Challenges Facing National Park Management: A Case Study of Kainji Lake National Park, Nigeria

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ABSTRACT: Generally, the problems associated with national park management in Nigeria include loss of wildlife habitats, poaching, overhunting, and illegal logging and grazing. Hence, the objective of this study is to evaluate the numerous challenges facing National Park Management in Nigeria using the Kainji Lake National Park as a case study using personal interview and administration of structural questionnaire to select one hundred and ninety four (194) respondents from the total population and data obtained was analyzed using descriptive statistics. The result of demographic characteristics of respondents sampled indicates that the male respondents were dominant (75.7%) and majority of the 51.4% of the sampled populations' falls between age group 35-44 years. The finding further revealed that majority of the respondents was married (71.0%). 59.8% of the respondents had tertiary education while 40.2% had secondary education. Also, majority of the respondents are Muslims (71.0%) while 29.0 are Christian. Majority of the respondents (52.3%) had worked between 11-20 years while ≥21 are the least with 17.8%. The major challenges confronting Kainji Lake National Park as identified by the park staffs are insufficient fund and lack/shortage of manpower.The effects of these challenges on Wildlife management are reduction in management practices, makes work difficult and reduction in wildlife population. The measures taken in managing the identified challenges in the study area are provision of incentives/bonus to the staff, adequate funding, provision of modern equipment and facilities etc. The study therefore concludes that for effective conservation of biodiversity to be achieved in this premier national park of Nigeria, the identified challenges must be addressed.

Human activities have increased the extinction rate by at least 100 times more than the natural rate (Millennium Ecosystem Assessment, 2005). The increase in depletion and extinction of the world's biodiversity has led to a greater interest from the global community to protect the environment and safeguard natural habitats and thousands of species (Burgess, 2012). The establishment of protected areas is construed to be the most feasible strategy of maintaining biodiversity (Chape *et al*., 2008). National park is regarded as the cornerstone of biodiversity conservation globally. According to Wright (1996), parks reflect a nation's desire to preserve for generations unborn it's floral, faunal, and landscape diversity as elements of its national and cultural heritage. In a world or rapid environmental change, parks and protected areas are ideally represent islands of stability places where environmental changes are

dictated by the rhythms of nature rather than by human demography and economic demands (Wright, 1996). Nigeria's biodiversity is one of the richest in Africa. The Federal Ministry of Environment Fourth National Biodiversity Report (2010) opined that Nigeria's geographic features endows her with one of the richest biodiversity in African continent. But despite this richness, conservation of Nigeria's biodiversity is at currently at lowest ebb. Although, various policies and strategies aimed at sustaining biodiversity have been developed, particularly at national level, biodiversity decline continues unabated. According to Meduna *et al.* (2009), wildlife conservation and management in Nigeria have been facing many social and ecological problems. National park remains the beacon of conservation in Nigeria and command more attention than all other forms of protected areas. Despite this, national parks have not been able to stem the tide of erosion of biodiversity in the country. Unabated assaults on the integrity of ecosystems and their biological components dominate (Ogunjinmi *et al.*, 2014a). Fortress and protectionism approaches of conservation have failed to meet the global conservation objectives. According to IUCN-UNEP-WWF World Conservation Strategy (1980), the three main objectives of conservation are: 1) maintenance of essential ecological processes and life support systems, 2) preservation of genetic diversity and, 3) sustainable utilization of species and ecosystem. Notwithstanding, National Park has encounter a lot of challenges even when most populace especially the rural dwellers agrees to the values and benefits accrue from it. In the same vein, returning an area to its

original state is not only costly but demanding and often difficult (Christ *et al.*, 2003). However, outright conflict between conservation and indigenous approach has been the major problem of biodiversity conservation in Nigeria (Osunsina and Fagberiro, 2015) outdated polices, laws and poor funding (Saidu, 2017). Even though the country can boast of its protection and conservation network through National Parks. There are numerous literatures on the different species of wild animals found in Kainji Lake National Park but few or no on the current issues facing the Park. Every organization or setting has its own peculiar issues and it is paramount to know this set of issues so as to find the best possible way of overcoming them (Ogunjinmi *et al.*, 2014a). This is necessary especially when dealing with the conservation of biodiversity in its totality. Hence, the objective of this study is to evaluate the numerous challenges facing National Park Management in Nigeria using the Kainji Lake National Park as a case study

MATERIALS AND METHODS

Study area: Kainji Lake National Park (KLNP) is located approximately 560km north of Lagos, and 385km southwest of Abuja, Federal Capital of Nigeria. It covers a total area of 5,340.82km^2. The two sectors of KLNP lie approximately between latitudes 9^0 40'N and 10^0 30'N and longitudes 3^0 30'E and 5^0 50'E. It is made up of two non-contiguous sectors; the Borgu Sector and the Zugurma Sector.
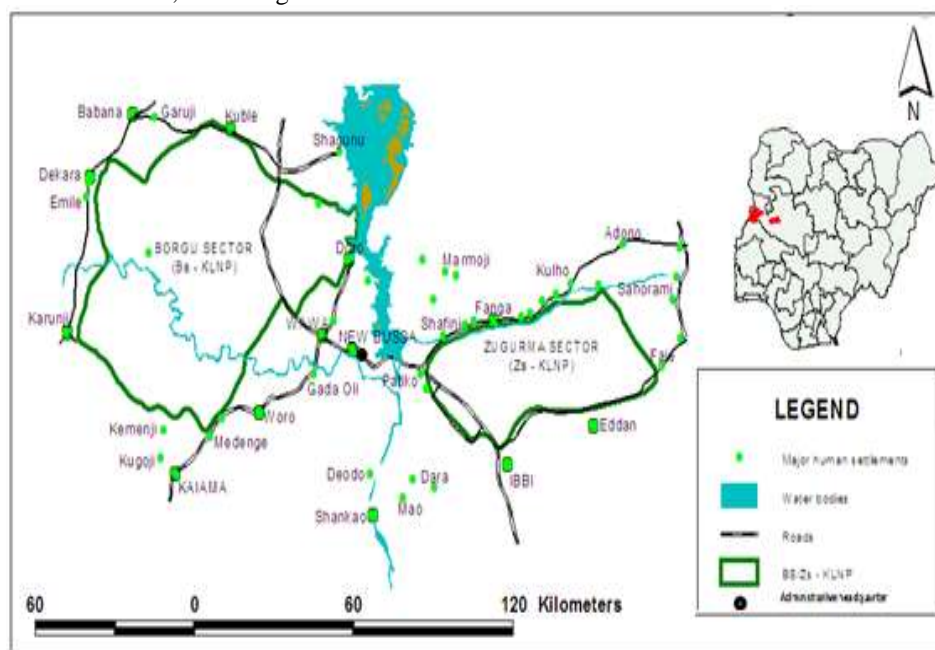

Fig 1: Map of Kainji Lake National Park, Nigeria Source: Ayeni (2007)

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The Borgu Sector of KLNP (Bs-KLNP) is situated on the land area shared between Borgu Local Government Area (LGA) in Niger State and Kaiama as well as Baruten LGAs, Kwara State. It is bordered on the east by the Kainji Lake, popular for the National Electric Power Authority's (now Power Holding Company of Nigeria's) Hydro-electricity Generation Station and supply of freshwater fish. Its western border is contiguous with inter-national boundary of Nigeria and the Republic of Benin. The Zugurma Sector (Zs-KLNP) is situated in the land area shared between Magama and Mashegu LGAs of Niger State. The tributary of Kontagora River on the Northwest side and River Manyara on the north borders the Zugurma Sector (Ayeni, 2007).

MATERIALS AND METHODS

Study Population: The population for this study consists of staff of Kainji Lake National Park

Table 1: Population of staff of Kainji Lake National Park

Departments	Number of Staffs
Human Resource Management	33
Ecology and Resource Management	241
Audit	5
Planning Research and ICT	17
Finance and Account	13
Ecotourism	28
Work and Maintenance	37
Public Relation Officer	2
Total	376

Source: Administrative Records, 2021.

Sample Size: The whole population of the study cannot be study, the sample size was determine using Taro Yamen method (Schawans, 1994).

$$n = \frac{N}{1 + N(e)2}$$

Where N= Population; 1= Constant; e= Correlation factor (Level of significance of error assumed to be 5%)
Therefore n will be

$$= \frac{376}{1 + 376(0.05)2} = 193.8 = 194$$

In order to get the number of questionnaire to be distributed in each of the eight (8) departments Nh = $\frac{n \times nh}{N}$

Where Nh= Number of items in each category; n= Sample population; nh= Number of unit allocated in each department; N= Population size

To apply the above formula, the figure in the table above was substituted, therefore

Human Resource Management $= \frac{194 \times 33}{376} = 17$

Ecology and Resource Management $= \frac{194 \times 241}{376} = 124$

Audit $= \frac{194 \times 5}{376} = 3$

Planning Research and ICT $= \frac{194 \times 17}{376} = 9$

Finance and Account $= \frac{194 \times 13}{376} = 7$

Ecotourism $= \frac{194 \times 28}{376} = 14$

Work and Maintenance $= \frac{194 \times 37}{376} = 19$

PRO $= \frac{194 \times 2}{376} = 1$

Therefore, one hundred and ninety four (194) questionnaires were distributed among the staff
Data Collection: This involves the use of primary and secondary data. The primary data involves interview and administration of structured questionnaire. Purposive sampling was used to select one hundred and ninety four (194) respondents from the total population.

Data Analysis: Data obtained was analyzed using descriptive statistics i.e frequency tables, charts and bars. The statistical analysis was performed using SPSS.

RESULTS AND DISCUSSION

The result of demographic characteristics of respondents sampled as presented in Table 1 indicates that the male respondents were dominant (75.7%), while the female were only 24.3%. Furthermore, 51.4% of the sampled populations' falls between age group 35-44 years, followed by 25-34 years with 30.8% and age group 45 and above were the least (17.8%). The table further revealed that majority of the respondents was married (71.0%) while 29.0% are unmarried. It can equally be noted from the table that 59.8% of the respondents had tertiary education while 40.2% had secondary education. Also, majority of the respondents are Muslims (71.0%) while 29.0 are Christian. The table also showed that majority of the respondents (52.3%) had worked between 11-20 years while ≥21 are the least with 17.8%. The respondent's monthly income of the majority (55.1%) respondents is between ₦50,000-99,000 while 15.9% earned ≤₦49,000. Table 2 indicates the challenges confronting Kainji Lake National Park as identified by the park staff. Majority of the respondents ranked insufficient fund and lack/shortage of manpower as one of the major issues of the study area with a mean of 4.93 and 4.72 each, followed by insufficient infrastructure and low quality of firearms/ammunition with a mean of 4.64 and 4.63. While lack of staff commitment and poor park communities partnership

recorded the least with a mean of 4.42 and 4.36.The effects of the challenges on Wildlife management are revealed in table 3, in which reduction in management practices and makes work difficult recorded 35.5 and 29.0%, followed by reduction in wildlife population with 25.2% while reduction in tourist inflow recorded the least with 10.3%. Table 4 showed the measures taken in managing the identified challenges in the study area, provision of incentives/bonus to the staff scores 24.3%, adequate funding (22.4%), provision of modern equipment and facilities (19.6%), employment of conservation related trained staff (14.0%) while involvement of community in decision making is the least with 7.5%.

Table 1: Demographic Characteristics of the Respondents

Demographic	Variables	Frequency	Percentage (%)
Gender	Male	81	75.7
	Female	26	24.3
Age Group	25-34	33	30.8
	35-44	55	51.4
	45 and Above	19	17.8
Marital Status	Married	76	71.0
	Unmarried	31	29.0
Level Of Education	Primary	-	-
	Secondary	43	40.2
	Tertiary	64	59.8
Religion	Christianity	31	29.0
	Islam	76	71.0
	Traditional	-	-
Years in Service	≤10	32	29.9
	11-20	56	52.3
	≥21	19	17.8
Income Per Month	≤₦49,000	17	15.9
	₦50,000-99,000	59	55.1
	≥₦100,000	31	29.0
	Total	**107**	**100.0**

Source: Field Survey, 2022.

Table 2: Challenges Confronting Kainji Lake National Park

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Rank
	F	%	F	%	F	%	F	%	F	%		
Lack of incentives	11	10.3	2	1.9	3	2.8	2	1.9	89	83.2	4.46	7th
Insufficient funding	6	5.6	4	3.7	2	1.9	3	2.8	92	86.0	4.93	1st
Lack/shortage of manpower	9	8.4	1	0.9	2	1.9	4	3.7	91	85.0	4.72	2nd
Inadequate and unserviceable vehicles	6	5.6	4	3.7	5	4.7	2	1.9	90	84.1	4.49	6th
Low calibre of firearms and ammunitions	5	4.7	3	2.8	2	1.9	5	4.7	92	86.0	4.63	4th
Poor park- communities' partnerships	7	6.5	3	2.8	3	2.8	4	3.7	90	84.1	4.36	10th
Insecurity/Banditry	8	7.5	1	0.9	0	0	4	3.7	94	87.9	4.62	5th
Low level of communication between the staff and villager	10	9.3	1	0.9	7	6.5	2	1.9	87	81.3	4.44	8th
Insufficient infrastructure	2	1.9	6	5.6	4	3.7	4	3.7	91	85.0	4.64	3rd
Lack of staff commitment	9	8.4	5	4.7	4	3.7	3	2.8	86	80.4	4.42	9th

Source: Field Survey, 2022.

The socio-demographic characteristics of this findings indicated that there are more males respondents than females. Result on gender in this study was consistent with the previous findings that reported more male respondents than females (Ogunjinmi *et al.*, 2008).

This might also be because the core of conservation work of Nigeria National Park Service is protection, which gives paramilitary status with male dominating the service. However, this percentage representation of women gender was lower than what was also

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reported by earlier studies (Wynveen *et al.,* 2005) Studies have also reported higher number of females than males. The mean age was also lower than what was obtained by earlier studies (Wynveen *et al.,* 2005). The result of marital status was also consistent with previous observations with a higher percentage of married respondents (Ogunjinmi *et al.,* 2008). The respondent's years of experience in KLNP showed that majority of the staff had worked for more than 10 years. This was in line with Nahanyo (2005), which ascribed to the fact that the rangers who have spent up to five years in the park have experiences on the level of pressure they are frequently being subjected to, in trying to protect the park against poaching.

Table 3: Effects of the Challenges on Wildlife Management in Kainji Lake National Park

Effects	Frequency	Percentage (%)
Reduced tourists inflow	11	10.3
Reduced management practices	38	35.5
Reduced wildlife population	27	25.2
Makes work difficult	31	29.0
Total	107	100.0

Source: Field Survey, 2022.

Table 4: Measures taken in managing the identified Challenges in the Study Area

Measures	Frequency	Percentage (%)
Adequate funding	24	22.4
Employment of conservation related trained staff	15	14.0
Provision of modern equipment and facilities	21	19.6
Cooperation between the Parks and other law enforcement agencies	13	12.1
Involvement of community in decision making	8	7.5
Provision of incentives/bonus to the staff	26	24.3
Total	**107**	**100.0**

Source: Field Survey, 2022.

Poor funding was ranked as the major contemporary issues facing Kainji Lake National Park management. This finding support Ogunjimi, (2008) that reported that funding is one of the major problems of conservation in Nigeria National Park System and the findings from this study alluded to limited and poor management of available funds. Protected areas in Nigeria, are critically underfunded. Globally, protected areas are not able to secure sufficient financial resources for management, boundary delineation, and enforcement (Depondt and Green, 2006). The lack of incentives and motivation were

observed by Ogunjinmi (2008) at Yankari Game Reserve, Nigeria. For the achievement of any organization's goals, employment of competent, knowledgeable and committed staff is very important, particularly in national park settings where specialized trainings and competence in natural resources management are required. Employment of people whose background and trainings not related to wildlife and natural resources management has greatly affected the operations of the parks since such category of employees are posted as office staff rather than field where their services are needed which leads to shortage of field manpower (Onadeko *et al.,* 2014). A committed staff is an asset to any organization while a non-committed staff could be a hindrance to the fulfillment of organization's goals. The findings indicated lack of staff commitment among the respondent's. According to Ogunjinmi, Onadeko, Ladebo, and Ogunjinmi (2014), employees constitute an important segment of organization's stakeholders; their commitment plays significant role in the effectiveness and stability of organizations. Ogunjinmi *et al.,* (2014), also observed low level of organizational commitment among employees of Nigeria National Parks Without committed staff, meeting conservation goals and objectives of national parks become highly impossible. Protection of wildlife and biodiversity in the parks poses a great challenge to effective conservation and management in the parks (Ogunjimi, 2008). This study identified inadequate and unserviceable vehicles, lack of patrol incentives, low quality of firearms and lack of ammunitions. In their study of job satisfaction of rangers in Yankari Game Reserve, Ogunjinmi *et al.,* (2008) reported inadequate patrol equipment and fueling of patrol vehicles as some of the factors affecting job satisfaction of rangers. The lack of incentives and motivation were observed by Ogunjinmi (2008) at Yankari Game Reserve, Nigeria. According to Ogunjinmi (2008), motivational incentives are known to spur increased performance of workers. Lack of incentives and motivation has reduced the morale of the field officers to fight for the park and the protection of it resources.

Reduction in management practices was ranked to be the most effects of contemporary issues on wildlife management in KLNP. This finding was in accordance with Mlenga and Lyaruu, (2016) that reported that insufficient number of staff in stations and ranges in the park makes it difficult for basic management practices to be effectively carried out and can lead to over utilization of workers, and fear of being outnumbered by poachers. Also this contemporary issues lead to reduction in animal population to such a level that is noticeable by the park officials. Though

similar reductions in wildlife population is worldwide (Mlengeya and Lyaruu, 2016) but the rangers in Kenya irrespective of the fact that they are facing relatively more encroachment pressure than rangers of KLNP are recording more successes because they are better equipped with safety equipment. In this present work, issues of biodiversity conservation problems have raised some fundamental view on their implication on wildlife management and ecotourism performance in the study area. This probably is one of the major reasons why destruction of biodiversity and its habitat is much in the park leading to fauna migration, soil erosion intensity, deforestation, land degradation and modification of vegetation structure. This however, causes a downward trend in the range condition, biodiversity decline and reduced ecotourism activities of the park. This agrees with the reports of Meduna *et al.,* (2009) that habitat destruction and fauna loss leads to downward trend in range condition and reduced tourists' participation.

Conclusion: The finding of this research confirms that there are many and serious challenges facing wildlife management in Kainji Lake National Park, this issues includes; insufficient fund, lack/shortage of manpower, insufficient infrastructure, low quality of firearms/ammunition, lack of staff commitment and poor park communities partnership. The study therefore recommends that the management of the park should increase the security status of the park by employing more game guards and procuring security facilities.

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