase the economic value.

Accordingly, the survey was conducted to identify the level of environmental and socio-cultural impacts of tourism on the National Park.

The purpose of the study is to assess the environmental and socio-cultural impacts of tourism on the National Park and to determine the basis for sustainable tourism development.

MATERIALS AND METHODS

The current condition of the tourism in the Khorgo-Terkhyn Tsagaan Nuur National Park

KTTNNP is one of the fastest-growing PAs in Mongolia in terms of tourism. The number of tourists visiting the National Park is shown in table 1.

| Year | Number of visitors (Person) | Total number of visitors (Person) |
|------|-----------------------------|---------------------------------|
|      | International | Domestic |                              |
| 2008 | 4,188         | 2,770     | 6,958                          |
| 2009 | 3,922         | 3,274     | 7,196                          |
| 2010 | 3,486         | 2,923     | 6,409                          |
| 2011 | 3,601         | 4,739     | 8,340                          |
| 2012 | 2,151         | 4,970     | 7,121                          |
| 2013 | 1,829         | 10,642    | 12,471                         |
| 2014 | 2,926         | 14,563    | 17,489                         |
| 2015 | 4,291         | 17,423    | 21,714                         |
| 2016 | 3,586         | 22,500    | 26,086                         |
| 2017 | 4,764         | 33,000    | 37,764                         |
| 2018 | 5,348         | 42,664    | 48,012                         |

Source: Park administration

As shown in Table 1, the number of domestic visitors to KTTNNP has been increasing, which almost doubled in 2013. The number of international tourists has declined steadily from 2008, receiving the lowest number of tourists (1829) in 2013. However, the number had increased by 60% in 2014 and 47% in 2015. In 2016, the number of international tourists shrunk by 21.8% (Figure 1).

As shown in Figure 1, the number of domestic visitors has increased steadily from 2008, reaching the highest number (5,348) in 2018. The number of international tourists has declined from 2008 to 2016, receiving the lowest number (4,188) in 2008.

Figure 1. Number of visitors visiting the National Park
87% of the total visitors visiting the KTTNNP are domestic visitors, while the remaining 12.9% are international visitors. There are about 600 tour operators in Mongolia and 15 of them that are operating in the area were chosen to define the tour itinerary. The following four itineraries have been provided to the visitors [1].

Tour itinerary 1
Ulaanbaatar-Khara Khorum-Tsetserleg-Khorgo-Terkhiin Tsagaan Nuur-Muren-Khuvsgul Lake-Murun-Ulaanbaatar.

Tour itinerary 2
Ulaanbaatar-Elsen Tasarkhai-Khara Khorum-Tsenkheryn Hot Springs-Khorgo-Terkhiin Tsagaan Nuur-Ugii Lake-Ulaanbaatar.

Tour itinerary 3
Ulaanbaatar-Umnugobi-Gobi Gurvan Saikhan-Khongoryn Els-Yolyn Am-Khara Khorum-Khorgo-Terkhiin Tsagaan Nuur-Ugii Lake-Tsenkheryn Hot Springs-Ulaanbaatar.

Tour itinerary 4
Ulaanbaatar-Amarbayasgalant-Uran Togoo-Muren-Uushgyn Bugan Chuluu-Khuvsgul Lake-Jargalant-Khorgo-Terkhiin Tsagaan Nuur-Tsenkher-Khara Khorum-Ongi-Bayanzag-Khongoryn Els-Yolyn Am-Gun Galuut-Terelj-Ulaanbaatar.

For domestic travelers, the main itinerary of their trip is similar to the above-mentioned itineraries and they mostly travel independently with their families and friends for 2-3 days [1]. The following travel itinerary has been developed and implemented by the Administration of the Khangai Mountain Range [1].

Itinerary: Tsetserleg-Tariat soum 170 km-Khorgo Togoo 5 km-Gants Huny Agui 3 km-Shar Nohoin Tam, Musun khongil 2 km-Zaluusyn Khongil 3 km-Uvgun Khad 3 km-Terkhiin Tsagaan Nuur-Tsetserleg 186 km.

The main attractions and resource evaluation
The main attractions included in the travel programme are Khorgyn Togoo, Terkhiin Tsagaan Nuur, Gants Huny Agui, Shar Nokhoin Tam and Uvgun Khad [4]. In addition to these natural attractions, there are many historical and cultural treasures in the National Park as well.

Evaluation of the recreational condition
An analysis of the environmental and climatic conditions of the KTTNNP shows that the average indicator is 2.5 points [1], which is considered suitable for tourism in this region.

The travel-recreation load in the Khorgyn Togoo area is 420 per/ha, or 1.4 times higher than the norms of natural regeneration (300 persons per ha), in Terkhiin Tsagaan Nuur area, it is 336 per/ha or 1.12 times higher [5]. This shows that the National Park is overloaded during peak tourist season.

The capacity of the accommodation
There are 14 licensed tourist camps in the National Park and 8 of them are active [4]. The capacity of tourist accommodation operating in the National Park is shown below.

| Table 2. The capacity of tourist accommodation |
|-----------------------------------------------|
| ![Table](https://via.placeholder.com/150) |
| Hotel | Guesthouse | Tourist Camp | Ger Camp |
| Number | Number of beds | Number | Number of beds | Number | Number of beds |
| KTTNNP | 0 | 0 | 1 | 20-30 | 8 | 445 households 145 gers |
| | | | | | 35 | 580 |

Tourist camps and guesthouses are mainly located in the northern shores of the lake. In other words, the camps are established based on the main tourist attractions. On the southern shore of the lake, the "Dalai Van" tourist camp and 3 other guesthouses are located. There are 2 camping sites with 1 hectare of land each located in the Surtyn Am area.
Services provided to tourists are shown below (Table 3). There are food services, and markets and souvenir shops are located in Tariat soum.

**Table 3. Types and numbers of services for tourists**

| Museum | Club | Restaurant | Market | Shop | Guide | Souvenir shop | Guides with private vehicle |
|--------|------|------------|--------|------|-------|---------------|----------------------------|
| -      | 1    | 15         | 15     | 5    | -     | -             | -                          |

**Methodology of evaluating the environmental, socio-cultural impacts of tourism**

The International Union for Conservation of Nature (IUCN) has developed the general principles of sustainable tourism [6]. These principles aim to promote eco-tourism as well as to increase the positive impacts of tourism on the environment, society and economy.

After studying the recommendations on sustainable tourism planning by the European Union (EU) for evaluating the environmental, social and economic impacts [7], recommendations by the International Union for Conservation of Nature (IUCN) [6] and international research organizations [8], IEPA recommendations have been chosen as the general methodology. According to the "Methodology to estimate the impact of tourism on the environment, society and economy" by Gansukh. D, Erdenetuul. S and Navchaa. T, the environmental impacts are defined by 6 categories and 24 criteria and the socio-cultural impacts are determined by 2 categories and 23 criteria.

The environmental impacts from tourism have been assessed by (-3) to 0 points in 24 criteria and six categories, such as soil, geology, geomorphology, water, landscape, wildlife, and plants [9].

The socio-cultural impact has been assessed by (-1) to 1 point in 23 criteria and 2 categories.

The evaluation used observation methods and questionnaires. About 100 people and 16 business organizations responded to the questionnaire.

**RESULTS**

SWOT analysis is shown in Table 4, which was based on the current tourism conditions, attractions, and resource evaluation.

**Table 4. SWOT analysis of the Khorgo-Terkhiin Tsagaan Nuur National Park**

| Strengths | Weaknesses |
|-----------|------------|
| ➢ Relatively well-developed infrastructure | ➢ Excessive concentration of tourists during the peak season |
| ➢ Attracted to the tourism market earlier | ➢ Closely located camps |
| ➢ The market is well-known | ➢ Increased environmental impact of domestic visitors |
| ➢ Included in the itinerary tour operator’s offer | ➢ Unrestricted area for camping |
| ➢ The intersection of major tourist attractions along a vertical and horizontal axis | ➢ Quality and standard of the ger camps are poor and lack of sanitation facilities |
| ➢ Local community participation is active | ➢ Transit place for tourists |
| ➢ Clear routes and directions | ➢ Bumpy roads |
| ➢ Traffic signs and information boards are put | ➢ Lack of camping sites |
| | ➢ Lack of collaboration between tour operators and local authorities |
Opportunities

- Reduce the environmental threats by establishing internal zoning and enforcing regional zones
- Replan the land and upgrade the guest houses and sanitation facilities
- Reduce the negative impacts of visitors with tents by adding and decorating the camping sites
- Increase the income of local communities by creating new travel types for tourists
- Reduce soil erosion by putting asphalt road from Tariat to Terkh in Tsagaan Nuur

Threats

- Soil erosion due to excessive concentration of tourist
- Threats on the environment from domestic visitors
- Environmental degradation and lake pollution due to poor sanitation facilities
- Reduced tourists satisfaction and arrivals due to poor environmental condition
- Lose tourists to other destinations

According to the study and survey, such environmental impacts as waste, soil erosion, land degradation, overgrazing, water pollution and improper use of land have been observed (Table 5).

**Table 5. Environmental Impact Evaluation of Tourism**

| Impact                        | Negative impact | No impact |
|-------------------------------|-----------------|-----------|
|                               | By percentage   |           |
| Evaluation                    | -3              | -2        | -1        |
| Air pollution                 | 0               | 8         | 6.8       | 11         | 9.4       | 97        | 83.6 |
| Lack of freshwater            | 6               | 11        | 9.4       | 19         | 16.3      | 80        | 68.9 |
| Water pollution               | 20              | 13        | 11.2      | 20         | 17.2      | 63        | 54.3 |
| Waste                         | 34              | 30        | 25.8      | 19         | 16.3      | 33        | 28.4 |
| Shortage of biological species| 12              | 8         | 6.8       | 14         | 12.1      | 82        | 70.6 |
| Soil erosion and inappropriate use of land | 9 | 19 | 16.4 | 33 | 28.5 | 55 | 47.4 |

*Note: Impacts are assessed by the survey participants and -3 indicates negatively impacted and 0 indicates no negative impacts*

However, air pollution, lack of freshwater, and biodiversity loss are not affected, but water and soil pollution are likely to have an impact, which may result in the risk of biodiversity loss and shortage of freshwater.

Tourism has positive impact on the socio-culture by developing the organization’s foreign relations, products, types and quality of services, protecting the natural and historical attractions and improving the skills of staff of the tourism sectors. (Table 6).

**Table 6. Socio-Cultural Impact Evaluation of Tourism**

| Impact                        | Negative impact | No impact | Positive impact |
|-------------------------------|-----------------|-----------|-----------------|
|                               | By percentage   |           |                 |
| Evaluation                    | -1              | 0         | 1               |
| Social characteristics         |                 |           |                 |
| Organization’s foreign relations |                 | 116        | 100            |
| Structure of the organization | 29              | 25        | 87              | 75          |
| Types of products and services|                 |           | 116            | 100         |
| Employee’s activity and productivity | 29 | 25 | 87 | 75 |
| Employee skills               | 29              | 25        | 87              | 75          |
| Language skills | 31 | 26.8 | 85 | 73.2 |
|-----------------|----|------|----|------|
| Opportunities to have new friends | 29 | 25 | 87 | 75 |
| Religion | 11 | 6 | 100 |
| Environmental noise | 73 | 63 | 43 | 37 |
| Leisure time | 87 | 75 | 29 | 25 |
| Utilization of public lands | 44 | 38 | 72 | 62 |
| Waste and pollution | 93 | 80 | 23 | 20 |
| Business opportunities for locals | 51 | 44 | 65 | 56 |
| Lifestyle | 44 | 38 | 72 | 62 |
| Social life | 29 | 25 | 87 | 75 |

### Cultural characteristics

| Traditional customs | 11 | 9.5 | 35 | 30.2 | 70 | 60.3 |
|---------------------|----|-----|----|------|----|------|
| National Art and Cultural Development | 21 | 18 | 31 | 27 | 64 | 55 |
| Protection of historical and cultural heritage and attraction | 31 | 27 | 85 | 73 |
| Protection of natural sites and environment | 10 | 8.6 | 106 | 91.4 |
| Pride and value of the traditional culture and history | 10 | 8.6 | 106 | 91.4 |
| Service culture | 35 | 30.2 | 81 | 69.8 |
| Quality and accessibility of the handmade crafts and souvenirs | 29 | 25 | 87 | 75 |
| Quality of products and services | 116 | 100 |

*Note: Impacts are assessed by survey participants and -1 indicates negatively affected, 0 is no impact and 1 defines the positive impact.*

It is maintained that the impacts of waste and pollution have affected the traditional customs, national arts and cultural development. Clearly, it has no impact on religion and leisure time.

### CONCLUSIONS

This study was conducted to assess the impact of tourism on the environment and socio-culture of KTTNNP.

In terms of the environmental impacts, 71.4 percent of the respondents said that the pollution has negative impacts, 52.7 percent - soil erosion, 45.6 percent - water pollution and 29.2 percent referred to biodiversity depletion. Overcrowding of visitors during the summer season should be reduced to prevent the negative impacts and to develop sustainable tourism, while at the same time, ways and means must be identified to decrease the negative impacts.

In terms of socio-cultural impacts, 100% of the survey participants said that waste and pollution have a negative impact, 39.7% said that they harm the traditional customs, 45% - national arts and cultural development, but tourism has positive impact on the socio-culture by developing the organization’s foreign relations and ties, products, types and quality of services, protecting the natural and historical attractions and improving the skills of employees of the tourist industry. This means that local communities have positive attitudes towards developing tourism. Therefore, it is possible to increase community participation through the development of community-based tourism.

In the near future, it is essential to organize multilateral activities to reduce the negative environmental, socio-cultural impacts of tourism. For example, appropriate management of waste can be introduced to reduce waste.

To reduce the negative impacts on society, it is important to organize multilateral
activities to help educate the local community and to provide them with information about tourism. Furthermore, it is possible to increase the efficiency of tourism in local areas by encouraging local citizens to learn more about tourism, extending the stay of tourists, and developing special interest tourism.

REFERENCES

1. MET. (2017). The management plan for tourism in Khorgo-Terkhiin Tsagaan Nuur National Park.
2. World Bank. (2011). Mongolian Tourism sector and Economic Impacts.
3. Eagles, P. M. (2002). Sustainable Tourism in Protected Areas.
4. MET, Administration of Khangai Mountain Range. (2016). The management plan for tourism in Khorgo-Terkhiin Tsagaan Nuur and Noyon Khangai National Park.
5. Bayasgalan, L, Baasannamjii, B. (2015). “The methodology issue for estimating the travel-recreational load” (on the example of Khorgo Terkhiin Tsagaan Nuur National Park).
6. World Commission on Protected Areas. (2002). Sustainable Tourism in Protected Areas-Guidelines for Planning and Management: Best Practice Protected Area Guideline Series No. 8.
7. Europarc Federation. (2015). Sustainable Tourism in Protected Areas-Good for parks, good for people.
8. DSE-German Foundation for International Development. (2002). The Ecotourism Training Manual for Protected Area Managers.
9. Gansukh, D, Erdenetuul, S, Navchaa, T. (2014). The methodology for estimating the impact of tourism on the environment, society and economy.