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Article

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Original scientific paper

ANALYSING THE SOUTHERN AREA OF LAKE TANA BIOSPHERE RESERVE AS A TOURIST DESTINATION USING THE TALC APPROACH

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Abstract

Ethiopia holds all the necessary ingredients for tourism development, given the multitude and uniqueness of attractions. Among them stands Lake Tana, a UNESCO Biosphere Reserve which is an extremely important resource for Ethiopia, locking up half of its freshwater. The target of the current paper is to make a supply analysis of the southern area of Lake Tana's visitor attractions, accommodation and food and beverage and the accessibility to these attractions as well as to settle the tourism development stage according to the tourism area cycle stage. The Lake Tana visitation trends followed an ascending pattern, figures show domestic tourism as being the most prevalent. The southern part of Lake Tana accounts for 28,3% of the tourist supply when compared to the entire lake's potential, among which the food and beverage sector is the most prevalent. By using the TALC approach, it came out that Lake Tana as a destination is situated on the development stage.

Keywords: visitor attractions, accommodation analysis, food and beverage sector, tourist flow, tourism area life cycle

JEL classification: Q26; L83

PURPOSE AND RESEARCH HYPOTHESIS:

The current paper follows three main directions related to the inventory and analysis of the attractions and facilities' supply and the attractions' accessibility in terms of transportation. The main target of the current paper is to make a supply analysis of the southern area of Lake Tana's attractions and the accessibility to these attractions as well as a supply analysis of the accommodation and food and beverage facilities. The hypothesis from which we started is that Lake Tana's southern part is well supplied for tourism, thus constituting a touristic hotspot at the level of Lake Tana. Further on another

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hypothesis is that Lake Tana although an old destination but belonging to a country in course of development whose tourist consumption and production pattern started at around the '70 is found among the first three stages of development thus the annexed purpose was to settle the tourism development stage attained by the southern Lake Tana applying the concept of Butler' (2006) tourism area life cycle. The research questions are: Is the southern area better supplied for tourism in terms of attractions than the northern one?; What is the supply of natural and man-made attractions from southern Lake Tana and how accessible are they in terms of means of transportation?; Are most attractions and facilities concentrated in the southern area of Lake Tana?; Does it constitute a concentration pole for tourism?; Is the supply between the attractions and facilities a balanced one or is there a gap between them?; What is the stage of tourism in relation to the destination area life cycle of the southern Lake Tana from the consumption and production analysis?

1. METHODOLOGY

The raw data were collected by the team members of the Bahir Dar University and processed by the current paper's authors into a dataset. They targeted the inventory of the natural and man-made attractions' supply; the accommodation and food and beverage facilities supply as well as the accessibility to these attractions. The area submitted for analysis comprises the southern, south-eastern and south-western area of Lake Tana for the attractions' inventory and Lake Tana's southern area belonging to Bahir Dar administration for the facilities supply related to accommodation and food and beverage. The inventoried accommodation and food and beverage facilities spread over the Bahir Dar administration on a range of 33 km from the southern area of Lake Tana shoreline. The visitor attractions of the southern Lake Tana mostly relate to islands and monasteries or churches (fig 1).



Fig 1. Map of visitor attractions in southern Lake Tana

The current study targets a supply analysis of the southern area of Lake Tana starting from the premise that it is a touristic hotspot compared to the rest of Lake Tana's

attractions. The inventory aimed to have a synthetic perspective about the tourism output in a world scale tourism biosphere attraction, i.e. Lake Tana, the source of the Blue Nile. The current study allowed to see what percentage of attractions is located in the southern area of Lake Tana and if it constitutes an attractions' concentration pole. The data from the datasets were processed into charts and the absolute values related to man-made/natural supply and facilities were transformed into percentages. Furthermore, accessibility to the natural and man-made attractions was emphasized and analyzed. All raw data were provided by the academic staff of the Bahir Dar University, available within the tourism lab of Bahir Dar University. The current research is an outcome of the joint collaboration between the University of Oradea and Bahir Dar University Erasmus mobility and research collaboration which occurred in June 2022.

2. CONTEXTUALIZATION

Tourism in Africa overpassed 70 million international arrivals in 2019, totalising over 4% of the global international tourist arrivals (UNWTO World Tourism Barometer, 2021). Ethiopian tourism contributed with 6,8% of the GDP in 2017 (Bires and Raj, 2020), but the pandemic period has caused a huge drawback to tourism decreasing drastically the international arrivals to Ethiopia, followed by the political inner conflict situation, which although being currently mitigated have negatively impacted the tourism perspectives. Despite all these, tourism is seen a future catalyst for Ethiopia providing an alternative means of income and job diversification in the future, the WTO estimates placing Ethiopia as overpassing 6% of the GDP in 2028 (Bires and Raj, 2020).

Ethiopia holds all the necessary ingredients for tourism development, given the multitude and uniqueness of attractions ranked at a global scale by many UNESCO sites. Among them stands Lake Tana, the source of the Blue Nile River, whose tourism-related supply analysis is the target of the current paper. It is one of the biggest lakes of the world, and accordingly in Ethiopia with an area of 3000 km². It is an extremely important resource for Ethiopia, locking up half of its freshwater (Damtie et al., 2021). Its catchment area ranges from altitudes between 1785 m to 2047 m.a.s.l. and includes four major river sub-basins such as Gelgel Abbay, Ribb, Gumara, and Megech Rivers. Lake Tana is included within the UNESCO Biosphere Reserve (Wondie A., 2018). As many other freshwater reservoirs across the globe, it is not spared by ecological issues and eutrophication such as for instance the pervasive Hyacinth weed that affects the lake's ecosystem (Minychl et al., 2019) or phosphorus concentrations (Muluken L. Alemu et al., 2017).

Lake Tana is located in the north-western part of Ethiopia, it is a tropical lake with a surface of 3111 sqkm. It provides the largest freshwater supply of Ethiopia of 50% and the source of the Blue Nile (Abay) river. Its depth ranges between 8-14 metres and is located at an altitude of 1840 m above sea level versus Lake Victoria at 1134 m asl. Lake Tana and its Blue Nile rivers and basins provide economic, social, spiritual, communal, environmental and political benefits for the downstream eastern Nile countries from Africa (Goshu and Zelelew, 2007). Lake Tana's international significance in not only

due to its biodiversity but also due to its hydro-politics and freshwater supply importance for the countries downstream. It holds a huge potential for aquatic ecosystem, transportation, tourism development through water journeys to monasteries, churches and caves, bird watching and animal watching. From more than five million lakes on the planet, Lake Tana ranks the top 250 lake regions at a world scale thus stimulating growth (Worku, 2017). Lake Tana's importance for tourism is given by the 37 isles belonging to it among which 31 hold monasteries and churches dating back to the 13th and 14th century as well as by a rich biodiversity which create all favourable premises for ecotourism. Lake Tana was granted the title of a UNESCO world heritage site in 2015 due to its rich biodiversity. The adjoining city, Bahir Dar is one of the most traveller important destinations in Ethiopia, in 2002 being awarded the UNESCO Cities Prize for Peace (Worku, 2017).

Lake Tana hosts diverse tourism resources with unique products at different destination sites of islands, peninsulas, wetlands and forested areas coupled with cultural and historical heritages. However, only religious sites and historical heritages are most promoted and visited around Zegie, Debremariyam and Kibran Gebreal (Abraham Marye et al., 2011) for the southern part. An important document and an in-depth analysis of Lake Tana in its entirety and vicinity entitled *Tourism Destinations Networking Development Plan for Lake Tana and its Vicinities* was elaborated by a team of experts in 2011 (Marye et al., 2011) encompassing important issues such as resources, flows, environmental status, evaluations, networking opportunities, promotion, etc.

Lake Tana provides both natural and man-made tourist attractions, the former relating to islands and peninsulas which host caves, plantations, protected plant and animal species and the latter referring to active monasteries and churches, as well as local handicraft. In the current study, the southern part of Lake Tana attractions were inventoried and analyzed, as well as the accessibility to these resources. Given the fact that the southern part of the lake's shoreline falls in the administration of Bahir Dar city the ancillary facilities to tourism were also inventoried and analyzed such as the accommodation and food and beverage supply ranging of up to 33 km from the southern Lake Tana's shoreline. In order to see which is the share of the southern part of Lake Tana attractions and if it constitutes an attraction pole, we surveyed its natural (islands and peninsulas) and man-made attractions (monasteries and churches) which amounted to 74 attractions for the entire area of Lake Tana. The chart indicates that the lake has natural attractions to the highest degree in a percentage of over 58% while the man-made attractions occupy the share of 42% (fig 2). By analyzing the visitor attractions supply located in the southern part of Lake Tana in shows that it holds 21 natural and man-made attractions (fig 3), thus indicating that a share of 28,3% visitor attractions is located in this area.

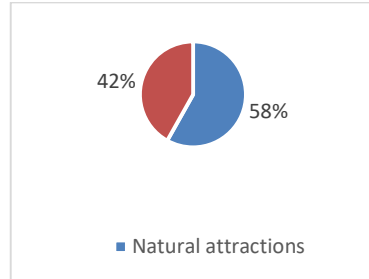


Fig. 2. Lake Tana's natural and man-made attractions share

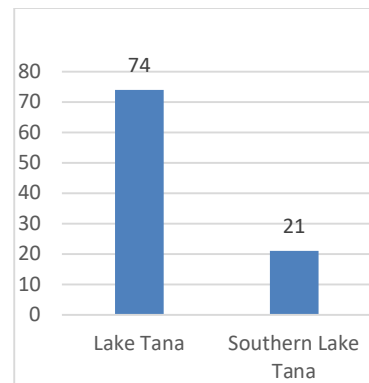


Fig. 3. Comparison between Lake Tana attractions supply and the Southern Lake Tana Supply

Lake Tana's tourist attractions include both natural and man-made attractions such as 74 attractions which mainly refer to islands, peninsulas, forests, plantations, bird and plant species, monasteries and churches whereas the southern area of Lake Tana concentrate 21 such attractions equating to 28,3% of the entire Lake Tana attractions' supply and relates to as islands, a peninsula, wildlife, monasteries, religious and historical artefacts.

The visitor attractions selected for the current study are located in the southern part of Lake Tana, as they are usually the most visited and included within the tour packages around Lake Tana. The visitor attractions located in the central and northern part of Lake Tana are usually visited by individual tourists or individual travel arrangements.

In terms of demand the tourist visitation pattern varies largely in the case of domestic and international tourists as the chart (fig 4) below indicates. In 1990 there were 24,650 total tourists where the domestic tourists were double than the international tourists,

namely 15,712 versus 8,938. During more than two decades this gap has widened so much that 435,182 domestic tourists could be counted versus merely 1,134 international tourists in the year 2014. Also, by following the chart numbers we can notice that the peak was reached in 2005 when 45,731 international tourists were registered henceforward this followed a sustained decrement to reach the low values of 2014. This drop can be accounted by the internal conflicts image related to the northern part of Ethiopia which altered drastically the perception and desire of international tourists to visit the tourist destination of Lake Tana, which although safe was associated with the image of the entire country, a perception phenomenon called in the specialized literature “guilt by association” (Weaver and Lawton, 2010). The domestic tourist figures indicate the advent and systematic increment of the domestic tourist market from 24,650 domestic tourists recorded in 1990 to 435,182 domestic tourists recorded in 2014, thus indicating an internal tourist market in full propensity.

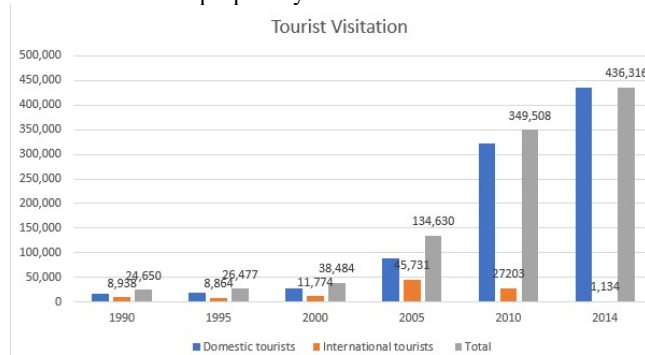


Fig 4. Visitation at Lake Tana and surroundings during 1990-2014

3. RESULTS AND DISCUSSIONS

Attractions add appeal to a destination and serve as catalysts for a tourist visit. Attractions are shared with the resident population, and they are the main target of a recreational or educational visit (Fletcher et al., 2018). They represent motivational drivers to a destination and feature the potentialities of a destination in terms of “what to see and do”. Most inventoried attractions from the southern part of Lake Tana relate to both natural and man-made attractions with a higher share of the man-made attractions of 57% referring to monasteries and churches and the natural attractions with a share of 38% referring to islands and a peninsula with a share of 5% (fig 5).

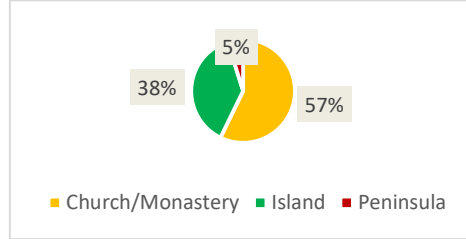


Fig 5. Weight of Types of Attractions from the Southern Area of Lake Tana

Most man-made attractions from the study area relate to religious sites, as it is a known fact that Ethiopia is a very religious nation, being among the few mainly Orthodox countries from Africa. Therefore, the inventoried religious attractions amount to twelve churches and monasteries spread on the south such as the churches of Debre Mariyam, Gebriel and Eyesus. These religious sites date from the 14th century where artefacts can be seen such as old manuscripts, silver and bronze crowns, religious parchment books, bronze crosses, clothes, candlesticks and wood basket (Ageligil) made from wood, clay drums along with a storehouse built by Atse Fasil. They hold unique artefacts as in the case of Debre Mariyam which owns one of the oldest manuscripts, the Tetra Gospel which dates from 1360-1380 (Abraham Marye et al., 2011). Different craftsmen produce souvenirs under the eye of the passer by, as this painter who paints holy images on goat skin in the Zegie Penninsula (fig 6). In the south-eastern part can be found the monasteries of Micheal and Medhanealem, among which the latter is a very important place for pilgrims for the religious artifacts it hosts. The churches belonging to the south-western part of Lake Tana are found on the Zegie Peninsula and amount to seven such attractions. Their names are Debre Silasie, Ura Kidane Mihret, Mehal Zegie Giorgis, Betre Mariam, Azwa Mariam, Yiganda Tekle Haimanot and Forie Mariam. These churches feature religious items dating back to the 13th century and the churches are of outstanding beauty with external mural Orthodox paintings as in the case of Ura Kidane Mihret, a particularity of Ethiopia in general being the round shape of churches (fig. 7 and 8).



Fig 6. Local painter from Zegie peninsula painting with natural colors from herbs



Fig 7. Round church of Ura Kidane Mihret monastery



Fig 8. Natural color external mural painting of Ura Kidane Mihret monastery from the 13th century

The livelihood of the local residents relates to sheep herding, trade (souvenir selling, coffee, construction of papyrus reed boats) and clothing. Men's clothes are called Kabba, Bernos and other clothes made of shemma and women's clothes are called Yabasha Qemis. The Qemis is decorated by flower, cross and other designs tailored by variety-colored trades surrounding the neck and descending down to the tip of the Qemis by the front side. The architecture of the house is very beautiful, using sustainable materials such as wood, stone, grass, mud and straws and is called Esate Kella (Marye et al., 2011). Less intrusive agricultural practices such as hoe farming takes place in the southern area of Lake Tana.

Natural attractions relate to vegetation animal, bird and fish species. In terms of vegetation, the Zegie peninsula hosts coffee plants, papyrus beds from which the "Tankuwa" local boats are made. Zegie Peninsula hosts the largest remnant forest covering an area of 1238.8 hectares with an altitudinal range of 1780 masl at the periphery of the lake with a rich biodiversity. In terms of vegetation there is a mosaic and undifferentiated vegetation which promotes species richness and diversity. Its vegetation is considered as transition type deciduous to humid ever green forest classified as upland dry semi deciduous to ever green forest with a special sub type of undifferentiated Afromontane Forest. The flat land, particularly where water lies in the rainy season, is grassland with a mixture of palatable indigenous grasses and legumes. The marshes support a variety of grasses, sedges and climbers. The mixed forests comprise figs, *Syzygium guineense*, *Cordia africana*, *Albizia* spp., *Diospros mespiliformis*, *Juniperus procera*, *Ficus* spp. *Millettia ferruginea*, *Ehretia cymosa*. *Albizia schimperiana*, *Croton macrostachyus*, *Celtis Africana*, *Ritchiea albersii* and rare species of *Prunus Africana* and *Podocarpus falcatus* and the endemic *Millettia ferruginea* as common trees, a well-developed shrub layer and woody climbers. Reed beds are common such as *Typha*, *Echinochloa* spp. Grasses and *Polygonum* as aquatic plants, including *Nymphaea coerulea* (Marye et al., 2011).

Mammals include the black and white Columbus monkeys, hippos at the edges of Lake Tana and in the Blue Nile River, the latter being a gem for a tourist who wants to see it in its natural habitat but for the residents a threat to cultivated crops, destroying fences, earth canals and overthrowing boats. In terms of avifauna over 300 bird species

have been inventoried in and around Lake Tana (Abraham Marye et al., 2011). The best viewpoints for birdwatching from southern Lake Tana are in the Zegie peninsula and Rema Island. For instance Debre Mariam island alone hosts such birds as: Saddle billed Stork, Sandpipers, Cattle Egrets, Sacred Ibises, Egyptian Geese, Garganey and Crowned Cranes (Abraham Marye et al., 2011). The 15 endemic fish species are Labeo barbus, 3 small *barbus spp*, 4 Garra spp, 1 beso sp. Nile Tilapia and 1 African Catfish.

Although mainly in islands and in the peninsula of southern Tana agriculture and fishing is made in a sustainable way, of subsistence, manual agriculture by plow, thus in harmony with nature. Especially in the case of the Zegie old age forest dwellers who sustainably gather fruit such as lemon and oranges, harvest coffee and grow sheep and chicken. Nonetheless the overexpansion of the estimated 300,000 population Bahir Dar City around the lake poses problems related to overgrazing, expansion of farmland, development of settlements, deforestation hunting and overfishing for commercial purposes, referring to the latter especially for the 15 large labeo barbus species (Marye et al., 2011).

Natural attractions represent the primary focus for visitation and their quality is of utmost importance for the visit experience. Traditionally water-based resources, coastlines and lakes still top tourists' preferences and the southern area of Lake Tana (fig 9 and 10) abounds in resources.



Fig 9. Lake Tana island



Fig 10. Southern shoreline of Lake Tana

The natural attractions of the southern area relate to nine islands and islets and one peninsula named or Zegie. Thus the three islands from the south of Lake Tana are called Debre Mariam, Kibran, Entos; those five islets from the south-eastern part are called Bet Menzo, Genjaba 1, Genjaba 2, Rema 1, Rema 2; the two islands from south-western area are called Gontergie 1 and Gontergie 2. These islands are densely forested, home for a wide range of birds, animal and plant species, thus making them very good spots for fishing (i.e. Bet Menzo), bird (i.e. Gontergie 1, Gontergie 2, Debre Mariam, Entos, etc) and animal watching like the hippo colony from the Debre Mariam island or the White Colobus Monkeys (*Colobus guereza*) from Zegie. The peninsula of Zegie also hosts coffee plantations. Given that land for agriculture and animal rearing are available in the Zegie Peninsula governments need to make sure that biodiversity and unspoilt nature provide social net benefits and a balance is reached between land exploitation and preservation. In terms of access to the islands transport is made exclusively by boats and to the Zegie Peninsula it is made by both boat and vehicle.

The most anthropized destination is the Zegie peninsula from the study area given the fact that it hosts a community of 6400 persons. Its average altitude ranges between 1770-1960 meters above mean sea level. Its total area is 1304.31 hectares, and from its total area, 1214.91 hectares are covered by mixed agriculture (forest and coffee) and 62.4 hectares are covered by artificial forest and bushes. Annual rainfall is 1160 mm and its annual maximum and minimum temperature is 26.7 C and 11.78 C respectively (ANRS, Environmental, Protection and land administration Authority, 1996). The services of English-speaking local guides are also available in this peninsula.

A trip to the islands of Lake Tana involves a mixed type of an authentic touristic experience through the encounter with the local craftsmen such the “ecological” icon painters who use natural herb colors, the basket weavers, local coffee farmers, priests and monks like descended from biblical times, monasteries and churches which display valuable artefacts for the history and religion of Ethiopia across centuries, a welcoming tea ceremony (fig 11) which all add extra flavor to the whole cultural and leisure experience to Lake Tana which can only produce that catharsis effect of well-being and communion over any common traveller.

A further sustainable principle that can have a positive impact for tourism is the fact that the Lake Tana islands can only be accessed by boat thus preventing pollution and disturbance of fauna and flora. Only the Zegie peninsula can be accessed by car too. Thus within the study area a percentage of 60% (or 12 attractions which are on the peninsula) of the attractions can be reached by boat and vehicle whereas 40% (or 8 attractions which are on the islands) can be reached only by boat (fig 12).



Fig 11. Coffee ceremony of Zegie Peninsula

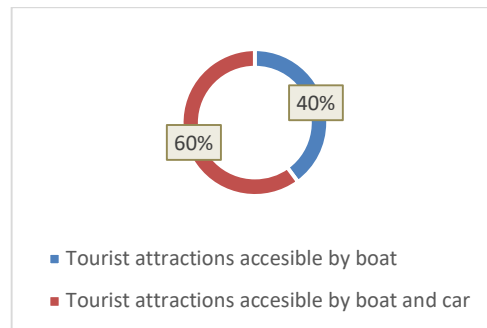


Fig. 12. Accessibility to attractions

The question of the preservation of these artefacts comes to the forefront, given their uniqueness, authenticity and vulnerability eventually given that they are items subjected to the passing of time such as glassware, tapestry, sculptures, buildings colored in natural color paintings which are prone to damage or erosion. The management and preservation of these artefacts is a key challenge for the governments and local community as they need to be maintained in a good state, intact from one generation to another. In some cases Lake Tana artefacts are not properly kept which pose a threat to their future integrity. Local and public ownership is an important issue to consider when managing these vulnerable resources and the role of public and versus the public sector in the attractions' investment and management has become an important issue in order to balance the sometimes-conflicting needs of different user groups and to increase the quality of the attraction experience for all involved parties (Wanhill and Fyall, 2018).

The tourist experience is also influenced for the better or worse according to the ancillary services provided by the destination such as accommodation and food. Tourists need a location where to rest and revive during their journey. This sector supply can be extremely heterogeneous and in the case of the study area referring to the southern part

of Lake Tana, which falls under Bahir Dar city administration the following types of accommodation structures have been inventoried on a 33 km range radius from lake Tana's shoreline: star hotels, resorts and lodges and budget hotels amounting to 70 structures. At a global scale, hotels hold the highest share of the accommodation supply, and this trend also applies in the case of the study area. The largest share of the supply is occupied by the budget hotels with 51%, the star hotels occupy 40% of the share and the resorts and lodges take 9% of the share (fig 13). Budget hotels emerge as a response to the changing customer needs and expectations (Fyall, 2018) and their importance can be dated from the 1980 in the case of the study area, providing lower quality services and low-cost accommodation for unpretentious tourists. The star hotels following shortly behind on the other hand show an increasing need of higher quality services and standards. Resorts are found at the opposite end of the budget hotels and provide extra services besides accommodation, such as pools for bathing, conference halls, spa services, etc. From analyzing the year that the different structures of accommodation started to function it resulted that the boom interval was during 2007-2014 when most accommodation units started to function, amounting to 26 structures with a sudden decrement in the next interval of 2014-2021 when only a new structure started its business (fig 14). Nonetheless until 2014 there has been a gradual increment starting from the 1980s as the graph clearly indicates.

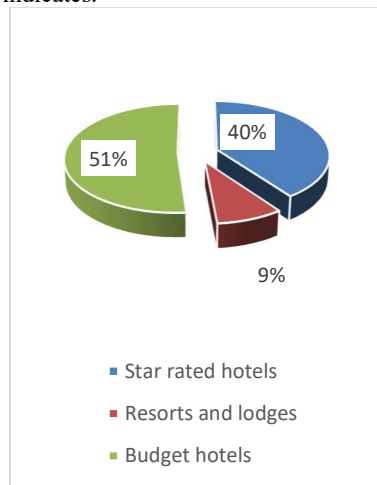


Fig 13. Types of accommodation structures

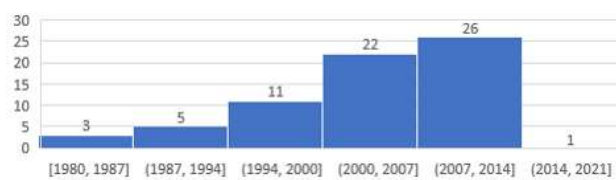


Fig 14. The accommodation structures starting year of operation

The challenge of the higher priced and star accommodation providers will be to ensure a clear market differentiation between their offer and that of the budget hotels. There is a market who is willing to pay considerably more for individualized services provided by star hotels. At the level of Europe one can encounter basic accommodation provided by budget hotels branded under names such as Formule1, Travelodge, Campanile which tend to decrease the gap between star and budget hotels with the provision of hot beverage equipment, Internet and satellite TV services which basically became the norm for any range of hotel. Nonetheless the difference between the two can be driven by their marketing strategy, an extremely important issue being that of promotion as budget hotels invest less in this aspect versus star and graded hotels.

In the southern part of Lake Tana belonging to Bahir Dar administration seventy accommodation structures were inventoried according to the data provided by the Bahir Dar University. The accommodation search engines such as Booking.com barely features 11 properties in Bahir Dar mainly featuring three and four-stars hotels, two backpackers lodge and one B&B whereas TripAdvisor features over eighty heterogeneous properties in Bahir Dar ranging from star hotels, ungraded hotels, camping sites, guest houses to very traditional eco-friendly lodges (i.e. Blue Nile Camping).

In a UNESCO Biosphere Reserve such as that of Lake Tana pollution and environmental degradation associated to accommodation obviously pose a threat for this water resource. At the beginning of the paper environmental issues associated to the lake were mentioned as a result of the human impact, which perturbs the lake's ecosystem balance. Certain world tourist destinations have activated all sorts of water conservation measures such as for instance the chain hotel Holliday Inn in Phuket which has its own water treatment plant and uses the treated wastewater in the hotel's garden and leisure facilities (Fyall, 2018). Issues such as water conservation, energy use, waste disposal need to be properly addressed for a sustainable functioning of the accommodation industry.

Besides accommodation, the food and beverage sectors play an important role in the overall tourist experience. Therefore food and beverage supply was also analyzed for the current study through an inventory of the restaurants and cafes from the southern part of Lake Tana belonging to Bahir Dar administration. Outlets can include public and private sector establishments and can vary from small, independently owned units to large, multi-national or transnational corporations (Davis et al., 2018). In the case of Bahir Dar there are many traditional food serving restaurants located on the Lake shore (fig.15)

such as *ingera* which serves both as a kind of spongy sour flatbread and an eating utensil as well as locally fished fish.



Fig 15. Restaurant in Bahir Dar on Lake Tana seashore

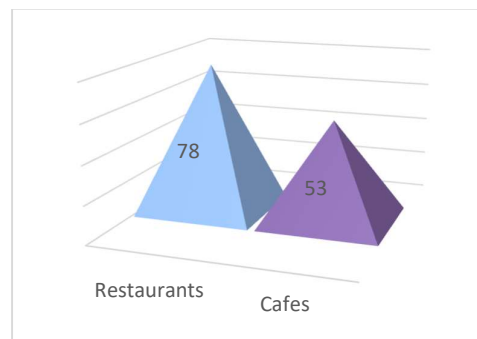


Fig 16. Food and beverage supply. Cafes and Restaurants

The food and beverage supply from the southern part of Lake Tana and pertaining to Bahir Dar administration counts 133 establishments among which 78 units or 60% belong to restaurants and 53 units or 40% belong to cafes (fig 16). As part of the tourist experience, the meal can leave a memorable imprint in the memory of the traveller when in a destination. Nonetheless providers need to understand the importance of offering the right services in this sector as return customers rely especially on the quality services they are provided with in line to their preferences. Therefore the service facility should meet the customer's expectations. Market segmentation plays a key role into providing the right product and service, in this sense it is important to know who the customers are and which are their preferences. Around the world restaurants can be classified according to certain criteria such as: local or national cuisine, ingredient dominated focusing on a single dominant ingredient, theme, healthy options especially for the vegan and

vegetarian customers, cooking style or chef centric (Davis, 2018). The right service is provided when the market has been studied and adjusted to its needs.

By a search on TripAdvisor the Bahir Dar restaurants amount to 16 units versus a much wider supply as showed by the inventory work and provided by the Bahir Dar University dataset. Therefore this supply is less advertised on this tourism services' search engine versus the existing supply. Cafes are also predominant around Lake Tana with a share of 40%.

3.1. TOURISM AREA LIFE CYCLE OF SOUTHERN LAKE TANA

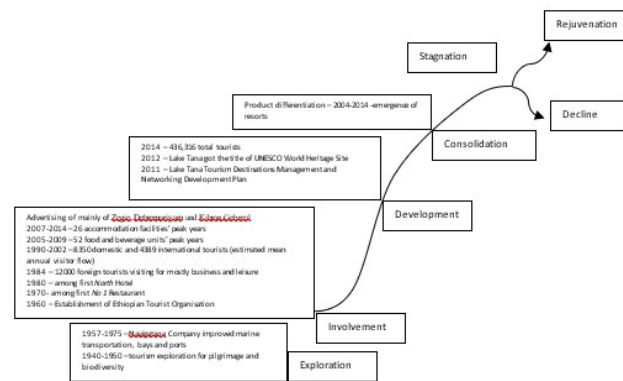


Fig 17. Southern Lake Tana Tourism Area Life Cycle Analysis

The tourism area life cycle analysis (Butler, 2006) led to the establishment of the tourism development stage in the southern area of Lake Tana based on available data referring both to supply and demand (fig 17). In this prospect the accommodation and food and beverage supply were interpreted and used as well as the tourism demand. The *exploration stage* of tourism at Lake Tana starts with an entrepreneur from Gondar who settled a small pub called Tij Bet. Further on it continued with the post Italian occupation when during the 1957-1975 the *Nagigatana* Company improved access through boats at important religious and biodiversity resources found in the islands of Lake Tana and its surrounding areas, thus the port of Zegie was built in 1957, yet during the mid-1960 and 1970 the lack of peace and stability around Lake Tana affected tourism activity drastically so that from 1967 to 1977, during the Derg period tourism visitation was almost inexistant, only reviving after 1977 (Getahun and Yeshanew, 2016). At this stage we can encounter individual tourists with no specific facilities provided for tourists also referred to allocentrics or spontaneous and adventurous tourists in search of remote and exotic places. The *involvement stage* occurred after the 1970s along with the first facilities for accommodation and food and beverage recorded in 1980 and 1970 respectively such as Ghion and Tana hotels. In 1984 already 12000 foreign tourists could be counted at Lake Tana visiting for mostly business and leisure (Getahun and

Yeshanew, 2016). In 2009 there were 52 food and beverage units and 26 accommodation facilities in 2014. The demand side was growing steadily so that from 1990 to 2002 an estimated mean annual number of tourists could be settled of 8350 domestic and 4389 international tourists, thus summing 12739 tourists over a twelve-year period. Advertising mostly occurs for the religious and historical heritages of Zegie peninsula attractions, Debremariyam and Kibran Gebreal islands so that an initial market area of visitors is defined at about 12739 tourists over a twelve-year period (i.e. from 1990 to 2002) to the entire Lake Tana. The demand splits into 8350 domestic and 4389 international tourists which is an estimated mean annual number of tourists as provided by the study of Marye et al. (2011). The *development stage* peaked in 2012 when Lake Tana was granted the title of a UNESCO heritage site and thus gained a lot of international visibility. The preceding year study of an interdisciplinary corpus of experts added value to geography and tourism studies related to Lake Tana entitled Lake Tana Tourism Destinations Management and Networking Development Plan whose purpose was to lay out the vision and philosophy for sustainable tourism development and management activities of Lake Tana so that it can serve as a guide and facilitate conservation, management and utilization document of the tourism resources (Marye et al., 2011). At this stage a well-defined tourist market area is shaped with 436,316 total tourists, of which merely 1,134 international tourists, which define an internal tourist market in full development. The *consolidation stage* started with the emergence of first modern all-inclusive resorts appeared after the 2000s, namely the Blue Nile Resort in 2004, the Grand resort and spa in 2007 and the Sky resort in 2014. At this stage natural and cultural attractions are developed and marketed specifically and environmental and conservation policies for Lake Tana are implemented.

CONCLUSIONS

The results related to the in-depth analysis of the tourist supply from the southern area of Lake Tana indicates that the attractions' supply concentrated in southern part in a percentage of 28,3% versus its central and northern counterpart (fig 3), so analyzed from the angle of the natural and man-made attractions the southern Lake Tana area holds an important share.

The southern area of Lake Tana is also well equipped for tourism facilities with a preponderance of the food and beverage sector which prevails with 59% of the share, followed by accommodation with a share of 32% (fig 18). This indicates a predominance of these services' sector summing together 91% of the share, the rest of 9% being represented by the man-made (i.e. 5%) and natural attractions (i.e. 4%), which indicates a much higher coverage of facilities versus the attractions' supply. The man-made supply relates mainly to religious sites and handicrafts whereas the natural supply provides unique landscapes on the islets of Lake Tana relating to wild flora and fauna such as hippo colonies in their natural setting, coffee and avocado plantations, etc.

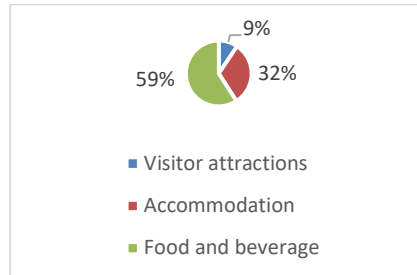


Fig 18. The share of attractions and facilities in the southern area of Lake Tana

From the perspective of the supply side which was the focus of the current paper it is important for the service providers to consider striking a balance between the supply and demand. By this research we found which is the supply around an important world-scale lacustrine reserve as a baseline for future potential studies following certain patterns and target markets. In the case of such a continuation an interesting approach would be to see if the supply meets the demand in the studied area. The supply side is faced with important maintenance costs, fixed costs as taxes, heating costs, permanent employees' salaries etc or variable costs (seasonal employees, advertising, etc) (Weaver and Lawton, 2014). The challenge of entrepreneurs in tourism services related to Lake Tana is to narrow the gap between supply and demand, since according to this paper's results supply is obviously in abundance especially related to the accommodation and food and services facilities and accordingly to narrow it as much as possible.

Referring to attractions' accessibility, it came out that all mainland-based attractions can be reached by vehicles and all water-based attractions can be reached by boat exclusively. The islands and peninsulas are reachable by boat as well as the religious attractions found within. Existing boats can transport up to 200 people on distances ranging from 16 to 100 km on Lake Tana.

Thus, we can state that the southern part of Lake Tana features the necessary supply for tourism to occur properly in the study area, nonetheless with a big gap between Lake Tana's tourist attractions on one side and the tourist facilities on the other side (i.e. the latter being prevalent). This gap could be narrowed by complementing the southern Lake Tana's attractions' supply with the nearby attractions belonging to Bahir Dar City to keep the tourist for a longer period around this UNESCO heritage destination.

The tourism area life cycle referring to Lake Tana reached the development stage heading towards an incipient consolidation stage through the product differentiation into new fully fledged resorts.

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