Tourism Products and Tourist Satisfaction in Nech Sar National Park, Ethiopia

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Abstract

Nech Sar National Park is one of the potential sites for tourism & conservation of wildlife including the endemic and flagship specie. The objective of the study was to investigate the tourism products and tourist satisfaction in the Park. For the better success of the study design that integrates both quantitative and qualitative research methods. Primary & secondary information sources have also been used; the primarily data collection was made using direct observation. Potential tourist attraction site was recorded with Canon digital camera & Garmin 64 GPS based field observations were used. Questionnaires were used to investigate tourist satisfaction in the park. Secondary data were collected from review of relevant different related publications and document reviews. Data were analyzed using descriptive statistics, MSEXCL programs, QGIS software. According to the finding of the study, majority of tourism products of the park are: Forty springs, God's bridge, Degabule viewpoint, Chamo view point, Nech Sar Plains, Sermaly River valley, Mountains chains, Ayemero Selassie Cave, Emporer Haile Selassie, Colonial Mengistu Hailemariam, Hot spring & tourism wild animals. Overall tourist satisfaction indicated, majority 84.5 % & 15.5 % visitors were satisfied & highly satisfied, respectively. Visitors source of information were 34.5%, 23.5%, 15%, 14%, 8% & 4.5% from friend, Internet, Tour Operators (Travel agents), written books, Ethiopian airlines & catalogs, respectively. Tourists Tourism product preference 33% Forest admirers, 19% wild animals18.5% Land scenery, 11.5% Trekkers, 10.5% Boat recreations & 7.5% Bird watchers. Infrastructures problems for visitors from 44.3% faced road problems, 21% waste disposal, 10.7% security, 9% Boat trip, & 9% professional local guides. Tourist Flow and income generated status in National Park increasing before the outbreak of covid-19 pandemic virus from 1987-2011 E.C. May - August, 2012 E.C tourist flow and revenue collection was zero, due to the occurrence of the pandemic covid-19 virus. 2014 E.C 800,000 ETB has been collected from National Park visitors that were collected from the entrance fee. Major tourism products problems in the park include grazing plain; illegal fishing two lakes, settlement and illegal farming, natural resource extraction, & Invasive and encroaching Plant Species. The government should promote the National Park & provide appropriate support for its conservation.

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1. Introduction

Ethiopia has an immense potential for tourism industry (Mulugeta, 2010; Kassegn, 2020; Dase *et al.*, 2020). It suffices to say that it has almost all types of primary tourist products: historical attractions, National parks with endemic wildlife, and cultural and religious festivals (Kassegn, 2020). UNESCO recognizes nine world heritage sites and one natural site (Yibabal, 2010; Tijani, 2020; Kassegn, 2020; Dase *et al.*, 2020). Tourism is well planned; it can generate benefits at the destination by increasing tourist receipts, government revenue, and employment (Kassegn, 2020). Successful tourism development, it is crucial to attract tourists and to recommend the destination for others to revisit (Dase *et al.*, 2020). In order to develop tourism industry, tourist satisfaction has been a considerable goal for many countries (Kassegn, 2020; Tijani, 2020). In fact, developing the tourism industry is the target of any government all over the world because it can generate GDP and jobs (Tesfanesh, 2017). Particularly, two developing tourism industry is desirable for all countries because it will benefit not only the industry itself, but also generate a strong flow-through effect in other sectors such as retail, transportation, and construction. In the recent decade, decision makers in the tourism industry have been trying to increase the level of tourist satisfaction in different manners. Consequently, the tourist satisfaction is viewed as an important research topic by both practitioners and academics (Tijani, 2020; Kassegn, 2020; Endalkachew *et al.*, 2022).

Nech Sar National Park derived from two Amharic words "Nech" meaning white & Sar meaning Grass) is one of 27 National Parks in Ethiopia (EWCA, 2020). The Park was established in 1974 and is 514 km² (Samson, 2010; Abiyot 2009; Zafu & Alemu, 2016). The Park's aquatic and wetland areas along the Lake Abaya and Lake Chamo shorelines are natural habitats covering approximately 17% or 96km² of the Park (Duckworth *et al.*, 1992; Fetene *et al.*, 2014). The Eastern Nech Sar plain, famous for its beautiful tall white grass supports species that are unknown elsewhere in Ethiopia, including an isolated population of white-tailed lark and the endemic Nech

Sar Nightjar (*Caprimulgussolala*) (Duckworth *et al.*, 1992). Nech Sar National Park's rare and endemic mammals, and it's beautiful scenery, make it a popular destination for National and international visitors (Zafu & Alemu, 2016; Wagnew, 2017). The Park's proximity to Arba Minch makes it one of Ethiopia's most accessible parks (Zafu & Alemu, 2016; Wagnew, 2017). National Park has the potential to become an important wildlife viewing destination in Ethiopia (Clark, 2010; Seid, 2019). The primary draw for this category of tourist are birds, however the presence of other species such as the Burchlle's zebra (*Equus quagga*), Nile crocodile (*Crocodylus niloticus*) & Hippopotamus (*Hippopotamus amphibious*) make it a well-rounded destination (Clark, 2010; Seid, 2019). Therefore, the present study is aimed at investigating the overall tourism products and tourist satisfaction in National Park.

2. The Study Area

Location: Nech Sar National Park is one of National Parks in Ethiopia with various natural marvels situated in the scenic part of the rift valley floor between Abaya and Chamo lakes and Eastern flanking to Arbaminch town which is 505 km away to the south of Addis Ababa. It is located between the Southern Nations, Nationalities and Peoples Region States. It elevation is ranging between 1108 and 1650 masl. Established in 1974 and covers an area of 514 km² in which 85% is land and 15% is water body from Abaya and Chamo lakes. It is bounded at $5^{0}51^{2}$ - $6^{0}10^{1}$ N and $37^{0}32^{2}$ - $37^{0}48^{2}$ E. 436 km² is terrestrial, 78 km² is aquatic and wetland (Duckworth *et al.*, 1992). The terrestrial vegetation of the park mainly consists of savannah, deciduous woodland, and evergreen riverine and groundwater forests which harbour a wide range of wildlife (Fetene *et al.*, 2011; Seid, 2019). The mean annual rainfall is between 800mm and 1000mm (Abiyot, 2009). Bimodal rainfall pattern with average annual precipitation of 906 mm and average monthly temperature of 23.5°C (Utaile *et al.*, 2020).



Figure 1: map of Nech Sar National Park

3. Methods

Sampling design & Technique: The research approaches were follow mixed study design that integrates both quantitative and qualitative research methods (Cresswell, 2003). Both primary and secondary data were used in this study. The primary data was collected through field observation and questionnaires. GPS based field observations were used to mark core attractions site & Questionnaire were used to investigate tourist satisfaction in the park. Whereas the secondary data was gathered from archives, tourism statistics bulletins and books. For tourism products. GPS locations of each destination were recorded Garmin 64 GPS. The representative samples of the respondents were selected purposively. The number of visitors was, 28,490, 862, and 648 for domestic, foreign and foreign residents respectively. Following Gay (1996), 5% of the total visitors (n=1,499) was used as sample visitors. Accordingly, the sample size distribution in each visitor was 1,424, 43 & 32 for domestic, foreign and foreign residents respectively. Accordingly, data collected Twelve (12) consecutive Months (July 2021 - June 2022). Questionnaires were developed to asses' information about tourist satisfaction of park, one year.

Data Collection Methods

Primary and secondary information sources have also been used; the primarily data collection was made using direct observation (personal record) which is supported through Canon digital camera (50*optical zoom & 20.3 mega pixels), 10x42 Binocular and Garmin 64 GPS. On the other hand secondary data were collected from review of relevant different related publications and document reviews. Tourism product data collection a

group of the experts and rangers were collaboratively moved to the inside park to explore new and updating old attraction site for the consecutive three months to assess the core tourist potential site. In order to determine the tourism product destination the ground truth points collected via GPS were transferred to QGIS 3.4 software version. The tourist satisfaction data is collected using questionnaire and interview. Questionnaire is very important tool to collect the data from large population. The questions were prepared both in the form of open ended and closed ended questions. In addition, interview was used to collect the data from the respondent. Interview questions also organized in unstructured form and the sequence of questions is not kept during the interview additional questions were raised while conducting the interview in order to get substantiated information for the study.

Data Analysis

The data of tourism products area was analyzed by QGIS software 3.4 versions, table and narrative form of note. The questionnaire survey data was analyzed MS Excel, whereas Moreover, figures, tables, and charts were used based on the nature of result and report as narrative form of note.

4. Result and Discussion

Assessment on Tourism products at Nech Sar National Park was made based on Natural attractions and historical site activities; from the perspective of identifying conservation challenges hindering the management activity and to indorse possible mitigation strategies.

4.1. Tourism Products

Table 1: Major tourist attracting sites in Nech Sar National Park

Major Attraction	Distance from HQ	What kind of wildlife you can see
Forty springs	3.5 km	Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer & Panthera paradus
God's bridge	23.2 km	Cercopithecus pygerythrus, Papio anubis, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Phacochoerus africanus, Orycteropus afer, Gazella granti, Lycaon pictus, Canis mesomelas, Canis adustus, Otocyon megalotis, Acinonyx jubatus, Panthera paradus & Panthera Leo
Degabule viewpoint	25 km	Cercopithecus pygerythrus, Papio anubis, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Phacochoerus africanus, Orycteropus afer, Gazella granti, Lycaon pictus, Canis mesomelas, Canis adustus, Otocyon megalotis, Acinonyx jubatus & Panthera Leo
Chamo view point	30.1 km	Cercopithecus pygerythrus, Papio anubis, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Phacochoerus africanus, Orycteropus afer, Gazella granti, Lycaon pictus, Canis mesomelas, Canis adustus, Otocyon megalotis, Acinonyx jubatus & Panthera Leo
Nech Sar Plains	27.6 km	Cercopithecus pygerythrus, Papio anubis, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Phacochoerus africanus, Orycteropus afer, Gazella granti, Lycaon pictus, Canis mesomelas, Canis adustus, Otocyon megalotis & Acinonyx jubatus
Sermaly River valley	34	Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer. Gazella granti, Lycaon pictus, Canis mesomelas, Canis adustus, Otocyon megalotis, Acinonyx jubatus, Panthera paradus & Panthera Leo

Major Attraction	Distance from HQ	What kind of wildlife you can see
Tilku Bonki mountain	17	Hippopotamus amphibious, Cercopithecus pygerythrus, Papio anubis, Erytherocebus patas, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, , Hystrix cristata, Orycteropus afer
Wallo wetland	7	Hippopotamus amphibious Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus,
Ayemero-Selassie Cave (founder of Arba Minch town)	6	Hippopotamus amphibious, Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer
Emporer Haile Selassie(Breathtaking place)	5	Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer
Colonial Mengistu Hailemariam (Breathtaking place)	4.5	Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer,Panthera paradus & Hippopotamus amphibious
Hot spring (Tsebel)	41	Cercopithecus pygerythrus, Papio anubis, , Colobus guereza, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer, Panthera paradus & Hippopotamus amphibious
Momme Mountain	41.5	Cercopithecus pygerythrus, Papio anubis, Colobus guereza, Equus quagga, Traglaphus strepsiceros, Traglaphus imberbis, Traglaphus scriptus, Medagua guentheri, Sylvicapra grimma, Kobus ellipsiprymnus defessa, Phacochoerus africanus, Hystrix cristata, Orycteropus afer
Harro Ropi lake	52	High the school of <i>Hippopotamus amphibious</i> , <i>Crocodylus niloticus</i> , & water birds
Crocodile market	17	An area of amazing natural entertainment of crocodile(<i>Crocodylus niloticus</i>) swarming and sun bathing in Chamo Lake and its beach & African Great White Pelican with various life forms dependent on water and associated wetlands



Figure 2: Map of major tourist attraction sites in National Park



Figure 3: Distribution of tourism wild animals in the Park

4.2. Ecological units of the park

4.2.1. Vegetation

Nech Sar National Park is endowed with diversity of its riverine and groundwater forest, savanna acacia woodland; open savannah (from which the name of the National Park Nech Sar meaning white grass was derived, as the colour of this open savanna is white), escarpment walls, highland acacia forest, hot springs and lake shores.



Figure 4. Partial view of different Habitat types of Nech Sar National Park; (a) Acacia woodland with scattered vegetation with GODs Bridge 3.5km narrowest land b/n the two lakes (Beltae Plain), (b) Bush land with Ganjullo Island, (c) Forty springs with visitors, (d) Groundwater forest with telku bonki mountain chai, (e) Nech Sar Plain (white grass), (e) Lake Chamo with visitors (Source: Tamirat & Teka) filed photo.

4.2.2. Biodiversity

From the country's wildlife species recorded until now, Nech Sar National Park possess more than 103 small and large mammals, 33 Reptiles, 351 Birds, 8 Amphibians, 16 Fish, 21 Snakes, 845 Arthropods, 8 Frog and Toad, 18 Dragonflies flora;- 700-1000 species 6 are endemic similar studies (Clark, 2010). The Swayne's hartebeests (*Alcelaphusbuselaphus swaynii*) were introduced to park which are now locally extinct similar studies (Simon *et al.*, 2020). The park harbours good population of flagship wild animals *Burchell's* zebra (*Equus quagga*) & Nile crocodiles (*Crocodylus niloticus*) with marginal population of Hippopotamus (*Hippopotamus amphibious*), Lesser (*Traglaphus imberbis*) & Greater Kudu (*Traglaphus strepsiceros*), and Bushbuck (*Traglaphus Scriptus*). It is also home for 40% of the countries avian species; including the illusive endemic NechSar Nightjar (*Caprimulgussolala*). Furthermore, 16 fish species are found in the two lakes including Nile perch (*Latesniloticus*) & Catfish (*Siluriformes*)



Figure 5: Some Mammals and birds of Nech Sar National Park; (a) *Hippopotamus amphibious (source:Aziz)*, (b) *Equus quagga*, (c) *Traglaphus Scriptus*, (d) *Crocodylus niloticus*, (e) Great White Pelican (*Pelecanus Ononcrotalus*), (f) *Traglaphus strepsiceros* (Source: Tamirat and Teka filed survey).

4.3. Tourist satisfaction status

Majority of National Park visitors were in the level of satisfied. In 2014 E.C sampling of satisfaction paper questioner were collected and analyzed, from which 84.5 % of visitors were satisfied, 15.5 % of visitors were highly satisfied (delighted) & No dissatisfied visitor were surveyed; whereas most visitors told us orally, what satisfied them was the abundance of multi attraction in the Park.



Figure 6: Tourist satisfaction of Nech Sar National Park, 2014 E.C

4.3.1. Tourists Nationality status

Nech Sar National Park was visiting by foreign visitors, foreign resident visitors & domestic visitors. In 2014 E.C most of Park visitors were domestic visitors; which were about 93.5% & some of foreign visitors were came from United States Of America (1.16%) & other less percentage of visitors from European countries such as Germany, United Kingdom, Holland, France, Belgium, Switzerland, Spain, Italy ,Norway, Ireland & Asian countries such as; Israel, China & India.





4.3.2. Tourists source of information

There are different source of information that enable visitors to get information about the tourist destinations. In 2014 E.C the most of Park visitor's source of information were friends (friend's visitors told). Sampling questioner paper had collected & analyzed, according to that 34.5% visitors got information from friend visitors, 23.5% Internet, 15% Tour Operators (Travel agents), 14% written books, 8% Ethiopian airlines & 4.5% catalogs, respectively (Figure 8).



Figure 8: Tourists source of information in NSNP, 2014 E.C

4.3.3. Tourists Tourism product choices

The charismatic Nech Sar National Park have different attractions that attracted many visitors. Most of Park visitor's interest was to visit the breathtaking groundwater canopy forest. In 2014 E.C Sampling questioner paper had collected & analyzed, from which about 33% Forest admirers, 19% wild animals, 18.5% Land scenery, 11.5% Trekkers, 10.5% Boat recreations & 7.5% Bird watchers, respectively (Figure 9).

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In Nech Sar National Park one of the biggest tourism development challenge was lack of infrastructure development. Facilities such as Roads across the National Park, Garbage disposal, Outdoor tourist campsite & Eco-friendly toilet didn't construct in Park. In 2014 E.C Sampling questioner paper had collected and analyzed, from which 44.3% faced Road problems, 21% Garbage disposal & Toilet problems, 10.7% Security issue, 9% lack of moderate Boat trip & 9% lack of professional local guides (Figure 10).





^{4.3.5.} Tourist Flow & Income Generated Status in 2014 E.C

In 2014 E.C at National Park tourist flow were high on the months of September (accommodated 4,672 visitors), February (accommodated 3,880 visitors) & January (accommodated 3,718 visitors), respectively. On other hand lower tourist flow on the months of December (accommodated 850 visitors) & November (accommodated 923 visitors), respectively. In 2014 E.C numbers of male visitors were higher than number of female visitors, which were 17,935 & 12,065, respectively. In 2014E.C total of 30,000 visitors were accommodated at Park, from among about 28,490 were domestic visitors, 862 were foreign visitors & 648 were foreign residents visitors were recorded. National Park was visiting by different visitors & generating income for the country. In 2014 E.C 800,000 Ethiopian Birr (800,000 ETB) has been collected from National Park visitors that were collected from the entrance fee purpose only. Income collected was high on the months of September (collected 103,530 ETB) & January (collected 96,045 ETB); whereas relatively to other months of 2014 E.C fewer income was collected on March (collected 26,315 ETB) & July (collected 31,555 ETB), respectively.

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Figure 11: Number of visitors' status



Figure 12: Income generated status in NSNP, 2014E.C



National Park tourist flows & incomes high before the outbreak of covid-19 it was reached the peak of its capacity, on other hand unfortunately the emergency of covid-19 damaged the same as the world tourism destinations. Whereas also even if within covid-19 & other infrastructure challenges, National Park was visiting by domestic visitors, foreign visitors & foreign resident visitors. But what more expected was still undone. Comparatively with all years from 1987E.C up to 2014 E.C number of visitors was highly ordered since on 2008 E.C (accommodated 37,570 visitors), 2014E.C (accommodated 30,000 visitors), 2011 E.C (accommodated 28,111 visitors), 2012 E.C (accommodated 27,509 visitors) & in 2010E.C (accommodated 26,740 visitors), respectively.

In 2014 E.C income collected was lower than others relatively to its high visitor's number, because most visitors in 2014 E.C domestic visitors, Because of the entrance fee was less than the entrance fee for foreign visitors. May up to August, 2012 E.C tourist flow & revenue collection was zero (0), due to the occurrence of the pandemic covid-19. National Park in 2014 E.C about 30,000 visitors were accommodated from 28,490 were domestic visitors, 862 were foreign visitors & 648 were foreign residents visitors. Tourist flows were high on the months of September (accommodated 4,672 visitors), February (accommodated 3,880 visitors) & January (accommodated 3,718 visitors), respectively. The lower tourist flow on the months of December (accommodated 923 visitors), respectively. In 2014 E.C numbers of male visitors were higher than number of female visitors, which were 17,935 & 12,065, respectively.

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Figure 13: Tourist flow and its trend for the last 27 years at NSNP (Source: Data compiled from; NSNP, EWCA and Self survey)



Table14: Income from Tourism and its Trend for the last 27 years at NSNP (Source: Data compiled from; NSNP, EWCA and Self survey).

5. Conclusion and Recommendation: This survey is to investigate the potential of tourism products & Visitor satisfactions have been carried out in Nech Sar National Park within 12 months. Currently National Park managed under Ethiopian Wildlife Conservation Authority. The tourism products of Nech Sar National Park are: Ecological units, Biodiversity, & Historical attraction sites. Most visitors are motivated to visit Nech Sar National Park after learning about these areas from friend, Internet, Tour Operators (Travel agents), written books, Ethiopian airlines & other sources of information. Visitors' dissatisfaction in National park are emanated mainly due to;- Limited tourism facilities and infrastructures problems such as roads & waste disposal site management system is not appropriate, professional local tour guides, security problems, Cattle are found in parks, Presence of people & settlements which deteriorates the quality of scenic landscapes, Begging is common in National park tourist flows & incomes high before the outbreak of covid-19, on other hand unfortunately the emergency of covid-19 damaged the same as the Ethiopia tourism destinations. Based on the findings and conclusions of the study, the researcher forwards the following recommendations to the government, experts, and concerned bodies of Nech-Sar National Park.

- ✓ Avoid shortage in professional skill among local tour guide.
- ✓ Waste bins should be placed in entrance gate & outpost to avoid environmental pollution and others must full needs safety protocol is before visit National Park.
- ✓ Regional & Zonal Culture and Tourism Department & Nech Sar National Park must undertake research based presentations and workshops so as to identify problems of service delivery system, accommodation, basic facilities and infrastructure, and in order to provide possible solutions and suggestions.
- ✓ The government should promote the National Park & provide appropriate support for its conservation.
- ✓ Ethiopia wildlife conservation authority and tourism and cultural minister & non-governmental organizations could improve services by investing in the park's distinctive attributes, promotion and

development of tourism products, infrastructure or tourist facility, affective components, and activities to provide natural and relaxation benefits as well as social benefits increasingly sought by park users.

✓ Ethiopia government should pay attention to nature and wild animals tourism conservation; nature and wild animals tourism conservation is master key to sustain employment value

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