

## **PARK'S BENEFITS TO SURROUNDING COMMUNITIES AND ITS IMPACT ON WILDLIFE CONSERVATION IN KAINJI LAKE NATIONAL PARK, NIGERIA**

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### **Abstract**

Projects linking conservation and development have been implemented around protected areas with a trust to generate benefits for local communities to garner support for the conservation of biodiversity in Nigeria's protected areas. Hence, this study assessed the Park's benefits to surrounding communities and its impact on wildlife conservation in Kainji Lake National Park (KLNP), Nigeria, to provide park managers with additional information in planning their activities. Four (4) randomly selected villages: Luma, Malale, Wawa and Gada Oli were surveyed with 110 questionnaire copies. The results show that the majority of respondents (55.5%) are males, whereas most households (38.18%) comprise 6 to 10 members. The major occupation of the respondents revealed that 42.7% were farmers in the surrounding national park, followed by traders (20%) and civil servants (16.4%). Most of the respondents were non-indigenes of the communities, while 37.20% of the respondents indicated that their monthly income was between ₦20,001 and ₦40,000. Eighty four per cent (84%) of the respondents agreed that the host communities' derived lots of benefits from KLNP, which include the donation of farm inputs (38.18%), employment (18.18%), empowerment programmes (16.36%) and infrastructural development (14.55%) through a majority (65%) of respondents indicated that there is no communities' involvement in the planning of park-initiated projects. The study further established that there is a significant relationship between income and the perception of respondents to wildlife conservation. However, other variables, such as age, sex, occupation, education, and household size are not significant to the notion. This study shows that Kainji Lake National Park's surrounding communities have an overall positive attitude towards the park. However, local people's responses to specific concerns and benefits showed a mixed perception. It is imperative for park authority to build on the communities' perception of conservation and development outcomes.

**Key words:** Biodiversity; Conservation; Park's benefits; Protected area; Wildlife.

### **INTRODUCTION**

The establishment and management of protected areas (PA) has become the cornerstone of biodiversity conservation strategies all over the world (Ervin 2013, Lele *et al.* 2010). PAs can provide significant livelihood benefits to local communities. This includes benefits provided by successful protection of forest ecosystem services and those directly gained from the management structure of the protected area. Although they have been set aside from human exploitation, it has become increasingly recognised that protected areas should play a role in sustaining the local communities adjacent to them (Ghimire and Pimbert 1997).

A strong association exists between protected areas and the livelihood of the rural populations living near the area due to their being the custodian of the resources before the establishment of the PAs. These communities livelihoods (such as hunting, fishing, farming, firewood collection, mining, and logging)

have been taken by the highest authority of the land for biodiversity conservation because the long-term sustainability of parks and protected areas is hinged on public involvement and support for the conservation of natural resources (Salafsky and Wollenberg 2000). Therefore, communities adjoining the park should be more involved with the activities going on in the park, and be provided with more social infrastructure as dividends for their loss of access to the park.

These benefits are incentives for people to perceive environmental conservation positively (Bauer 2003). The correlation between benefits and positive attitudes towards conservation has been confirmed in many cases (Hamilton *et al.* 2000, Mehta and Heinen 2001). A commonly held belief is that if people can benefit financially from the enterprises that depend on nearby forests, reefs, and other natural habitats, they would take action to conserve and sustainably use those habitats (Salafsky *et al.* 2001).

Sara *et al.* (2004) also reported that some biodiversity solution led to increased poverty and food insecurity and stated that the expansion of Public Park and protected areas at the expense of local people by excluding them from the usage of the resources for food production has led to world food problem and insecurity. In addition, establishing a protected area may necessitate or trigger some form of compensation in terms of alternative living space or support for livelihood options.

Leisher and Peter (2004) observed that it may not necessarily be the protected area that provides the benefit, but rather the measures put in place as a result of declaring an area protected. It is increasingly recognised that the biodiversity conservation can only be successful by providing alternative livelihood solutions to local communities dependent on forest resources (West *et al.* 2006). However, global experiences illustrate that the successful integration of conservation and development continues to be elusive, especially in Africa (Van-Vliet 2010).

In practice, National Park managers in most African countries are trying to collaborate with local people to improve their effectiveness, with approaches ranging from park outreach to co-management (Barrow and Murphree 2001). This is because enhancing the well-being of host communities in protected areas is sine-qua-non to the efficient management and conservation of resources in such PAs. Yes, host community members may not have economic needs to engage in poaching and other encroachments on PAs. Rather, they will be more proactive at protecting the area, knowing that they stand to derive more benefits from its presence while most national parks managers tend to focus on the provision of social facilities that will encourage the sustainable conservation of wildlife resources.

However, this study aim to investigate the benefits and challenges encountered by local populations living around Kainji Lake National Park (KLNP), and the implications for the conservation of its fragile biodiversity will provide park managers with additional information in planning their activities.

## **MATERIAL AND METHODS**

### *The study area*

The Kainji Lake National Park is located in the North central part of the country and lies at latitude 9°45' and 10°23' N, and longitude 3°40' and 5°47' E (Fig. 1). It is made up of two sectors (Borgu and Zugurma) situated in Borgu and Kaima/Baruten Local Government Areas of Niger and Kwara State, respectively. It covers a total land area of 5,340.825 sq km (Ayeni 2007).

The climatic features of the park are divided into wet and dry seasons, which vary from year to year. The dry season extends from November to April. The mean annual rainfall of the park ranges from 900



## RESULTS AND DISCUSSION

### *Socio-demographic characteristics of the respondents in the study area*

The result in Table 2 presents the demographic characteristics of host community members to KLNP. Sex distribution of the household heads was 55.5% and 44.5% males and females, respectively. Educational qualifications show 47.7% while 4.5% attended primary school only. The age structures show that the majority (31.82%) of the respondents were within the age range of 31-40 years. The result on household size shows that most households (38.18%) comprised 6 to 10 members. Households with 6-10 members (38.18%) were the majority.

Results on the occupation of the respondents revealed that 42.7% were farmers in the surrounding national park, followed by traders (20%) and civil servants (16.4%). The majority of the respondents were non-indigenes of the communities while 37.20% indicated that their monthly income was between ₦20,001- ₦40,000.

**Table 2. Socio-economic characteristics of the surrounding communities of the Kainji Lake National Park, Nigeria.**

Variables		Frequency	Percentage
Sex	Male	61	55.50
	Female	49	44.50
Age (Years)	21-30	26	23.64
	31-40	35	31.82
	41-50	29	26.36
	51-60	8	7.29
	> 60	12	10.91
Academic qualification	Primary	5	4.50
	Secondary	36	32.70
	Tertiary (ND/NCE/HND/Degree etc.)	52	47.30
	No formal education	17	15.50
Household size (Persons)	1-5	3	2.73
	6-10	42	38.18
	11-15	35	31.81
	16-20	17	15.46
	>20	13	11.82
Major occupation	Farming	47	42.70
	Trading	22	20.00
	Students	15	13.60
	Civil servant	18	16.40
	Others	8	7.30
Monthly household income	≤ ₦20,000	18	19.1
	₦20,001- ₦40,000	35	37.2
	₦40,001- ₦60,000	25	26.6
	≥ ₦60,001	16	17.1

Source: Field survey, 2022.

### *Benefits derived from the park management for the communities in the study area*

Responses on the kind of benefits host communities derived from KLNP include the donation of farm inputs, employment, empowerment programme and infrastructural development in order of popularity (Fig. 2).

### *Community's perception of the importance of parks in the study area*

Table 3 shows indicators that were used to evaluate the community's perception of the importance of the Park. Majority people (96.4%) agreed that the protection of KLNP is important for the need and

aspirations of future generations, probably because a large proportion of respondents (93.6%) perceived that the park attracts tourists that provide additional income to local people.

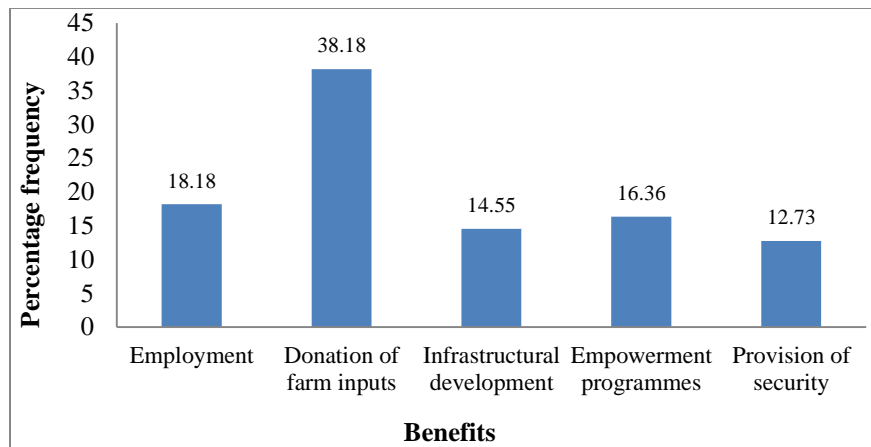


Fig. 2. Benefits communities derived from park management in the study area.

#### *Perception of respondents to wildlife conservation in the study area*

From the results, it is evident that park establishment is a major development for the majority (95.5%) of people in the study area, as 94.5% agreed that conservation is a very good policy. Hence, 93.6% of the respondents would like to be the part of the conservation activities. The 94.5% of respondents agreed that local people have a role in wildlife conservation, and 92.7% believe that communities can promote the conservation and management of natural resources among fellow communities. Hence, the majority (82.7%) agreed that involving communities ensure success in conservation efforts and those communities should be engaged in decision-making processes concerning conservation projects.

**Table 3. Community's perception of the importance of park in the study area.**

Statement	Agree	Disagree	Undecided	Mean	SD	Rank
Park is important for the survival of the support zone communities.	105 (95.5)	2 (1.8)	3 (2.7)	2.93	0.351	2 <sup>nd</sup>
The protection of Park is important for the need and aspirations of future generations.	106 (96.4)	2 (1.8)	2 (1.8)	2.95	0.298	1 <sup>st</sup>
Protection of Park attract tourists that provide additional income to local people.	103 (93.6)	1 (0.9)	6 (5.5)	2.88	0.464	3 <sup>rd</sup>

Percentages in parentheses; SD=Standard Deviation; Source: Field Survey, 2022.

#### *Relationship between socio-economic characteristics and perception of respondents to wildlife conservation*

The study established that there is a significant relationship between income and the perception of respondents to wildlife conservation though other variables, such as age, sex, occupation, education, and household size are not significant in the study area.

The demographic characteristics of respondents in the study signified that most people around KLNP were males. The involvement of more men in wildlife activities, especially poaching, constitutes a threat to wildlife conservation. The age group of respondents indicates that the majority is within

active ages and is more likely involved in livelihood activities. Bush *et al.* (2010) confirmed that there are many threats to biodiversity caused by human activities based on their dependence on forest resources to supplement livelihoods.

**Table 4. Perception of respondents to wildlife conservation in the study area.**

Variables	Agree	Disagree	Undecided	Mean	SD	Rank
The establishment of the park is a welcome development	105 (95.5)	-	5 (4.5)	2.91	0.419	1 <sup>st</sup>
Conservation is a very good policy	104 (94.5)	1 (0.9)	5 (4.5)	2.90	0.427	2 <sup>nd</sup>
I will like to be part of the conservation activities.	103 (93.6)	-	7 (6.4)	2.87	0.490	4 <sup>th</sup>
Local people have a role to play in wildlife conservation	104 (94.5)		6 (5.5)	2.89	0.456	3 <sup>rd</sup>
Communities can promote the conservation and management of natural resources among fellow community	102 (92.7)	2 (1.8)	6 (5.5)	2.87	0.471	4 <sup>th</sup>
Involving communities ensures success in conservation efforts	91 (82.7)	5 (4.5)	14 (12.7)	2.70	0.685	5 <sup>th</sup>
Communities should be engaged in decision-making processes concerning conservation projects	91 (82.7)	5 (4.5)	14 (12.7)	2.70	0.685	5 <sup>th</sup>

Percentages in parentheses; SD=Standard Deviation; Source: Field Survey, 2022.

The primary occupations of the respondents are farming and hunting, while few are traders. This agrees with Nyangoma (2010), who affirmed that the majority of the people living around protected areas engaged in farming activities. However, the involvement of the majority of the respondents in farming and hunting activities is equally a dangerous signal to wildlife conservation, as observed by Oates *et al.* (1990), while Kate (2012) also reported that human activities such as farming could radically alter wildlife habitat.

**Table 5. Socio-economic characteristics and perception of respondents to wildlife conservation.**

Variables	$\chi^2$	Df	p-value	Decision
Age	3.260 <sup>a</sup>	2	0.196	NS
Gender	1.082 <sup>a</sup>	1	0.298	NS
Major occupation	4.093 <sup>a</sup>	4	0.394	NS
Educational level	2.475 <sup>a</sup>	3	0.480	NS
Household size	4.972 <sup>a</sup>	2	0.083	NS
Average income	28.282 <sup>a</sup>	9	0.001	S

S = Significant; NS= Not Significant; Source: Field Survey, 2022.

This study acknowledged that the community agreed that wildlife conservation can be important for future generations hence encouraging support for wildlife conservation projects in their communities, probably because a large proportion of respondents had the perception that important for the survival of the support zone communities. This aligns with Newmark *et al.* (1993), De Boer and Baquete (1998), who reported that despite challenges facing people living adjacent to protected areas, some local people have retained a positive attitude towards conservation in Maputo and Tanzania. Identified benefits of

communities derived from park management in the study area are agreed with the findings of Wells and Brandon (1992), who affirmed that various projects that link conservation and development have been implemented around the protected areas to generate benefits for local communities that otherwise have been disenfranchised by protection policies.

It is further established that residents' income correlates with positive attitudes towards conservation, as earlier confirmed in many cases (Hamilton *et al.* 2000, Mehta and Heinen 2001). The study then affirmed Salafsky *et al.* (2001) that the commonly held belief is that if people can benefit financially from enterprises that depend on nearby forests, reefs, and other natural habitats, they would take action to conserve and sustainably use those habitats.

This study showed that the local communities, *i.e.*, Wawa, Malale, Gada Oli and Luma, benefitted from the socio-economic provisions of Kainji Lake National Park. The communities generated income from employment, farming and empowerment programmes that come from park management policies. Therefore, the study further confirmed a positive relationship between the income generation of the residents and wildlife conservation.

The current study shows that surrounding communities in the Borgu sector of Kainji Lake National Park have an overall positive attitude towards the park. However, their response to specific concerns and benefits showed a mixed perception. It is then pertinent for the park authority to build on these communities' perception of conservation through supportive policies that will improve livelihoods which will consequently improve the management of biodiversity in sustainable ways. However, it is also important to replicate this study in Zugurma sector of the park in order to bring success to the overall management of the National park.

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