

A Review on: Can Developing Ecotourism is a Panacea for the Betrayed Lake Hashenge and its Environs, Tigray-Ethiopia?

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ABSTRACT

The main aim of this review is to divulge the major ecotourism resources of Lake Hashenge and its environs and the challenges these resources are facing with. The paper has made use of a summative approach of content analysis methods in reviewing the published and unpublished literatures. The review indicates that though Lake Hashenge and its environs are endowed with several ecotourism attractions like natural, cultural, archaeological and historical resources, these resources are threatened with great anthropogenic factors as well as natural enigmas. Hence, developing ecotourism in the area is a timely issue to solve these anthropogenic and natural problems of the area.

Keywords: Lake hashenge; Ecotourism attractions; Challenges; Benefits of ecotourism

INTRODUCTION

Ethiopia is one of the most bio-diverse countries in Africa with exceptionally high levels of endemism. This is by virtue of its extensive areas of land with high altitude and variety of habitats, isolated from the rest of Africa by low altitude and arid areas, possesses a wide range of species of flora and fauna, many of which are endemic to the country. The large diversity of these ecological conditions is determined by topography of the region, ranging from 121 meters below sea level at Denakil depression to a peak of 4624 meters above sea level at Ras Dazhen [1].

Tigray is the genesis of Ethiopia's ancient with millennia old history, rich archaeological resources like pre-Christianity obelisks, stone inscriptions, countless rock-hewn churches, ancient monasteries, underground palaces, imperial tombs, the center of Christianity with numerous ecclesiastical paintings, ancient religious relics like the true Arc of the Covenant, origin of the Ethiopian Orthodox Christian chants and the destination for those who wish to see impressive natural sceneries and mosaic cultures in six major tourism clusters, i.e. Mekell, Wukro, Gheralta, Aksum, Maychew and Humera [2].

Similarly, Ethiopian Ministry of Culture and Tourism states that Tigray houses timeless churches, monasteries and mosques like Aksum Tsion St. Marry, Debredamo, St. Abuna Aregawi and the Nejashi Mosque, the earliest Muslim settlement in Africa and the burial site of followers of prophet Mohammed who fled

from Mecca to Ethiopia to escape persecution in 613 AD. The region is tremendously famous for its colorful traditional festival Ashenda, amazing landscape suitable for rock climbing at Gheralta and region wide conducive business environment to attract tourism investment. He further points out that the annual average crop production of the region is also below the standard annual food requirement recommendations of WHO and FAO.

Even though social protection-based safety net mechanisms plays a significant role in reducing vulnerability and serves as a base for building assets and resilience, supplementary pro-poor agriculture and natural resource programming is demanded to help the most vulnerable to build resilient livelihoods and to make them part of the continuing economic development of Ethiopia. The increment in the population size brings fragmentation in the land holding rates, increases the number of rural landless; especially youth and an immense pressure on the natural resource base.

Terrace cultivation on steep slope of Lake Hashenge, which is actually the result of population explosion, is another reason of diminishing rate of farmland holdings. He further adds that the poor farming system, high population density (197 persons/km²) and lack of enough conservation measures are some of the main causes of land degradation in Lake Hashenge catchment.

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Received: October 04, 2021; **Accepted:** October 18, 2021; **Published:** October 25, 2021

Citation: Syraji S (2021) A Review on: Can Developing Ecotourism is a Panacea for the Betrayed Lake Hashenge and its Environs, Tigray-Ethiopia? J Tourism Hospit.10: 478.

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There is a growing concern to provide the locals with alternative off-farm employment opportunities in this area. This will not only augment the farming sector but it will also improve local livelihood and the natural resource base of the area [3]. The third and the fourth sections reveal the challenges those attractions are facing and the benefits of developing this site as an ecotourism destination. The last part obviously discusses conclusion (Figure 1).

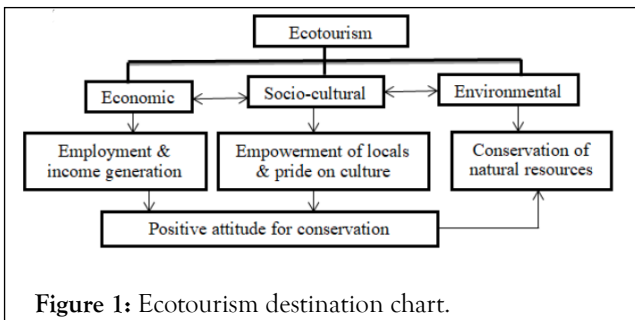


Figure 1: Ecotourism destination chart.

LITERATURE REVIEW

Topography and area description

The articles have been reviewed based on content analysis method. Content analysis helps to provoke meaning and draw accurate conclusions from the collected data through either a manifest or latent analysis [4]. Merits of the application of the method are economical [5], easy to use in qualitative, quantitative and mixed modes of research frameworks and serves to interpret texts for various purposes. It is an observational method of research applied to systematically measure the contents of all forms of written statements. From the three approaches of content analysis such as conventional a summative content analysis approach which consists the counting and comparisons of keywords/contents followed by the interpretation of the underlying context is used to review the published and unpublished literatures.

The review is limited to the published and unpublished literatures. The collected articles were reviewed based on the authors' own perspective of the study area's topographical description, major ecotourism resources of the area-natural, cultural, archaeological and historical, the existing and potential future challenges for these resources and the role of ecotourism therein.

The conceptual framework followed in the study is adapted from [5]. The first section of the review deals with the description of the study area; absolute and relative locations, its climate and the major economic activities. The second part of the review elaborates the ecotourism attractions of the area such as natural, cultural, archaeological and historical. The third and the fourth sections reveal the challenges those attractions are facing and the benefits of developing this site as an ecotourism destination. The last part obviously discusses conclusion.

ECOTOURISM RESOURCES OF THE AREA

Fishes

The Ethiopian aquaculture, with an estimated live water body of 7,334 km² of major lakes and reservoirs, 275 km² of small water bodies and 7,185 km of rivers within the country, is renowned for being an alternative means of attaining food security and poverty reduction, and these days, it is also recognized as an essential part of rural and agricultural development strategies. Wetlands in Ethiopia are important livelihood sources of water, fish and raw materials (reeds, medicinal plants, papyrus) for a great number of people and to sustain the biodiversity [6].

Lake Hashenge has two species of fish grouped under two families such as Nile Tilapia (*Oreochromis niloticus*) and common carp (*Cyprinus carpio*). Both species, Nile tilapia (native to Ethiopia) and common carp (an introduced one), were introduced in Lake Hashenge by the National Fishery and other Aquatic Life Research Center in collaboration with the Ethiopian Ministry of Agriculture and the Tigray Bureau of Agriculture following the wipeout of the native Nile tilapia population because of strong algal bloom and the anoxic conditions that followed. These species have a clear difference with regard to their abundance; Nile tilapia is a prosperous fish species that accounts for 100% of the catch, whereas common carp is rarely caught in the lake.

Bird resources of the area

The highland part of Ethiopia harbors or provides home to a large number of endemic birds, mammals and amphibians contrary to its lowland and the lowland parts of tropical Africa. The four important bird areas of Tigray region are Hashenge, Desa's forest, Hugumburda-grat Kahu forest and Shire lowlands Tekeze valley. To date, Lake Hashenge is an attention-grabbing bird watching area even though there is a visible decline in the number of bird species of the area from 69 species of birds in 1999 to 30 species during the 2014 water-bird census period.

The lake provides refuge to many endangered and endemic bird species such as Ferruginous Duck Scientific names, *Wattled Ibis*, *Great Crested Grebe*, *Northern Shoveler*, *Southern Pochard*, *Maccoa Duck* and *Red-knobbed Coot*, *Black-headed Siskin*, *Rouget's Rail*, *White-billed Starling*, *White-collared Pigeon* and *Thick-billed Raven*, (*Serinus nigriceps*, *Columba albitorques*, *Onychognathus albirostris*, *Corvus crassirostris*), *Cape Eagle Owl* and *Dusky Babbler*. Describing the bird resources of the area in terms of their respective families. Stated that Anatidae (*Alopochen aegyptiaca*) family of birds has the largest species of birds followed by families of *Phoenicopterus minor*, *Lissotis melanogaster* and *Phalacrocorax carbo* [7].

In a nutshell, unlike its small size compared to other inland lakes of the country, Lake Hashenge is an ideal site for the endemic, threatened, migrant and resident water birds of the semi-arid region of northeastern Africa. They also have added that Ferruginous Duck (*Aythya nyroca*) and Maccoa Duck (*Oxyura*

maccoa) could be used as flagship species too draw public attention to conserve them.

Forest and vegetation cover

The land use pattern of Ofla Woreda indicates 23000 ha cultivated, 17000 ha forest area and 22439 ha covered by bush and shrub. The lake and its environs have limited natural vegetation cover. It includes plants like *Acacia* sp., *Croton macrostachyus*, *Vernonia amygdalina* and *Buddleja polystachya*, various phytoplankton species such as *Chroococcus*, *Anabaenopsis* and *Pediastrum* and diatoms represented by *Navicula* and *Cymbella*. Its location near to the Hugumburda, National Forest Priority Area and Grat-Kahsu Forests is another draw and important grace.

Cultural resources of the area

Culture, something that chains us to the past and directs our way to the future, consists what we think, how we act and what we have. It is what a given society owns like thinking, ways of acting and the material objects that people are serving with. The local communities of the area have wonderful cultural entities like traditional singing (e.g. gumaye) and dancing, different amazing cultural handicrafts meant for carrying butter (*Korye Tesmi*), food (*Agelgil*), milk/water (*Kacho*), and baby (*Mahzel-is* prepared traditionally from animal skins and is well adorned by several materials locally called *Sindid*, *Enqui* and *Za'egol*), eye catching dressings (*Tilfi-a* woman cloth made from cotton; its front side is ornamented with amazing sewing from neck to toe) and hairdo styles, traditional games like *hishy* and *karsa*, feeding systems (*Koreffee*-an alcoholic beverage prepared from barely) and folklore/indigenous knowledge.

Archaeological resources

Archaeologists have unearthed several archaeological evidences about the earliest inhabitants once lived on the onshore of the lake, Mifsas Bahri. The archaeological excavation conducted in southern part of Tigray discovers Aksumite pottery, bricks and buildings dated back to the 6th-7th century at the western side of Lake Hashenge in Mifsas Bahri and concludes that the area is the southern limit of organized settlement sites of the Aksumite civilization. The British expeditionary forces to Mekdela have allegedly found Aksumite coins near the same lake in the 19th century. Nevertheless most of them are in a delicate condition and are exposed to the diurnal/nocturnal variations in temperature and humidity [7,8].

HISTORICAL RESOURCES

Lake Hashenge and its environs are important historical places. These places witnessed memorable and long lasting historical events (from 16th to 20th Century) in the millennia old history

of the country. The 16th Century war between the Christian Highland kingdom led by Lebne Dingel and the Muslim lowlanders under the leadership of Imam Ahmed Ibrahim al-Gazi, also named as Gagn Ahmed-the left handed, had involved two foreign countries; Portuguese and Ottoman Turkish. Although the main motive behind the war was to secure economic interests, religion has been used as a pretext reason and the war has resulted in a futile arm conflicts between men of the same country [1].

CONCLUSION

The existing natural, cultural, archaeological and historical resources of Lake Hashenge and its environs are potential appealing ecotourism attractions. However, these resources are suffering a lot from various problems like erosion, overfishing, high sediment load, degradation of habitats, eutrophication, agricultural activities of intensification and intensification-which in turn creates excessive accumulation of heavy metals in the flesh and bones of fishes of the Lake. This ultimately is also affecting the abundance and diversity of the water birds and therefore causes serious fish post-harvest losses. Ecotourism should be developed in this area to boost economic development through direct and indirect alternative off-farm employment opportunities in ecotourism related activities, socio-cultural empowerment which would help locals get markets for their cultural products and feel proud of their culture and conservation of natural resources by offering financial incentives for conservation.

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