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Capacity and levels of utilization of tourism potentials of Yankari and Cross River National Parks – implications for optimistic ecotourism development in Nigeria

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Abstract

Development of sustainable tourism constitutes an essential component of Nigeria's agenda for attaining sustainable development by the year 2020. The level of utilization of existing tourism capacities of national parks can affect the attainment of this goal. The present study examined capacity and levels of utilization of tourism potentials of Yankari National Park (YNP) and Cross River National Park (CRNP). Mean visitor holding capacity (MVHC) of each park over the period 2002 – 2006 was determined. Further, mean visitation of the parks during the study period was obtained from records of tourism visitation of the parks. From these, capacity utilizations were determined. Cross sectional survey of levels of utilization of attractions in each park was conducted using questionnaire. YNP recorded 49.3% capacity utilization; while CRNP had 3.5%. Both parks witnessed varying levels of utilization of their existing potentials. In YNP, game viewing and warm spring bathing had high levels of utilization (91% and 64% respectively). Old iron smelting sites and Dukkey Wells recorded low levels of utilization (1.0% each). In CRNP, rainforest experience and cave adventure had high utilization levels (93.3% and 68.3% respectively). Neither park had optimum use of its potentials. Updating of parks' tourism infrastructure and creation of better awareness of the parks as tourist destinations were recommended for beefing up capacity and levels of utilization of the parks.

Key Words: Capacity Utilization, Levels of Utilization, Tourism Potentials, Yankari National Park, Cross River National Park, Tourism development, Nigeria.

Introduction

National parks possess ample potentials for recreation and eco-tourism (Eltringham, 1984; Ayodele and Falade, 1993; National Parks Service (NPS), 2004; Obua, 1997; Lameed, 1999). National parks, preserving tourism attractions such as wildlife, landscape, scenic sites, waterfalls and geomorphologic features provide the potential for a wide range of tourism activities which include game viewing, mountain climbing, nature appreciation of flora and landscape, warm spring bathing, sport fishing, boating, wilderness experience, birding, nature trail, nature refuge, hiking, excursion, and camping (Ozo, 1993; Ayodele and Falade, 1993; Obua, 1997, Lameed, 1999). Tourism potentials form the attractions which motivate tourism and lure tourists to embark on a tour of the destination (Tuba, 1993; Oriero, 1993, Ngoka, 2007).

However, the existence of tourism attractions in a national park is one thing, their optimum utilization is another. This is because vast potentials may lie un-utilized in many national parks. Eltringham (1984) noted that only few national parks in Africa are able to generate enough funds from tourism to meet recurrent operational costs since many of them operate eco-tourism at a loss due to underutilization of existing potentials. Factors which ordinarily affect the extent of utilization of national parks include the environmental conditions; distance from large city(ies); publicity/awareness of park's tourism potentials; length of tourism use/ park's reputation; accessibility; state of park's facilities; local hospitality, and environmental impact (Eltringham, 1984; Holloway, 2006; Ngoka, 2007).

Yet, some tourism attractions tend to attract the greater interest and attention of tourists than others even within the same destination. This phenomenon can affect ratings of individual attractions, and by extension destinations by tourists (Eltringham, 1984; Ngoka, 2007). Elthringham (1984) noted a consistent obsession with lions by tourists; to the extent that in the Serengeti and Ambroseli National Parks in Kenya, visitors spent over 45 per cent of viewing time looking at lions, or cheetah. According to the author, the situation is as though many visitors do little else but look for or at lions. By contrast, only 12 per cent of viewing time is spent on elephants even though elephants are one of the more easily seen species. Seven per cent of viewing time is spent on rhinos. Most other species in the parks attract very little attention from the average visitor. Often, visitors assess the success of a tour by the number of lions seen (Elthringham, 1984). Ngoka (2007), working in YNP, also reported high value for lions and elephants in visitor interest. Thus, some attractions appear to have higher tourism appeal and value than others.Hence, Honey (2005) estimated that (in performing destinations) one lion is worth $7,000 per year in income from tourism, and an elephant herd is valued at $610,000 annually. This suggests that the types of attractions existing in a national park can affect its rating by tourists, its level of utilization, and ultimately its profitability and overall economic performance.

Nigeria's national development plan recognises the development of sustainable tourism as an essential aspect of national development. The Vision 2010 Committee set up by the Federal Government of Nigeria to, in line with the UN Millennium Development Goals (MDGs), articulate a long-term sectoral economic development programme adopted the development of sustainable tourism as an essential component of Nigeria's agenda for attaining sustainable development (Minstry of National Planning 2010). Nigeria aspires to diversify her economy away from the oil sector which currently accounts for over 95% of foreign exchange earnings and 80% of national budget revenues (World Bank, 2011) by investing in the tourism sector.

Tourism is expected to play sustantial role in the country's economy in the areas of employment creation, generation of foreign exchange, education, environmental conservation and attraction of investors. Considering the international significance of natural resource conservation to sustainable development, the establishment of national parks was adopted as a major component of the national strategy for achieving national developmental objectives. The utilization of existing capacities is critical to the performance of the national parks as contrubutors to the attainment of Nigeria's tourism development agenda which aims at making tourism a key player in the national economy and a major sector of sustainable development. Eltringham (1984) noted that national parks play a critical role in Africa's tourism and that most of the tourism to the continent can be attributed to national parks harbouring substantial wildlife populations.

Nigerian national parks are believed to be sub-optimally utilised for tourism inspite of abundant pristine attractions within them (Oriero (1993), Lameed, 1999; Nigeria Tourism Develoment Corporation (NTDC), 2001; National Park Service, 2005). Factors such as inadequte policy framework lack of adequate statistical data on the tourism within the parks, poor tourism infrastructure, facilities and services and insecurity have been blamed for the the low utilization of existing capacities (Tumba, 1993; Lameed, 1999;). Also, Eltringham (1984) reported that dense vegetation hinders tourists from sighting animals (a key attraction to African national parks) in West African national parks (the location of YNP and CRNP); a situation that rendered the parks less competitive to East African national parks where animals were more numerous and more easily sighted.

Eltringham (1984) had identified underutilization of existing potentials as a reason for low economic performance of many African national parks – with resultant inability to contribute meaningfully to the economies of their host communities or countries. Perhaps , gaining an insight into the utilization levels of specific parks might provide some clues toward addressing the problem of their low capacity utilization as reported.

The present study examines the extents of capacity utilization and levels of utilization of the attractions of two of Nigeria's eight national parks - YNP and CRNP over a five – year period (2002 – 2006). Utilization was taken to mean tourism visits to the destinations. Each visitation was taken as a measure and unit of utilization. Capacity utilization referred to the proportion of installed annual visitor accommodation capacity of each park that was sold during the study period. Level of utilization was taken to represent the proportion of the tourists who visited each tourism attraction of the parks. Capacity and levels of utilization could serve to determine the tourism value of individual attractions, and for predicting the performance potentials of individual parks. Effort was made to determine the effect(s) of location (ecological setting) on the parks' capacity utilization and levels of tourism use of individual attractions.

The Study Areas

Yankari and Cross River National Parks are both located in Nigeria but in different ecological zones of the country. Yankari National Park covers an area of 2,250.10 km^2. The park lies between latitude 9^0 45'N and longitude 10^0 30'E within the Guinea savannah vegetation zone in Bauchi State of Nigeria. The YNP was designated Yankari Game Reserve in 1955 and was opened to the public for tourism use in 1962 (Jia, 1971). The Reserve was upgraded to the status of a national park in 1991 (Nigerian Tourism Development Corporation, NTDC 2001). It is Nigeria's premier conservation site which serves as a destination for eco-tourism. According to the National Park Service (NPS, 2000; NTDC, 2001), the park is endowed with historic sites and monuments such as the intricately partitioned catacomb of 132 ancient wells interconnected by shaft and dug into sandstone known as Dukkey Wells. They were used for storing rain water for domestic and other uses. There is also a range of pre-historic caves known as Marshall Caves which served as defensive positions during the era of inter-tribal wars. There are also the Shaushau Ampara ancient iron smelting sites where farm, hunting and war implements were fabricated.

The discovery of these sites has enhanced the the park's value as a heritage site (National Parks Board, 1995). The park also has 3 warm springs namely Wikki, Gwano, and the Mawulgo. Of these, only Wikki has been developed for recreational use, while plans are being made to develop and open up the others to the public. The park is reputed for its wildlife. The original

inhabitants of the area were hunters; who had to be relocated to establishment the reserve. Indeed, Y. Yohana (personal communication, May 18, 2005) explained that the word 'yankari' means 'come , let's go hunting' in the native language. The park affords exceptional opportunities for the visitor to observe a wide variety of game species in their natural habitat. Safari on truck is a common feature. The most frequently sighted species include elephants (*loxodonta africana*), buffalo (*Synencerus cafe*), baboon (*papio anubis*), hippopotamus (*hippopotamus amphibius*), lion (*panthera leo*) and the leopard (*actnonyx jubatus*). There is also a spectacular profusion of bird life, as 52 species of birds have been recorded, added to many reptiles. The park has 110 visitor chalets at the base camp at Wikki, a wildlife meseum, a conference hall, a standard restuarant, indoor and outdoor sporting facilities including badminton, table tennis and squash.

The Cross River National Park is located beetween latitude 6^0 05' N and longitude 9^0 02' E in Cross River State of Nigeria. It covers an area of 4,000km^2 in the equatorial rainforest South - eastern corner of Nigeria. Lying South-east of the loop of the Cross River, it extends along the Cameroon border. The Park is composed of two divisions - the Oban Division which lies southwards and named after the Oban Hills, and the Okwangwo Division lying northwards (Obot, 1996). The Oban Division, composed of the former Urban Forest Reserve covers an area of 3000km^2, and directly borders the Koroup National Park in the Camerouns. The Okwangwo Division was created from two pre-existing forest reserves of Okwangwo and Boshi. This division occupies 1000km^2. It is linked in the West to the Takamanda Forest Reserve in the Republic of Cameroun; via the Mbe Mountains and the Afi Forest Reserve. The CRNP is the largest protected forest in the moist forest zone of Nigeria; a region where greater than 90% of the original forest has already been lost or degraded. As such, it represents one of Nigeria's most important natural resource assets, supporting fisheries; protecting watersheds and climatic stability. It preserves genetic resources and provides opportunities for tourism (IUCN, 1988). The NPB (1995) noted that the park is home to some 78% of the primate species recorded in Nigeria, notable among which are the lowland gorilla (*gorilla gorilla delhi*), drill monkey (*mandrillus leucophacus*), the only habitat of the golden poto (*actocebus calabarensis*), and the chimpanzee (*mantroglodytes spp*); all highly endangered species. There is also the forest elephant (*loxodonta africana cyclotis*), which migrates between the park and the Koroup National Park in Cameroun (NPB, 1995).

One major reason for constituting the CRNP in 1991 is tourism. Great opportunities lie for capturing revenue through encouragement of tourism in the park (Honourable Minister of State for Agriculture, personal communication, March 19, 1990). Lameed (1999) studied the eco-tourism potentials of the park and reported that the park has great potentials to offer to visitors a protected rainforest larger and more accessible than most others in Africa. Ngoka (2007) also surveyed the tourism potentials of the park and corroborated that the park harbours great potentials for eco-tourism development. Already, the Park's management has developed a research cum tourism station in Kanyang, Okwangwo Divison, designed to conduct scientific research particularly on the lowland gorilla, and generally to promote knowledge about the park. Ranger stations have been established at strategic positions in the park to protect the park and tourists alike. There exist 41km of park tracks (nature trails) constructed to enhance park viewing. The Butatong Base Camp was initiated and developed by the EU/WWF/Okwangwo project, and contains several office facilities, staff quarters, visitor accommodation, and recreational facilities. The camp also boasts of one of the best-laid mature trails and botanic

garden. The trail is good for walking through the rainforest ecosystem. The park's head office is located at Akamkpa, 30km outside Calabar. It contains the General Manager's residence, some staff houses, canteen, a well-equipped community centre, and sports facilities.

Methodology

Mean visitor holding capacity (MVHC) of each park through the study period was determined. For this purpose, the total installed accommodation capacities of each park (TIAC) through the study period; the total number of days each park opened to tourists (TDPO) over the study period, and the average length stay by tourists in days (ALSD) were obtained. From these, the mean visitor holding capacity (MVHC) of each park over the study period was derived using the model:

$$MVHC = \frac{TIAC \times TDPO}{ALSD}$$

Where:

MVHC = Mean visitor holding capacity} in study period
TIAC = Total installed accommodation capacity} in study period
TDPO = Total number of days park opened to tourists} in study period
ALSD = Average length of stay in days} in study period
The MVHC formed the basis for determining capacity utilization (CU).

Again, records of tourism visitation of each park were examined to extract information on total visitations of the parks in study period (TVP). This was used to determine capacity utilization of each park thus:

$$CU = \frac{TVP}{MVHC} \times \frac{100}{1}$$

Two observation checklists were respectively used to extract information from park officials about holding capacities and records of tourism visitation of the parks.

Further, cross sectional survey of levels of utilization of respective attractions were conducted in each park using questionnaire. In YNP, the population for the study comprised 722 tourists; while the sample consisted of 90 respondents. In CRNP, the population comprised 136 tourists. The sample was made up of 60 respondents met at the 2 sectors 3 base stations of the park. The sectors included the Oban sector, and the Okwangwo sector. The base stations covered were the Gorilla Station at Mbe Mountain; the Drill Rehabilitation and Breeding Centre at Buanchor, and the Becheve Nature Reserve on the Obudu Plateau. Tourists used in each park were accessibility/convenience samples used by virtue of their presence in the parks during the researchers' 3–week study of each park, and their willingness to complete the questionnaire. According to Woodward and Francis (1988) accessibility/convenience sampling frame is used in research when it is not possible to reach the entire population, wherefore only the most convenient sampling units are used. Tourists usually leave the park after their tour. It was thus not possible to reach the entire population who visited and left at different times for selection of a random sample. Questionnaire was administered to tourists in each park to elicit information on the tourism attractions visited by each respondent. This was used to determine levels of utilization of the various potentials of the parks. A copy of the questionnaire was issued to each tourist upon completion of his/her tour. Each tourist completed same and returned it to the researchers.The researchers carried out the administration of questionnaires and collection of data on records of past tourism use personally. All 90 copies of questionnaire issued to respondents in Y N P and 60 in C R N P were returned. Collection of this data took place simultaneously in both parks to rule out variations that may arise from

seasonality in volume of visitation often common in the destinations. Percentages were used to show capacity utilization and levels of utilization.

Findings

Table 1 shows that total visitation of Y NP for tourism during the period 2002-2006 was 26,683.6, as against the mean installed visitor holding capacity (MVHC) of 54,159. This represents a mean capacity utilization of 49.3%. There was disparity in levels of utilization of the various tourism attractions of the park to the effect that some attractions were visited by more tourists than others. Table 2 shows that safari (game viewing) was the most utilized attraction, as 91% of the respondents included it in their itineraries. This was followed by warm spring bathing (64%). Old iron smelting sites and dukkey wells were least visited by the tourists (1.0% each). In CRNP, total utilization was 2,019 out of the 19,545 MVHC of the park, representing 3.5% capacity utilization. Disparity also existed in the levels of utilization of the tourism attractions of CRNP. Rain forest experience had the highest level of utilization in the park (93.3%); while weather and Becheve Nature Reserve had low levels of utilization (20% and 30% respectively).
In both destinations, utilization fell far short of installed capacities. Disparities existed in both capacity utilization and levels of utilization.

Discussion

The study revealed that 49.3% capacity utilization was made of the tourism potentials of YNP between 2002 and 2006; while that for CRNP in 2002, 2003 and 2006 was 3.5%. This agrees with earlier speculations by Oriero (1993), Lameed, (1999), NTDC (2001) and NPS (2005) of low awareness of conservation areas as tourism destinations in Nigeria and, specifically low utilization of national parks for tourism despite the abundance of tourism potentials within them. This may go to explain the markedly low capacity utilization observed in CRNP whose potentials may have been less known to potential tourists relative to YNP. While YNP has been a game reserve demarcated since 1955 primarily for tourism (NTDC, 1991), CRNP is a recent derivative from three forest reserves which were, until recently, protected essentially for conservation and protection of the endemic flora species. This would have also affected the pace and level of development of the two parks for tourism. In a study of tourism utilization of YNP and CRNP, Ngoka (2007) reported that awareness of the parks' tourism potentials was a significant determinant of utilization. In the same study, YNP was better known as a tourism destination than CRNP. Thus, differences in the levels of awareness of the parks as travel destinations among potential tourists may have affected choice of destination by tourists; a situation that may well have also affected capacity utilization of the parks.

Further, the environmental conditions may have played a role in the disparity observed in capacity utilization in this study. Eltringham (1984) had noted that wildlife constitutes the major attraction to Sub-Saharan national parks and that lions and elephants attract more tourists than other species (Honey, 2005). Although CRNP contains substantial wildlife populations, they might not be the type that many tourists were eager to see, and the dense vegetation of CRNP renders game viewing an unlikely attraction to the park. Lions are not known to exist in CRNP; while elephants, though resdent in the park can more readily be sited in YNP than in CRNP due to higher density of the species' population in the former, and more importantly, the greater ease of sighting game in savannah relative to rainforest setting (compare figs. 1 (a) and (b). Also, many rain forest animals are nocturnal (Eltringham, 1984). As such they can

hardly attract the average tourist. Since greater chance of seeing wildlife exists in YNP in comparison with CRNP, one would expect YNP to receive more tourist than CRNP. Also, the characteristic rugged terrain of CRNP with intimidating dense, steamy-dark high forest and hair-raising calls and sounds of jungle creatures might excite only adventure seekers. Only a self–motivated rainforest traveler might dare the dense forest of CRNP as a destination given the two parks as options. Such rainforest visitors are usually few relative to those opting for savannah settings (Lameed, 1999). Thus, ecological setting might have affected the capacity utilization of the Parks.

Tourism development requires heavy initial investment and a guaranteed market tosucceed. While levels of utilization can be used to rate the tourism appeal of respective attractions of a destination, it can also be used to predict capacity utilization of national parks. The types of attractions contained in the destination will thus, by extension, affected the destination's capacity utilization which again, can affect the economic performance of national parks. Consequently, Nigeria's ambition of effecting economic development through tourism development – a sector that is expected to play a vital role in the country's economy in the areas of environmental conservation, education, employment creation, generation of foreign exchange, and attraction of foreign investment - can hardly be realised in the present situation whereby utilization of national parks for tourism falls far short of installed capacities. Low capacity utilization can have implications for tourism's ability to contribute meaningfully toward the attainment of Nigeria's national developmental goals.

Conclusion

There was low capacity utilization of YNP and CRNP for tourism during the study period (46.4% and 3.5% respectively), though YNP had higher capacity utilization than CRNP. The kind of tourism attractions that existed in the parks; the awareness of such attractions by potential tourists; their tourism appeal; the ease of accessing and seeing them, may have affected capacity utilization of the parks. Low utilization of intalled capacities has serious negetive implications for Nigeria's agenda of making tourism a key player in the national economy. Tourism's prospects of powering Nigeria's aspiration of diversifying her economy away from the oil sector through investment in the sector may seem gloomy under the present situation of low marketing of her national parks' tourism potentials.

Recommendations

In line with the findings of this study, the following recommendations are proffered:

1) The observed low utilization of installed capacities is antithetical to achieving the national goal of making tourism a key player in the economy. Nigeria should try to identify the causes of low utilization of existing potentials with a view to redressing the problem.
2) The NPS should make effort to increase awareness of the parks as travel destinations. This will likely attract more visitors the parks, and lead to their optimum tourism use.
3) Adequate provisions should be made by the NPS for easy accessibility of the various attractions of the parks. Tourists might have been discouraged from visiting certain attractions not entirely as a result of lack of interest, but because of poor accessibility.

Limitations of the study

The present study could not accommodate day guests who visited by day and left the parks before dusk, or slept in

accommodation facilities outside the parks; but was limited to and based on room occupancy for determining holding capacities and visitations. This was because day guest records were poorly kept in the parks, were unreliable or in cases non-existent for some periods. The findings of this study are thus based on the tourists who lodged in the accommodation facilities of the parks.

Sugestions for future research

1) Further research might be necessary in other major tourism establishments in Nigeria to ascertain their capacity utilizations to enable a holistic overview of tourism in Nigeria.
2) It might also be necessary to ascertain the proportions of current utilization that is made up of local utilization and that composed of foreign utilization. Foreign utilization could serve as a pointer to the foreign exchange earning potentials of the parksand the nation from tourism.
3) Research should also be carried out to find out the causes of low utilization of installed capacities in the parks with a view to redressing the problem.

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TABLES

Table 1: **Annual Totals and Mean Capacity Utilization of Yankari National Park for tourism (2002 - 2006).**

Year	*Holding Capacity	Total Visitation	Capacity Utilization (%)
2002	54,159	22,648	41.8
2003	54, 159	34,054	62.9
2004	54, 159	32,684	60.3
2005	54, 159	22,083	40.8
2006	54, 159	21, 944	40.5 %
X	54, 159	26,682.6	49.3 %

* Holding capacity of YNP remained the same through the study period

Table 2: Levels of Utilization of 10 Tourism Attractions of Yankari National Park (2002 – 2006)

No: 90

S/No	Tourist Attraction	No Visiting Attraction	Level of utilization (%)
1	Game viewing	82	91
2	Warm Spring Batting	58	64
3.	Museum	30	33.3
4	Hotel/tourist facilities	28	31.1
5	Scenic Beauty	17	18.9
6	Marshal caves	2.0	2.2
7	Sporting activities	1.2	1.3
8	Birding	1.1	1.1
9	Old iron Smelting Sites	1.0	1.0
10	Dukkey Wells	1.0	1.0

Table 3: Annual totals and mean ccapacity utilization of CRNP for tourism (2002 – 2006)
No. = 60

Year	*Holding capacity	Total utilization	Capacity utilization (%)
2002	19545	347	**1.77539**
2003	19545	240	**1.130724**
****2004**			
****2005**			
2006	19545	1451	**7.423894**
X	19545	1070.61	**3.459265**

* Holding capacity of CRNP remained the same through the study period.

**CRNP had no record of tourism utilization in 2002 and 2003.

Table 4: Levels of utilization of 12 tourism attractions of CRNP (2002 – 2006).

No. = 60

S/No	Tourist Attraction	No Visiting Utilization	Level of Attraction (%)
1	Rainforest experience/nature trails	56	93.3
2	Giant rock caves	41	68.3
3	Salt licks/wildlife	38	63.3
4	Tourist facilities	35	58.3
5	Scenic beauty	32	53.3
6	Botanic garden/herbarium	30	50.0
7	Natural swimming pool at Mbe mountains	27	45.0
8	Bird watching	25	41.6
9	Pandrillus	24	40.0
10	Gorilla stations at Okwangwo & Mbe Mountains	20	33.3
11	Becheve Nature Reserve	18	30.0
12	Weather	12	20.0

Plate 1a (above): Savannah vegetation of YNP allowing animals to be sighted on the ground, and b (below): Dense vegetation of CRNP. Animals may rarely be seen except when on the trees.