

## Impact of Agricultural Activities in Boundary Communities on Wildlife Management in the Old Oyo National Park, Nigeria

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### ABSTRACT

Structured questionnaire was administered in six (6) sampled communities at the boundary of Old Oyo National Park. The communities were purposely chosen due to their proximity to the park. The questionnaire was designed to collect information on the encroachment of agricultural activities on the park. A total of hundred and twenty (120) respondents were randomly selected and interviewed. The study revealed the inhabitants of the communities encroached on the park land for farming (100%) while the water bodies of the park and its banks are used for fishing purposes (86%). Also the boundary agriculture communities utilized the park by poaching on the wild animals and looping the trees to enhance hunting expedition during festivity periods in their communities. The respondents identified some species of fishes that spawn within the park water bodies, the most prevalent being *Tilapia zilli*, *Clarias angularis* and *Hemichromis faciatus* and the least being *Eutropius niloticus*. The agricultural communities interacted with during the period of this survey did not support the total management of anti poaching control on the park resources, but agreed to selective control of the park resources to check the excessive fauna and flora loss through agricultural activities. The respondents identified some communities that most engaged in grazing their livestock within the park boundary communities, the most prevalent being Alaguntan (18%) and the least being Oloka (9%).

**Key words:** Agricultural impact, old Oyo National Park, poaching, wildlife management.

### INTRODUCTION:

Nigerian wildlife parks are strictly zone across the habitat associated with the principal ecological zones in Nigeria. The ecological zones include mangrove swamp, fresh water swamp, lowland rainforest, derived savanna, guinea savanna, sudan savanna, sahel savanna and mountainous zones (Hopkins 1965). However, parks are mostly located in the savanna ecosystem as those in other tropical regions of the world. These wildlife parks are areas set aside for the protection, propagation and preservation of wild animals and wild vegetation, and for the preservation of object, aesthetic geologic prehistoric, archaeological artifacts and other scientific interest for the benefits, advantages and enjoyment of mankind.

These wildlife enclaves are biologically productive and function as research laboratories, but increasing growth of human population growth increases, they can become threatened and hence regarded as a wasteful programmed through extinction caused by human activities. In Africa, the sub-Sahara wildlife resources are influenced by human population trends and related environmental factors. The main cause of deforestation is clearing for agriculture, but uncontrolled logging, gathering for fuel wood, fire and over grazing is also taking their toll (Asibey and Child 1990). The economic activities like fishing, agriculture, tourism and human settlement are

prone to have some degree of ecological impact on wildlife resources and these have been subjects of intensive study over years (Afolayan 1973; Olobo, 1997; and Obot 1984). Old Oyo National park is among the protected areas where wildlife is geared towards effective and meaningful management of its resources, so as to change the indifferent attitudes of the people to management of wildlife in the boundary communities. The Nigeria protected areas (park) were gazette in each zone of the six geo-political zones of the country towards attaining wildlife active position for their own acceptance value in our national heritage. There is dearth of information on the agriculture impacts on the wildlife management in the literature of Old Oyo National Park. Also, very little knowledge is known about its influence and degree of impacts on wild resources. Among the national parks which have been documented due to their agro-economic and cultural importance is Old Oyo National Park. Its cultural value (tangible features) are found in the relics of the then Oyo Empire in Oyo-Ile range land of the park. The protected areas (parks) are established to promote the national heritage and aesthetic/archeological features for its outstanding universal value from the point of view of history, art, or science. Little or no study has been documented on the agricultural impacts. Therefore, the objectives of this

study are to investigate some of the impact of agricultural activities, traditional/cultural background and assess the possible management policies that will provide information for the preparation of management plan and compressive standard master plan for the park in the Old Oyo National Park.

## MATERIALS AND METHOD

### Sampling Method/Techniques

The study was conducted in the Old Oyo National Park located in the south west Nigeria on latitude  $3^{\circ}55'$  and  $4^{\circ}42'$  N and longitude  $8^{\circ}15'$  E and  $9^{\circ}00'$  E. Six (6) local government areas namely Oyo (Esinele), Iseyin (Ajebandele), Saki-East (Lukutu), Oorelope (Alaguntan), Irepo (Sooro), and Orire (Oloka) were selected in the Old Oyo national park environment due to their proximity to the boundary. Questionnaires were administered in these selected areas. The total number of respondents chose was one hundred and twenty (120) which were randomly selected (20 in each) so as to allow equal opportunity for every person being chose to react independently. Prior to the administration of the questionnaires, the boundary of the communities in the six local government areas were visited for a formal introduction and interaction with the head of the agricultural communities (Baale) who served as link person. During the visit, a rough estimate number of households in each selected communities was made to determine the number of questionnaire to be administered in each of the villages. The tools used in the analysis were descriptive statistics such as means, frequency and percentages. The wild animals and plants species that associate with the park were identified by the respondent in their local names. The zoological names were identified by the researchers according to Ayodele (1989).

The relative frequency of the various fish species was calculated according to Kent and Coker (1992).

$$\text{Relative frequency} = \frac{\text{frequency of a species}}{\text{frequency of all species}} \times 100$$

The required data for this study were collected by means of structure questionnaire. The questions in questionnaires were translated into the local language of the people found in the survey area, (Yoruba & Hausa) by the interviewers and further notes were taken alongside with the structured questions. The necessary information's collected in agro-socio economic characteristics like (age, sex, education, status, traditional

used of wild animals, merit and demerit of the wild animal to the communities and livelihood of the respondents). The questionnaires were also designed to elicit information on the ecological and agricultural implications of the wild animal.

### RESULTS:

The study indicates that most of the respondents are males (83%). Majority (83%) Of the respondents are between the ages range of 21-50years. Eight-six (86%) percent are married while only 14% are not married (Table 1). The study comprises of different ethnic groups. The majority (73%) of the respondents are Yoruba's, (16%) are Hausa/Fulani while (11%) are the foreigners (Table2). All the respondents utilized the park boundary land for the agricultural activities, (8.3%) utilized the park water bodies for fishing, (46%) utilized the park land for hunting and (28.2%) utilized the park land for grazing of their livestock and (17.5%) utilized the park land for farming (Table3). According to the respondents, the most prevalent wild animal species commonly found along the riverine areas of river Ogun, Owe and Owu within the park water body are water buck, *kobus defassa*, Duikers, Oribi *Ourebia ourebi*, warthog, *Phacochoerus aethiopicus*, kob, *kobus kob*, western hartebeests, *Alcelaphus buselaphus*, and Roan antelope, *Hippotragus equines*. The study also revealed the most prevalent park flora species commonly found in the park environ to include *Azalia African*, *Khaya senegalensis*, *Tamarindus indica*. Its was also observed in the study that the most prevalent fish species found the park water bodies (River Ogun, Owu, and Owe) are *Hemichronis faciatus*, *Clarias angularis* and *Tilapia zilli*, (16-17%), the moderately prevalent species are *Heterobranchus bidorsalis*, *Heterotis niloticus* and *Lates nilotius* (11-13%), and least prevalent species are *Eutropius niloticus* and *Hepsetus odoe* (9-10%) (Figure 1). It was also revealed in the study that the most prevalent grazing activities are found in the park communities such as Sooro, Alaguntan and Ajandele (16-18%), the moderately prevalent grazing communities are Lukutu, Esinele, and Tessi (13-14%) and the least prevalent grazing community is Oloka (9%) (Figure2).

TABLE 1: Demographic characteristics of the respondents in the surrounding community to the park land

Variables	Categories	Frequ	Percentage
Age	21-30	30	25
	31-40	44	37
	41-50	26	21
	Above 50	20	17
Gender	Male	96	80
	Female	24	20
Educational Occupation	Formal education	08	07
	Informal education	106	88
	No education	06	05
Other Occupations	Farming	62	52
	Fishing	24	20
	Hunting	14	12
	Grazing	16	13
	Civil service	04	03
Marital Status	Married	103	86
	Single	17	14

Table 2: Distribution of Respondents by Tribal Identification.

Tribes	Frequency	Percentage
Yoruba	88	73
Hausa/Fulani	19	16
Foreigners (Benin and Togo Republic)	13	11
Total	120	100

Source: Field survey 2005

Table 3: Distribution of respondents according to various agricultural purposes of park land utilization.

Agricultural purpose	Frequency	Percentage
Fishing	10	8.3
Hunting	55	46
Grazing	34	28.2
Farming	21	17.5
Total	120	100%

Source: field survey 2005

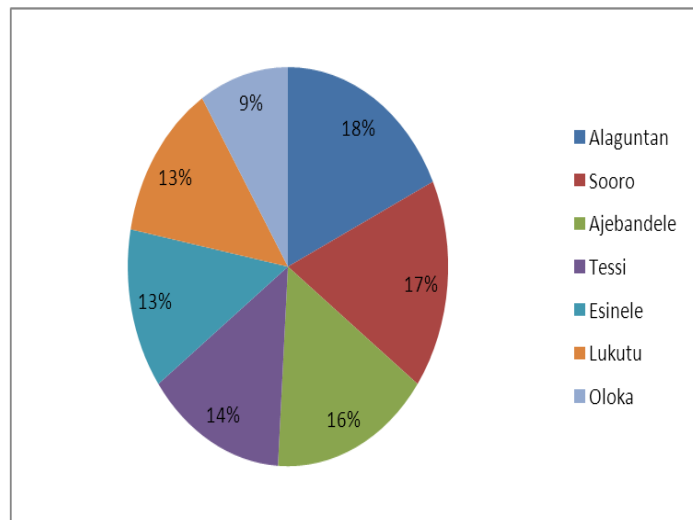


Figure 1: The relative frequency of the respondents on grazing communities in OONP boundary

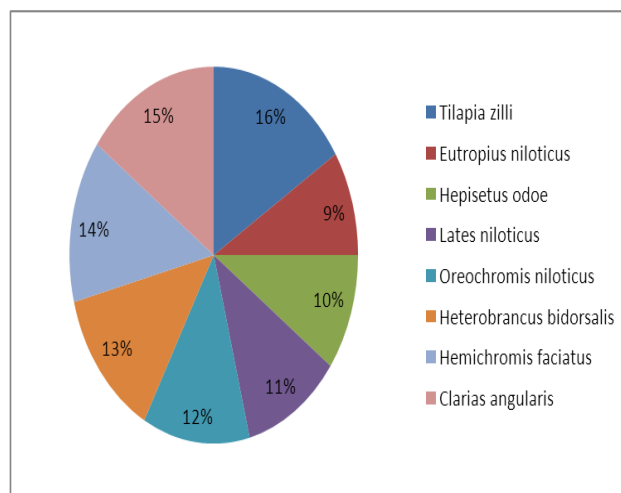


Figure 2: The relative frequency of respondents of fish species common in the water bodies of OONP.

Table 4: List of the Wild Animals in Old-Oyo National Park (OONP).

Common Name	Scientific Name
Aardvark	<i>Orycterepus afer</i> Pallas
Pangolin	<i>Manis (Uromanis) tetradactyla</i> Linnaeus
Warthog	<i>Phacochoerus aethiopicus</i> Alexandr pospech
Cane Rat	<i>Thryonomys swinderianus</i> Temminck
Water Buck	<i>Kobus (kobus) deffasa</i> Ogilby
Roan Antelope	<i>Hippotragus equines</i> Desmaest
Bush Buck	<i>Tragelaphus scriptus</i> Pallas
Oribi	<i>Ourebia ourebi</i> Zimmerman
Red Flanked Duicker	<i>Cephalophus rufilatus</i> Gray
Red Duicker	<i>Cephalophus c.natalensis</i> A.smith
Hartebeest	<i>Alcelaphus buselaphus</i> Pallas
Buffalo	<i>Syncerus caffer</i> Sparrman
Hare	<i>Lepus capensis</i> Linnaeus
Hunting dog	<i>Lycan pictus</i> Temminck
Lion	<i>Panthera leo</i> Linnaeus
Fox	<i>Vulpes pallida</i> Cretzschmar
Porcupine	<i>Hystrix cristata</i> Niki Foster
Africa Wild cat	<i>Felis silvestris</i> Schreber
Ground squirrel	<i>Euxerus erythropus</i> F.Geoffroy
Rock hyrax	<i>Procavia capensis</i> Pallas
Crown duicker	<i>Syvicapra grimmia</i> Linnaeus
Kob	<i>Kobus (adetona) kob</i> Erxleben

## DISCUSSION

It was observed that the majority of the respondents fall within the range of active ages in agricultural production and likewise, engage in various family responsibilities. The majority of the respondents had informal education while the percentage of those that neither had formal or informal education is insignificant. Base on this, it can be deduced that the respondents should be able to understand any innovation being introduced and give support to the awareness campaign programs in the area. It was also revealed that the agricultural communities around the Old Oyo National Park are comprised of different ethnic group which imply that the people in the study area may have different cultural belief and way of life. The formal and informal interview conducted revealed that the people in those communities of the Old Oyo National Park Boundary do make use of the park land. All the park resources were confirmed useful. These uses include cultivation of park boundary land for farming to sustain their living standard. The uses can be encouraged further as it has been done in developed countries for sustainable conservation management of

Baboons	<i>Papio anubis</i> Leasons
Crocodile	<i>Crocodylus niloticus</i> Guy Mcharen
Bat	<i>Eidolon helvun</i> Chris Taylor
Green monkey	<i>Cercopithecus aethiops</i> Linnaeus
Reed buck	<i>Redunca reedunca</i> Boddaert
Red River hog	<i>Potamochoerus porcus</i> Linnaeus
Sported hyaena	<i>Crocuta crocuta</i> Erxleben
Patas monkey	<i>Erythrocebus patas</i> Schreber
Colobus monkey	<i>Colobus polykomos</i> Zimmerman
Civet	<i>Viverra civetta</i> Schreber

Source: field Survey 2005

Table 5: List of some Medicinal Plants in OONP.

Family	Scientific Name
Biggoniaceae	<i>Kigelia africana</i> Lam Benth
Mimosoideae	<i>Parkia biglobosa</i> Jacq
Sapotaceae	<i>Vitellaria paradoxa</i> C.F.Gaerth
Caesalpinianaceae	<i>Azalia Africana</i> S.M expers
Caesalpinioideae	<i>Daniellia oliveri</i> Rolfe Hutch and Dalz
Combretaceae	<i>Anogeissus leiocarpus</i> D C Guill
Meliaceae	<i>Khaya senegalensis</i> Desr. A. juss
Anacardiaceae	<i>Mangifera indica</i> Linnaeus
Caesalpinioideae	<i>Piliostigma thonningii</i> Schumach, Milne-Redh
Compositae	<i>Vernonia amygdalina</i> Linnaeus
Combretaceae	<i>Terminalia Myrcaptera</i> Linnaeus

Source: field survey 2005

wildlife species and other beneficial purposes. The prevalent of the agricultural activities on the park boundary land by the communities was caused by the lack of insufficient cultivated land. The study also revealed that the poverty rate within the country, which had resulted to massive drift of young men to the rural areas along the Old Oyo National Park lead to encroachment by the boundary land communities. The study revealed that when palatable plant species become rear or scarce, animals must graze less desirable plant, which results from uncontrolled over grazing which made the secondary growth species vanish within the ecosystem. Defoliation of plant changes the biological composition, total nutritional need, and the future production of any range land Massalatchi (1992). The result also revealed that participation of the park communities in hunting of wild animals and other resources has an obvious detrimental effect Clarke (1958). The study observed that all source of agricultural activities by the boundary communities pose serious detrimental effect on the management of wild life resources. In Nigeria, there is need to carry out a detailed

investigation study on the species ecology, biology and the possible management of park resources in relation to man for proper evaluation and documentation. The study had shown that agricultural activities pose ecological threat to the fauna population in Old Oyo National Park. Based on the information gathered from the respondents, the boundary activities in Old Oyo National Park symbolize their destructive activities as it served as an index for some species of wild animals. Though none of the respondents interviewed engaged in group hunting, fishing and grazing activities but there is need to carry out study on the relationship of park management with group agricultural activities.

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