



Wildlife for Sustainable Development

Nigerian Journal of Wildlife Management

Nig. J. of Wildl. Mgt., 2021, 5(1): 46 – 53

<https://wildlifesocietyng.org/ojs/index.php/wildlifesocietyng-journal/index>

©2021 Copyright Wildlife Society of Nigeria

ISSN 2735-9298 (PRINT) ISSN 2735-928x (ONLINE)

Factors Influencing Human-Wildlife Conflicts in Communities Around Kainji Lake National Park, Nigeria

*Adelakun, K. M., Ibrahim, A. O., Joshua, D.A., Adedeji, A.S., Adedeji, E. O. and Sa'adu, A.A.

¹Federal College of Wildlife Management, Forestry Research Institute of Nigeria, P.M.B.268, New Bussa, Nigeria

*adelakunkehinde@gmail.com

ABSTRACT

This study assessed factors influencing human-wildlife conflicts in communities around Kainji Lake National Park (KLNP), Nigeria. Data were collected through questionnaire administered on the residents of the communities adjacent to Borgu sector of the Park. The findings showed that 53% of the respondents were aware of human-wildlife conflict in the study area. Majority (100%) stated that crops raiding and destruction by wildlife was the major problem faced by the surrounding communities. Human-wildlife indicators include increased need for land for development (88%), human activities like farming, deforestation, and grazing of domesticated animals in the park. In addition, 72% of the respondents stated that increasing human population contributes a lot to competition between humans and wildlife in resource utilisation. It was suggested that KLNP need to do more in sensitizing the local communities on importance of wildlife conservation.

Keywords: Conservation, conflict; wildlife, management practices, national park

INTRODUCTION

Protected areas constitute a major component of national and regional strategies to counter biodiversity loss. They are considered as *in situ* repository of genetic wealth as well as relics of pristine landscapes that deeply touch the spiritual, cultural, aesthetic and relational dimensions of human existence (Chape *et al.*, 2003; Putney, 2003). However, protected areas often only protect a part of an ecosystem or species range, and wildlife dispersal from such areas may increase conflict with man (Woodroffe and Ginsberg, 1998). Even as alternative forms of land use, such as wildlife tourism, are implemented in an attempt to derive sustainable benefits from wildlife, conflict may remain (Roe *et al.*, 1997; Goodwin *et al.*, 1998). Human Wildlife Conflict (HWC) usually occurs when wildlife requirements overlap with those of humans, creating costs to residents and wild animals (Eniang *et al.*, 2011). Human-wildlife conflict is defined as “any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life, on the conservation of wildlife populations, or on the environment” (WWF-SARPO, 2005). Human wildlife conflicts emanates from different dimensions which

includes conflicts between people who have different perceptions, affluence, values and attitudes.

Conflicts between wildlife and people, particularly those who share the immediate boundaries with protected areas are very common (Shibia, 2010). These conflicts may result when wildlife damage crops, injure or kill domestic animals, threaten or kill people (Ladan, 2014). The conflict also occurs when a person or community seeks to kill the animals, or when people react against the authorities that are in charge of conserving wildlife and its habitat (Eniang *et al.*, 2011). Another facet of conflict is between the local communities and the wildlife; triggered by clashes over access to resources and survival. It also involves issues like conserving wildlife whilst protecting the needs of the local people (Madden, 2004). FAO (Food Agriculture Organization) (2015), also highlighted that “human-wildlife conflict (HWC) occurs when the needs of wildlife encroach on those of human populations or the needs of human populations encroach upon those of wildlife. Hence, conflicts between humans and wildlife are the product of socio-economic and political landscapes and are controversial because the resources concerned have economic value and the species involved

are often high profile and legally protected (Treves and Karanth 2003; McGregor, 2005). Child (2002) observed that if ecological reserves are to survive, protected areas must become an integral part of the socio-economic environment in which it is embedded. Instead of being a bastion of nature conservation, it should become a bridgehead for better land use and instead of being a black hole for scarce natural resources; it should become an engine for rural development and poverty alleviation. Oseomeobo (1992) reported that the right of the surrounding communities to exploitation of flora and fauna resources in game reserves and national parks were extinguished following their establishment, hence the conflicts which reflect the people's sharp reaction against the discriminating government policies on their own land. Abubakar *et al.* (1993), reported that such reactions as they observed in Kainji Lake National park were expressed in the form of illegal activities in the conservation area, such as grazing, poaching, and farming.

Human-wildlife conflict (HWC) is fast becoming a critical threat to the survival of many globally endangered species, in particular to large and rare wildlife. The numerous cases demonstrate the severity of human-wildlife conflict and suggest that an in depth analysis is essential to understand the problem and support the conservation prospects of threatened and potentially endangered species. Therefore, this study evaluates factors influencing human-wildlife conflicts and some management approaches that will facilitate the coexistence of humans and wildlife in communities around Borgu sector of Kainji Lake National Park. The aim of this study therefore, is to facilitate the coexistence of humans and wildlife and assist affected communities of Kainji Lake National Park in applying best management practices through Environmental Education.

MATERIALS AND METHODS

Study area

The study was conducted in Borgu Sector of Kainji Lake National Park, New Bussa, Niger State, Nigeria. Kainji Lake National Park is located in the North central part of the country lies latitude 9°45 and 10°23N and longitude 3°40 and 5°47E. It is made up of two sectors (Borgu and Zugerma) situated in Borgu and Kaima/Baruten Local Government Area of Niger and Kwara State respectively. It covers a total land area of 5,340.825sq Km (Ayeni, 2007).

The climatic features of the park are divided into the 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 900mm and 1500mm, while mean annual temperature is between 12°C and 37°C. The rainy season starts in May and ends in October, with highest rainfall record between July and August. The dry season begins in November through early April and the hottest period is between March and April (Aremu *et al.*, 2007). The vegetation of Borgu sector of the park is transitional between the Guinea and Sudan Savanna in the North. As a consequence it displays a variety of vegetation types which form a mosaic of woodland savanna (National Park Service, 2002, Aremu, 2007) while the wild animal species of Kainji Lake National Park is typical of those large mammals associated with the guinea savannah of West Africa (Ajayi and Ogunjobi, 2015). There are also rich species of reptiles, birds, bats, amphibians and insects as well as over 60 fish species belonging to 20 families (National Park Service, 2012).

Data Collection and Analysis

Data were obtained in seven (7) randomly selected villages in Borgu Sector of the Park, namely Luma, Kuble, Audu Fari, Kali, Malale, Leshegbe and Gada Oli were survey. The unit of data collection was household. There were 1069 households in the selected communities at the time of this study from where 10% of the households were selected. It was a questionnaire survey involving the administration of questionnaire on the residents (household heads) in communities that are adjacent to Borgu sector of the Park. In all, a total of 108 households were selected for the study but 106 copies of questionnaire were retrieved. Data were analysed and presented descriptively with the use of Statistical Package for Social Science (SPSS 17).

Table 1: Sampling population and size

Villages	No of households	sample size (10% of each households)
Luma	365	37
Kuble	50	5
Audu fari	66	7
Kali	71	7
Malale	308	31
Leshegbe	70	7
Gada oli	139	14
TOTAL	1069	108

Source: Modified from NPC, 2015 report

RESULTS

Demographic characteristics of the respondents

The demographic characteristics of the respondents are presented in Table 2. The study indicates that 65.1% were male while 34.9% of the respondents were female. The age groups of respondents fall between ≤ 20 years with 3.8%, 21-30 years with 40.6%, 31-40 years with 34.0% and ≥ 40 are 21.7%. Majority (52.8%) of the respondents have been residing in the selected communities between 1 to 10 years while small fractions of 7.6% of the respondents were residents of the communities for 31-40 years. In addition, 43.4% of the respondents were farmers. Other prominent occupations in the area are fishing (19.7%), trading (19.7%), civil service (11.8%), and artisan (5.3%).

Indicators of Human-Wildlife Conflicts in Kainji Lake National Park

The study reveals (Table 3) that all the respondents ((mean=4.65) stated that crops raiding and destruction by wildlife was the major problem faced by the surrounding communities. This was followed by killing of community members by wild animals (mean=2.67), killing of livestock by wild animals (mean=2.43) while the least was physical attack by wild animals (mean=2.24).

Area of Competition between Wildlife and Human

As shown in Table 4, human activities such as farming, deforestation and grazing (mean=4.54) was the main reason for conflicts between human and wildlife, followed by increasing need for land for developments (mean=4.52), natural factors such as drought that pushed animals to human habitation (mean=4.24), water for

domestic animals (mean=4.05) while the least was natural factors that push human to animal habitation (mean=2.50).

Perception of Human population on Human-Wildlife Conflicts

Findings show that 72% of respondents agreed that increased human population along wildlife corridor and protected areas influenced human-wildlife conflicts in the study area (Figure 1).

Perceived indicators of Human Population increase and its impact on Human-Wildlife Conflicts in Wildlife corridors

Table 5 shows parameters that were used to evaluate indicators of human population increase and its impact on Human-Wildlife Conflicts in wildlife corridors. The result shows that human population contributes a lot in competition of resources between human beings and wildlife hence leading to conflict. 92% of the respondents agreed that migration of people for security reasons has led to increased conflict between people and wildlife. The increase population has also led to encroachment into protected area is factor that a whopping 100% of the respondents agree has led to human wildlife conflict. Emergence of trading centres always attracts people close to it for essential services and as per the findings; most people (92%) agree that the growth of the centres next to Kainji Lake National Park has contributed to human-wildlife conflicts. Catching poachers in a crowded area has not pose a serious challenge in the study area as 50% and 9% of respondents strongly disagreed and disagreed respectively with any difficulty in this regard.

Table 2: Demographic characteristics of the respondents (n=106)

Demographic characteristics	Frequency	Percentage
Sex		
Male	69	65.1
Female	37	34.9
Age		
≤ 20	4	3.8
21-30	43	40.6
31-40	36	34.0
≥ 40	23	21.7
Year of residency in the area		
1-10	56	52.83
11-20	20	18.87
21-30	13	12.26
31-40	8	7.55
40 and above	9	8.49
Primary occupation		
Civil servant	9	11.84
Farming	33	43.42
Trading	15	19.74
Artisan	4	5.26
Fishing	15	19.74

Source: Field survey, 2018.

Table 3: Indicators of human-wildlife conflict in the area

Variable	Means	Std. Dev.
Dangerous wild animals attacked residence	2.24	1.362
Some of my community residents have been killed by wild animal	2.67	1.278
Wild animal have raided and destroyed crops in our communities	4.65	0.050
Dangerous wild animals have killed livestock in local residence	2.43	1.324

Source: Field survey, 2018.

Table 4: Areas of competition between wildlife and human

Variable	Means	Std. Dev.
Need of land for human development	4.52	0.412
Impact of human activities such as farming, deforestation and grazing	4.54	0.408
Obstruction of water for domestic purpose	4.05	0.090
Natural factor like drought that push animal to human habitation	4.24	0.362
Natural factor like drought that push human to animal habitation	2.50	1.416

Source: Field survey, 2018.

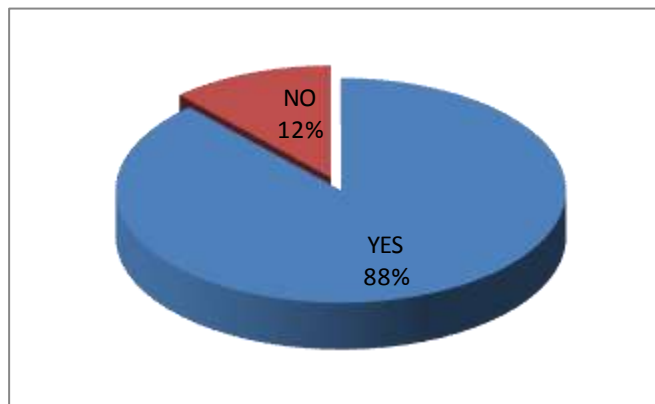


Figure 1: Perception of effect of human population on human-wildlife conflicts by respondents

Table 5: Perceived indicators of human population increase and its impact on human-wildlife conflicts along wildlife corridors

Variable	Means	Std. Dev.
Migration of people for security	4.45	0.454
Encroachment into protected area	5.00	0.000
Emergence of towns and trading centres next to park	4.93	0.090
Difficulty in catching up with poachers whenever they strike due to high population	2.24	1.362

Source: Field survey, 2018.

Perception to Approaches in management of human-wildlife conflict

In Table 6, the perception of management of human-wildlife conflicts in the park is presented. The highest perception was for 'KLNP has

corporate responsibility /community enterprise for the affected communities' while the least was KLNP has intensified fencing to bar wild animals from freely moving to human habitat.

Table 6: Perceived approaches in management of human-wildlife conflict

Variable	Means	Std. Dev.
Community awareness and education	2.37	1.51
K.L.N.P has developed compensation scheme for the affected people	2.42	1.52
K.L.N.P has developed voluntary relocation program for affected people	2.78	1.51
There is intense human vigilance by K.L.N.P ranger against attack by wild animals.	2.17	1.28
K.L.N.P has intensified its fencing to bar wild animals from freely moving to human habitat	1.78	1.10
Extermination of the marauding wild animal whenever we spot them to avoid future damage	2.00	0.000
K.L.N.P has corporate social responsibility/ community enterprise for the affected community	5.00	0.000

Source: Field Survey, 2018.

Discussion

From the study, majority of settlers around Kainji Lake National Park are farmers, and therefore are likely to require land for settlement and agriculture which may result in encroachment into the park. This is in agreement with Adelakun *et al.* (2015) who reported that socio-economic factors especially farming, has compelled people to abuse the use of National Parks in their quest for land for settlement and agriculture and this may result to conflict because of the human overlap with wildlife requirements resulting in costs to both native residents and animals (Distefano, 2004). The study findings show that most surrounding communities are aware of human-wildlife conflict in the study area as result of competition over resources between wildlife and human beings concurs that struggle amongst human and wildlife scarce natural resources is major source of Human-Wildlife Conflict globally (Madden, 2008). From the study, crops raiding and destruction by wildlife is the major problem faced by the surrounding communities'. This is in line with Nyangoma (2010) that crop raiding can affect people living around protected areas since the majority engaged in farming activities. It is further

evident from the study that increase need of land for developments are the major conflict agent between human and animal as well human activities such as farming, deforestation and grazing of domesticated animals, by encroaching to protected areas have led into competition over natural resources. This is in consonance with Kate (2012) who reported that human activities such as farming, infrastructure development and tourism can radically alter wildlife habitat. Study also indicated that natural factor like drought that push animal to human habitation by wild animals and human beings do exist. This is in agreement with Machoka (2017) that wild animal invade farms in search of fodder as a result of human obstruction of water in protected area for their domestic use especially during dry season.

According to the study, increasing human population on wildlife corridor and protected areas has influenced Human-Wildlife Conflicts in the study area. This agreed with Ogada *et al.* (2003) observation that conflict is most acute in areas in which a wide range of wildlife species co-exists with high density human populations. Human population increases and its impact on Human-Wildlife Conflicts in wildlife corridors had earlier being

envisaged (Akosim *et al.*, 2010); that population increase may be witness as result of marital status in the study area and this will mount more pressure on the park resources. This study also reflected that people migrate for security reasons while emergence of trading centres always attracts people close to it for essential services and this has led to increased conflict between people and wildlife. Approaches in management of human-wildlife conflict show that KLNP authority need to do more in sensitizing the local communities on importance of wildlife conservation as most locals disagreed to awareness of conservation education. This contradicts Akosim *et al.* (2010) who reported that the park authority has expended a great deal of efforts in educating the local residents. Respondents rejected any knowledge of compensation scheme for HWC affected people which implies that KLNP does not usually compensate affected people though it was unanimously agreed that KLNP has corporate responsibility to the affected communities. However, studies have earlier shown that when fringe communities of protected areas are forced to absorb the costs of living with wildlife, local support for conservation may be seriously undermined (Brandon *et al.*, 1998; Ogra and Badola, 2008).

Conclusion

From the research study results, it is revealed that farming and fishing are major occupation of people in the surrounding communities of Kainji Lake National Park. The findings revealed that increasing human population contributes a lot in competition of resources between humans and wildlife and this has also led to the increase in the said conflict. It is further shown that most of respondents agreed there is observed human encroachment on wildlife corridor due to need for settlement and farming which subsequently lead to wild animal raid on such farms. The study also shows that people are aware that Kainji Lake National Park has corporate social responsibility/ community enterprise for the affected community but not satisfied with the strategies put in place by the park hence. The park needs to do more to address cases of human- wildlife conflicts reported by people.

REFERENCES

- Abubakar, T.H.A., Aliyu, W.M. & Stopford, E.P.G. (1993). Appraising the Rural Communities impact on Kainji Lake National park in: *proceeding of 23 Annual Conference of Forestry Association of Nigeria (FAN)* pp 209-217.
- Adelakun K.M., Adeola A.J., Halidu S.K., Bakare K. & Omole E.B. (2015). Socio Economic Activities of Rural Community & their Perception on Conservation in Okomu National Park, Nigeria. *Int. J. of Devt. Strat in Hum. Manage. & Soc. Sci.*, 5(1): 103-115.
- Ajayi, S.R. & Ogunjobi, J.A. (2015). Composition of Large Mammal Day-time visitation to salt lick sites inside Kainji Lake National Park, Nigeria. *Wildlife Journal of Science* Vol. 17 (2):335-340.
- Akosim C., Bode A.S., Kwaga B.T. & Dishan E.E. (2010). Perceptions & Involvement of Neighbouring Communities of Kainji Lake National Park towards the Parks Conservation Programmes. *Journal of Research Forestry, Wildlife & Environment*, 2(1):44-59.
- Aremu, O.T., Onadeko, S.A, Ola-Adams, B.A. and Inah, F.I. (2007) Population Parameters and Biomass of African Buffalo (*Syncerus caffer*) in Kainji Lake National Park, Nigeria. *Journal of Applied Sciences*,7(13):1809-1812.
- Ayeni, J. S. O. (2007). Participatory management plan in Kainji Lake National Park. *ENVIRON-CONSULT: Lagos*. 156p.
- Brandon, K.; Redford, K. H. & Sanderson, S. E. (ed). (1998). *Parks in peril. People, politics and protected areas*. Washington, D.C: Island Press.
- Chape, S., Blyth, S., Fish, L. & Spalding, M. (Compilers). (2003). *2003 United Nations List of Protected Areas*. Gland, Switzerland and Cambridge, UK: IUCN, UNEP-WCMC.
- Child, G.F. (2002). A Historic perspective of Wildlife Conservation in Southern Africa. *Sustainable use Specialist Group Symposium on wildlife and land use. Held in Pearl, South Africa* in May, 2002. Pp 10-17.
- Distefano, E. (2004). Human-Wildlife Conflict Worldwide: collection of case studies, analysis of management strategies and good practices. *FAO*.
- Eniang, E.A.; Ijeomah, H.M.; Okeyoyin, G. & Uwatt, A.E. (2011). Assessment of Human Wildlife Conflicts in Filinga Range of Gashaka Gumti National Park, Nigeria. *PAT*, 7 (1): 15-35, 2011.
- Food and Agriculture Organisation (F.A.O) (2015). *Sustainable Wildlife Management and human-wildlife conflict*.
- Goodwin, H., Kent, I.J., Parker, K.T. & Walpole, M.J. (1998). *Tourism, conservation and sustainable development; case studies from Asia and Africa*.

- Wildlife and Development Series, No. 12. IIED, London.
- Kate K. (2012). Possible strategies/practices in reducing wild animal (primate) crop raids in unprotected areas in Hoima District, Uganda. *A report to the PLCG-Uganda*.
- Ladan, S.I. (2014). Examining Human Wild Life Conflict in Africa International Conference on Biological, Civil and Environmental Engineering (BCEE-2014) March 17-18, 2014. Dubai (UAE)
- Machoka L.N. (2017). Factor Influencing Human Wildlife Conflict in Communities Surrounding protected Areas: A Case of Kenya Wildlife Service Focusing on Maasai Mara National Reserve, Narok County, Kenya. University of Naqirobi, Kenya. Unpublished Masters of Art (M.A).
- Madden, F. (2004). Creating coexistence between humans and wildlife: global perspectives on local efforts to address human–wildlife conflict. *Human. Dimension. Wildlife*, 9, 247–257.
- Madden, F.M. (2008). The Growing Conflict between Humans and Wildlife: Law and Policy as Contributing and Mitigating Factors. *Journal of International Wildlife Law and Policy*, 11:189–206.
- McGregor, J. A. (2005). Crocodile crimes: people versus wildlife and the politics of postcolonial conservation on Lake Kariba, Zimbabwe. *Geoforum*, 36 (3):353-369.
- National Park Service (2002). An assessment of vegetation types in Kainji Lake National Park, Borgu Sector, Niger State. Unpublished Report. Pp 1-6.
- National Park Service (2012). An assessment of vegetation types in Kainji Lake National Park, Borgu Sector, Niger State. Unpublished Report. Pp 1-10.
- National Population Commission (2015). Population and Housing Census 2015. NPC.
- Nyangoma, J. (2010). The Impact of Crop Raiding by Wild Animals from Bugoma Forest Reserve on Farmer's Livelihoods. Makerere University, Uganda: Unpublished thesis Masters of Science (M.Sc.).
- Ogada, M. O., Woodroffe, R., Oguge, N. O., & Frank, L. G. (2003). Limiting depredation by African carnivores: the role of livestock husbandry. *Conservation Biology*, 17(6): 1521–1530.
- Ogra, M. & Badola, R. (2008). Compensating human–wildlife conflict in protected area communities: Ground-level perspectives from Uttarakhand, India. *Human Ecology*, 36, 717–729.
- Oseomeobo, G.J. (1992). Traditional Land use System and environmental degradation in Nigeria: *proceeding of the 23 Annual Conference of FAN E.A. Aduwaye Ed.* Pp. 11-22.
- Putney, A. (2003). Introduction: Perspective on the values of protected areas. In: Harmon, D. and A. Putney (Eds). *The full value of parks: From economics to the intangible*. Lanham, MD, USA: Rowman and Littlefield Publishers.
- Roe, D., Leader-Williams, N. & Dalal-Clayton, B. (1997). *Take only photographs, leave only footprints: the environmental impacts of wildlife tourism*. Wildlife and Development Series, No. 10, IIED, London.
- Shibia, M. G. (2010) Determinants of Attitudes and Perceptions on Resource Use and Management of Marsabit National Reserve, Kenya. *Journal of Human Ecology*, 30(1): 55-62.
- Treves, A. & Karanth, K.U. (2003). Human-carnivore conflict and perspectives on carnivore management worldwide. *Conservation Biology*, 17 (6):1491-1499.
- Woodroffe, R. & Ginsberg, J.R. (1998). Edge effects and the extinction of populations inside protected areas. *Science*, 280: 2126-2128.
- WWF-SARPO. (2005). *Human wildlife conflict manual*. Harare, Zimbabwe.