

Hunting Practices and Biodiversity Conservation Among Rural Dwellers in Cross River State, Nigeria

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Abstract

The purpose of this study was to ascertain the extent to which hunting activities influence biodiversity conservation among rural dwellers in Cross River State, Nigeria. To achieve the purpose of the study, one null hypothesis was generated to guide the study. A correlational survey research design was adopted for the study. The sample for the study consists of four hundred and ninety-nine (499) registered farmers with the Agricultural Development Programme in Cross River State. 5% of the population were selected from forty (40) communities across ten (10) LGAs in the study area. Multi stage sampling procedure was adopted to select the LGAs, communities and respondents therein for the study; the testing of hypothesis in the study was done with simple and multiple regression statistical tools. The result obtained from the data analysis revealed that hunting practices were significant predictor of biodiversity conservation among rural dwellers in Cross River State. It was therefore recommended among others that conservation agencies should collaborate with traditional institutions to ensure that hunting practices are properly

maintained and controlled in the communities, this would help to reduce unsustainable exploitation of the biodiversity among rural dwellers.

Key words: hunting practices, biodiversity, and conservation

Introduction

Biodiversity provides valuable bio-resources that support the existence of man on earth. In addition, biodiversity also provides unquantifiable services to human. The services include nutrients and water cycling, soil formation and retention, resistance against invasive species, pollination of plant and regulation of climate as well as pest and pollination control. According to Egbonyi et al (2025) indigenous and rural communities are among those least responsible for climate change, yet they are often the first to suffer from its impacts. Anthropogenic activities over the years have continued to put pressure on existing ecosystem, which have led to endangerment and extinction of various species of plants and animals. The alteration in the activities and functions of ecosystem has necessitated various stakeholders in environment to clamour for an urgent redress of certain conducts that impinge on the quality and sustainability of various ecosystems due to climate change (Anakwe, 2021).

The current trend in human demand for arable land for agricultural production and other forms of development has resulted in widespread deforestation and loss of biodiversity. According to Egbonyi, et al (2023) in order to fulfil the desire to have a sustainable generation in terms of no poverty, good health and wellbeing, land needs to be explored to satisfy all these needs through agriculture and development. The increasing pressure on the forest resources has led to the endangerment and extinction of various species of plants and animals. The need to conserve the forest and its resources has a long history with the adoption of various approaches including sensitization of citizens on the values of such resources with the aim of reducing human dependence on the scarce resources of the forest (Otukwa, 2018). The forest is an essential natural resource of the environment which comprises both timber and non-timber forest products with each playing highly indispensable roles within the ecosystem, hence, the need to constantly utilize these resources in a manner that would ensure their availability at all times. This is commonly done by human beings, for food, recreation activities, to remove predators that are dangerous to humans, domestic animals and commercial purposes (Murphy, 2017). But according to Egbonyi, et al., (2022) the Nigeria rain forest is facing serious

degradation, more especially the degradation of the forest through the encroachment of the forest for cropping, hunting, and logging including the severe removal of vegetative cover...

Biodiversity is the variability among living organisms from all sources including terrestrial, aquatic and ecological complexes of which they are part of. This includes the diversity within and between species of an ecosystem. It is the wealth of life forms found on earth that describe nature's variety including both the number of frequency of plants and animal species as well as micro-organism and diversify living things (Akanimore, 2020). Hunting has long been a practice used to obtain meat for human consumption. Hunting can also be a means of pest control. However, excessive hunting has also contributed heavily to the endangerment and extinction of many animals. Itoibrook, (2016) asserted that hunting wildlife is commonly done by humans for food, recreation, to remove predators that are dangerous to humans, domestic animals or for trade.

Ode and Nsairu (2016) conducted a study to assess the impact of wildlife (animals) hunting in Otukpo Local Government Area of Benue State, Nigeria towards tackling the threatening extinction of wildlife from their habitat in Nigeria. Structured questionnaire and interview were employed to obtain information from 150 sampled respondents (hunters). Data were analyzed using SPSS version 16.0. Results of the research study showed that most hunters in the study area hunt mainly for the purpose of income and meat for domestic diet protein. Hunting is causing serious threat to biodiversity and thereby leading to the extinction and decline in animal's population, outbreak of diseases such as Ebola virus disease (EVD) in and around the study area. Habitat loss, fragmentation, degradation, pressure from human population, loss of forest to alternate land use and other exploitation are the causes of the extinction of wildlife in the study area. As a result of that, it was opined that, government at all levels and all the stakeholders that are involved in this sector should have provided sources of income and protein, establish game reserves, demarcate protected areas and sanctuaries, enact laws and regulations on hunting, give loans to farmers and enlighten the general public on the importance of wildlife conservation and the effect of wildlife hunting towards achieving sustainable development goals. The finding of the study was deemed necessary for review as a result of its implication in the sustainable development goals.

Hunting practices has really resulted to biodiversity loss. The widespread of activities of hunting has come under increasing scrutiny based on ethical concerns and the argument that it can threaten species and fail to contribute meaningfully to

local livelihood. Hunting activities are eroding biodiversity and land use changes are historically the most influential drivers of biodiversity loss (Salawu, 2018). Strict protection or legislated restrictions on hunting activities can be appropriate actions in response to unsustainable rate of hunting activities that affects biodiversity negatively (Choa, 2016). Hunting activities can be divided into three broad categories: (i) Subsistence hunting (food for own consumption), (ii) Commercial hunting (sales of animal products to a consumer community in local, national or international markets) and (iii) Recreational hunting (recreational hunting can be broadly defined as the pursuit and killing of animal primarily for leisure and enjoyment purpose).

In research conducted by Solotu, Akanbi and Tyowua (2017) on the impact of human wildlife conflict on socio-economy of support zone communities in Cross River National Park, Nigeria, one of 25 United Nations biodiversity hotspots in the world, to bring to focus the implications of human wildlife conflict on the socio-economy of support zone countries. The finding shows that biodiversity conservation of Cross River State National Park (CRNP) is threatened by human population growth. It poses a threat of overexploitation of wildlife resources on the park as the communities depend majorly on the land and the park's resources for survival. They noted the problem of human wildlife conflicts is that of resources utilization. The aforementioned reviewed studies are found relevance to the present study in that among other things; it sought to highlight the needs for hunting activities as a factor against biodiversity conservation in the study area.

The basic human life-support system of the biological environment has always been characterized by change, an inevitable consequence of all human land use throughout history. Seemingly natural or pristine ecosystems have been altered significantly by humans induced variability from time immemorial. The low human populations, practice of sustainable traditional agriculture, fishing, and animal husbandry as well as limitation of land use to a relatively smaller segment of the population using simple tools on smaller land areas has however, ensured the sustenance of soil fertility without the use of agro-chemicals. Biodiversity conservation was thus achieved through environmentally-friendly traditional human cultural practices and beliefs (Anabaraonye, Amaechi, Okolo, Adeniyi & Nwobu, 2022). To raise the people's consciousness of the benefits of biodiversity conservation, need participation from all the people in the local communities who have knowledge, good understanding as well as proper practices. This informed the basis for investigating hunting practices and biodiversity conservation among rural dwellers in Cross Rivers State, Nigeria.

Theoretical background

The study was based on the Biocentric Theory that was propounded by Robert Lanza in 1997. The theory holds that nature is sacred and as such should be revered or respected. This theory apart from emphasizing man's interdependence with nature, it further holds that the living and non-living things were created before man and therefore have their own right of existence in spite of man. The emphasis of this theory is that man should live tenderly with nature in mutual or symbiotic existence. African culture and most indigenous cultures the world over before the advent of Colonialism was actually given to the biocentric world-view and value judgement about nature. In fact, not only were the Africans or native tribes' conscious of their interdependence with nature, they even went as far as ascribing supernatural power to nature. All these made it imperative to conserve nature. The implication of this theory to the present study is that the biocentric theory promotes and lays the foundations for forest resources conservation and management of various levels. This theory is against Wanton destruction and unsustainable exploitation of forest resources and emphasizes that man is not superior to nature but should live in mutual or symbiotic relationship with it. Thus, considering the right of these natural resources to exist within the environment and their irrelevance to him justifies the view point of the biocentric theory. This theory is the basis for sustainable utilization and management of forest resources as well as sustainable development. Based on these, the conservation of forest resources takes its roots from the value judgement of this theory.

Statement of the problem

Humans are constantly in a variety of activities like deforestation, logging and hunting activities that degrade the quality and well-being of the forest ecosystem. The need to develop positive attitude towards the exploitation of forest resources especially hunting of wild animals has become very necessary because of the continuous depletion of forest resources through various human activities aimed at providing for the needs and protein source of man. Despite the efforts of government and non-governmental organization in promoting rational and sustainable exploitation of forest resources, the manner in which some rural dwellers still exploit forest resources has become a source of concern to various stakeholders in the forest sector (in most cases hunters go home with animal eggs and pregnant females when seen). Some of the intervention efforts introduced has been awareness creation on the value of forest resources as well as provision of alternative sources of livelihood. These efforts have yielded little or no positive results as most rural dwellers still see the forest as a gift from nature, which should be exploited without any conscious effort to conserve it. This has led to the loss of biodiversity and extinction of several

species of plants and animals. This informed the researcher's resolve to carry out research on hunting practices among rural dwellers and biodiversity conservation in Cross Rivers State, Nigeria.

The purpose of the study was to determine the relationship between hunting activities and biodiversity conservation. Based on the purpose of the study a research question was posed to guide the study; how does hunting activities relate with biodiversity conservation? The research question was transformed into a null hypothesis to guide the study; there is no significant relationship between hunting activities and biodiversity conservation.

Methodology

The study adopted a correlational survey research design. It is a non-experimental method used to measure the statistical relationship between two or more naturally occurring variable without any manipulation by the researcher(s). It is utilized when research work is focused in obtaining and analyzing data from a few subjects considered as a representative of an entire population in line with an investigated phenomenon, with the expectation of generalizing such finding on the entire population as it sought to ascertain the relationship between the variables under study. The population of this study consist of all farmers in Cross River State, Nigeria, that are registered under the Agricultural Development Programmes across various local government areas. Records from the Agricultural Department Programme offices 2025 across the State showed that there are seventy-three thousand, seven hundred and fifty-five (73,755) registered farmers in the study area. The sample for the study consists of four hundred and ninety-nine (499) registered farmers with the Agricultural Development Programme in Cross River State. 5% of the populations were selected from forty (40) communities across ten (10) LGAs in the study area. The instrument for data collection was a structured questionnaire. It was tagged "Hunting Practices among Rural Dwellers and Biodiversity Conservation Questionnaire" (HPARDBCQ) the data generated was analysed to establish its internal consistency using Cronbach Alpha Reliability Coefficients method.

Presentation of results

The result of the study was presented, based on the hypothesis of the study as shown in table 1.

Table 1: Summary of data and descriptive statistics results on the extent of the influence of hunting practices on biodiversity conservation among rural dwellers in Cross River State, Nigeria (N = 499)

Items	Hunting practices	Mean	Std. Dev.	Decision rule
Item 1	The policy regulating hunting activities has help conserve the forest	2.86	.99	Agreed
Item 2	The indiscriminate hunting of wildlife impedes conservation	2.75	1.11	Agreed
Item 3	The freely hunting of animals on our forest has negatively affected biodiversity	2.91	1.02	Agreed
Item 4	Most of the bush meat consumed in my community is from our forest and has created harm to the forest	2.61	1.13	Agreed
Item 5	Hunting is not causing any danger to the forest in my community	2.90	1.09	Agreed
Item 6	Hunting is a major source of income in my community, and these practices constantly destroys the forest	2.99	1.04	Agreed
CM		2.84	1.06	Agreed

The result of the analysis is presented in Table 1. The result of the analysis revealed that the section presents the research participants' responses on the influence of hunting practices on the biodiversity conservation among rural dwellers in Cross River State. A criterion mean of 2.5 and above for positively worded items agreed that there was an influence of the sub-independent variable (hunting practices) on the dependent variable (biodiversity conservation), while a mean of below 2.5 revealed otherwise to the statement under review. However, a criterion mean of 2.5 and below for negatively worded items also revealed that there was an influence of one variable on the other, while a mean of 2.5 and above for negatively items also revealed no influence existed among both variables. These two options were used in answering the research questions as stated above. The data was analyses to determine if there was an influence of the sub-independent variable (hunting practices) on the dependent variable (biodiversity conservation) at the study area. The result as indicated in item one revealed that policy regulating hunting activities has help conserve the forest. This result conforms the mean threshold value of over 2.5.

In a similar development, the result of items two and three also revealed that indiscriminate hunting of animal and wildlife impedes conservation and destroys biodiversity. Furthermore the results of item four to six further revealed that the hunger for bush meat consumption which also serves as a major source of income

has caused danger and harm to the forest and has created harm to the forest. These results also confirmed the mean threshold values of >2.5

In summary, the cumulative mean result ($\pi = 2.84$; $SD = 1.06$) revealed that there was an influence of hunting practices on the biodiversity conservation among rural dwellers in Cross River State

Discussion of findings

This research hypothesis which addressed the influence of hunting activities on biodiversity conservation among rural dwellers revealed that there was a significant influence of hunting activities on biodiversity conservation among rural dwellers in cross River State. Result of the analysis shows that the calculated F-ratio of 9.507 was significant at a p-value of .002 using 1 and 497 degree of freedom. This shows that the predictor variable (hunting activities) significantly predicted the criterion variable (biodiversity conservation).

This research hypothesis which addressed the influence of hunting activities on biodiversity conservation among rural dwellers revealed that there was a significant influence of hunting activities on biodiversity conservation among rural dwellers in Cross River State. This result also supports Murphy (2017) who noted that hunting is a cultural practice in most communities that relate with attitude towards forest resources conservation. Hunting is an important economic activity in the Savannah ecosystems, and most hunters set fires to drive out game in hunting. In the forest ecosystem, indiscriminate bush burning has been one of the major factors in the change of forest to woodland, woodland into Savannah and Savannah into Shrub land. The Sudan and Guinea grasslands are anthropogenic climax communities maintained by grazing, bush burning and crop cultivation and they will revert to scrub and then woodland and forest if these controlling factors are removed. In Ghana, using fire in hunting is mainly for meat. These fire problems arise from the lack of alternative sources of protein/meat and wildlife by-products. They also result from ignorance of better technique of hunting since meeting protein to individuals who engage in activities which promote livestock productive to produce more meat so as to reduce the pressure on wildlife. This result further conforms Ode and Nsairu (2016) who noted that hunting is causing serious threat to biodiversity and thereby leading to the extinction and decline in animal's population, outbreak of diseases such as Ebola virus disease (EVD) in and around the study area. Habitat loss, fragmentation, degradation, pressure from human population, loss of forest to alternate land use and other exploitation are the causes of the extinction of wildlife in the study area. As a result of that, government at all levels and all the stakeholders that are involved in this sector should provide the following sources of income and protein, establish game reserves, demarcate protected areas and sanctuaries, enact

laws and regulations on hunting, give loans to farmers and enlighten the general public on the importance of wildlife conservation and the influence of wildlife hunting towards achieving sustainable development goals. Biodiversity conservation of Cross River State National Park (CRNP) is threatened by human population growth. It poses a threat of overexploitation of wildlife resources on the park as the communities depend majorly on the land and the park's resources for survival. They noted the problem of human wildlife conflicts is that of resources utilization

Conclusion

Based on the study's findings, the following conclusion was reached; that hunting activities impedes biodiversity conservation in the study area.

Recommendations

Based on the finding and the conclusion of the study, the researchers recommended the following;

1. The Governments and local communities should work together to develop and promote sustainable hunting practices. This could include setting limits on the number and types of animals that can be hunted, promoting traditional hunting methods, and implementing seasonal hunting bans to allow wildlife populations to recover.
2. Governments must have strong enforcement mechanisms in place to ensure that laws and regulations related to biodiversity conservation are being followed. This can include fines and penalties for illegal hunting activities, as well as incentives for those who comply with regulations.

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