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## ATTITUDE AND PERCEPTION OF RESIDENT COMMUNITIES ADJACENT OLD OYO NATIONAL PARK TO CROP RAIDING

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**ABSTRACT:** This paper examined the attitude and perception of residents of adjoining communities of Old Oyo National Park to crop raiding. Primary data were collected and used for the study. Purposive sampling technique was used to select Marguba and Tede ranges out of the five ranges at OONP due to the prevalence of agricultural practices and crop damage. Furthermore, twelve communities were selected purposively based on their proximity to park boundary i.e. communities that fell within 20 Km distance away from the park buffer zone. Non probability snowballing method was used in the selection of the respondents. A total of 60 copies of questionnaires were administered to farmers in villages at Marguba Range while 170 copies of questionnaires were administered to farmers in villages at Tede Range. Data were analysed using descriptive statistics and Likert scale. The result revealed that majority of the farmers were using scarecrow (33%) and guarding (30%) in the control of wild animals on their farmlands. Furthermore, the result shows that 46.1% of the respondents rated the effectiveness of the control measure as poor, 33.5% rated the effectiveness as fair and 20.4% rated the effectiveness as good. The majority of the farmers ( $4.63 \pm 0.03$ ) strongly agreed that wildlife crop raiding has affected them and their livelihood in the study area and ( $4.61 \pm 0.04$ ) also reported on the need to involve local people in the management of the park. The study concluded that the high animal density and the closeness of farms to the boundaries of the Park were the major factors promoting crop damage. It is therefore recommended that farmers should be discouraged from sitting farms near Park buffer zone to avoid crop raiding by wild animals.

**Keywords:** Wildlife, Conservation, Interactions, Protected areas and Mitigating techniques

### 1. INTRODUCTION

Humans and wildlife have had a long association and, in many instances, have antagonistic relationships (Fuentes, 2006). This antagonism is often due to nutritional reliance on similar foods (Paterson, 2005). However, with increasing conversion of forest to agriculture, crops have become vital supplements to the diet of many non-human primates and will be important for their conservation (Estrada, 2006). Crop-raiding by wild animals is increasingly known to be a source of conflict between the animals and human, perhaps especially along the boundaries of protected areas (Gillingham and

Lee, 2003; Linkie *et al.*, 2007; Riley, 2007). The losses incurred by farmers may make communities living close to protected areas antagonistic and intolerant towards wildlife, which can undermine and impede wildlife conservation strategies (Nyhus *et al.*, 2000). Farmers have adopted several mitigating measures to prevent crop raiding wild animals from their farms, using traps, poison baits, dogs, guns, spears, bows and arrows, and wire snares to protect their crops. These non-species-specific and frequently lethal methods may have deleterious structural and behavioural effects on populations of wildlife, many of which may already be endangered as a result of habitat loss (Plumptre and Reynolds, 1994).

These methods are used either individually or in combination. Selection of the method to use depends on size of the fields, crop grown, and availability of labour to guard and vulnerability of the crop to available raiders. Techniques largely depend on the crop raider and the region as many of the techniques are very costly and time consuming to farmers. Farmer's inability to mitigate crop-raiding adequately and the absence of compensation schemes may lead to vengeful killing of problem species (Jackson and Wangchuk, 2001; Nyhus *et al.*, 2005).

In the case of Africa, antagonistic relationships between human and wildlife have been exacerbated by the increasing amount of land under cultivation with crops that are very attractive to primates (Hill, 2000). Subsistence farmers living adjacent to protected areas and forested areas have borne the bulk of the crop depredation associated with wildlife (Guerbois *et al.*, 2012). Landowners, traditional land-users and even wildlife managers still sometime deliberately kill species they consider a threat from elephants to birds such as *Quelea* sp. with a view to reducing the population or even exterminating species within the locality. The continued negative attitude of communities towards wildlife emanates from losses (including human life, property, crops and even agricultural land set aside for conservation purposes) incurred by wildlife. The association of wildlife with damage is now so integrated in the minds of local populations that they will even blame beneficial species. Such negative interactions between people and animals from protected areas hinder both conservation area protection and wildlife management. This paper investigated the attitude and perception of respondents to wild animals and the control measures set against crop raiding in Old Oyo National Park in Nigeria.

## 2. MATERIAL AND METHODS

### 2.1. Study Area

This study was conducted in Old Oyo National Park, Oyo State. The Park is located across northern Oyo State and Southern Kwara State of Nigeria. It is rich in flora and fauna resources. The nearest cities and towns adjoining the Park include: Saki, Iseyin, Igboho, Sepeteri, Tede, and Igbeti which have their own commercial and cultural attraction for tourism. The National Park originated from two earlier native administrative forest reserves namely; Upper Ogun established in 1936 and Oyo-Ile established in 1941. These were converted to Game Reserves in 1952, then combined and upgraded to the present status of a National Park in 1979. Old Oyo National Park is made up of 5 ranges which are: Oyo-Ile, Sepeteri, Yemoso, Tede and Marguba ranges (Oyeleke *et al.*, 2015).

### 2.2. Sampling procedure and sample size

Purposive sampling technique was used to select respondents for the study.

Stage 1: Two (Tede and Marguba) of the five ranges (Oyo-Ile, Sepeteri, Yemoso, Tede and Marguba ranges) in Old Oyo National Park were selected for sampling due to intensive agricultural activities and prevalence of crop damage. Each primary selection unit denotes a stratum.

Stage 2: From each stratum, purposive selection was done in Tede and Marguba, resulting to the selection of seven (7) and five (5) villages respectively. The selected villages were within 20km radius from the park boundaries.

Stage 3: Non probability snowballing method was used in locating and sampling affected respondents.

### 2.3. Data collection

Two hundred and thirty (230) questionnaires were administered to all the affected farmers in the study area. Non probability snowballing method was used in locating and sampling affected respondents. Snowball method technique is a non-probability sampling method used when desired sample characteristics is rare as used by Oduntan *et al.* (2012) until 25 affected farmers were sampled in each village. However, except in villages where the farmers were not up to 25.

### 2.4. Data analysis

Descriptive statistics was used to analyse data obtained from Likert scale analysis that was adopted to determine the attitude and perception of farmer to crop damage by wild animals in the study area. This was done by applying fifteen (33) validated Perception statements against a five (5) point Likert scale ranging from Strongly agree (SA) = 5 points with real limits of 4.50-5.00, Agree (A) = 4 points with real limits of 3.50-4.49, Indifference (IND) 3 points with real limits of 2.50-3.49, Disagree (D) = 2 points with real limits of 1.50-2.49 and Strongly Disagree = 1 points with real limits of <1.5. Thus based on the principle, mean values <1.5 were interpreted as strongly disagree, mean values from 1.50-2.49 were interpreted as Disagree, mean values from 2.50-3.49 were interpreted as Indifference, mean values from 3.50-4.49 were interpreted as Agree and mean values from 4.50-5.0 were interpreted as Strongly Agree. The analysed results from the study were presented in Tables and Figures such as bar chart, pie chart.

Table 1: Sampling plan for the study area

Selected Ranges	Total respondents	Selected communities	Number of respondents
Marguba	60	Imodi	25
		Alapata	15
		Abanla	8
		Aba Owotu	6
		Odo Ogun	6
Tede	170	Elede	25
		Oke owu	25
		Ekeje	25
		Agric	25
		Ajebandele	25
		Alakuko	25
		Onire	20

### 3. RESULTS

#### 3.1. Control measures adopted by the respondents and the effectiveness

Figure 1 shows the method of control used by the farmers to mitigate effects of crop raiding activities. The control measures used by the respondents included scarecrow (33%), guarding (30%), gun (7%), bottle (3%), cassette tape (2%) and gong (2%). Furthermore, 2% adopted the combination of scarecrow and guarding while 21% do not use any of the technique. The effectiveness of the control measures adopted in the study area were presented in fig 2. The result shows that (46.1%) of the respondents control measure effectiveness were observed to be poor while (33.5%) were observed to be fair and (20.4%) were observed to be good.

#### 3.2. Farmer's perception on crop raiding

Farmer's perception on crop raiding was summarized in Table 2. People's livelihood has been strongly agreed upon by most respondents across the villages as indicated by the mean value of Alakuko (4.48), Oke owu (4.56), Onire (4.90), Odo Ogun (4.83), Abanla (5.00), Elede (4.16), Alapata (5.00), Ajebandele (4.28), Agric (4.80), Ekeje (4.56), Imodi (4.16), Aba Awotu (4.83) while the total mean was 4.63 which imply that respondents in the study area strongly agreed that crop raiding affects people's livelihood due to destruction of agricultural crops.

Furthermore, across the study villages, most of the respondent agreed that farmlands are raided frequently as confirmed by the mean value of Alakuko (4.44), Oke owu (4.51), Onire (4.50), Odo Ogun (4.83), Abanla

(4.75), Elede (2.98), Alapata (4.80), Ajebandele (4.80), Agric (4.48), Ekeje (4.43), Imodi (4.40), Aba Awotu (4.83) while the total mean was 4.22 which infer that most respondents agree to the fact.

#### 3.3. Farmers perceived damage control measures in the study area

Farmers perceived damage control measures was summarized in Table 3. One of the perceived methods of damage control measures, local participation was strongly agreed upon by most respondents across the villages as indicated by the mean value of Alakuko (4.56), Oke owu (4.76), Onire (4.60), Odo Ogun (4.83), Abanla (4.60), Elede (3.56), Alapata (4.44), Ajebandele (5.00), Agric (4.76), Ekeje (4.52), Imodi (4.64), Aba Awotu (5.00) while the total mean was 4.61 which imply that respondents in the study area strongly agreed that local participation in the management of the park will go a long way in reducing the effect of crop raiding. Also in a similar development, compensation scheme was also strongly agreed on by most respondents by the mean value of Alakuko (4.80), Oke owu (4.88), Onire (4.75), Odo Ogun (4.74), Abanla (5.00), Elede (4.96), Alapata (5.00), Ajebandele (5.00), Agric (4.76), Ekeje (4.76), Imodi (4.96), Aba Awotu (4.83) while the total mean was 4.87 which infer that most respondents strongly agreed to this fact. In contrast, most of the respondents were indifferent about planting of less palatable crops. This was evident in the mean value of 3.03 meaning that the respondents were indifferent about it.

3.4. Farmer’s perception of factors promoting crop damage

Farmer’s perceived factors promoting crop damage was summarized in Table 4. Majority of the respondents agreed that due to the closeness of farmlands to park boundary brought about their susceptibility to crop raiding as indicated by the mean values of Alakuko (2.64), Oke Owu (3.48), Onire (4.11), Odo Ogun (4.67), Abanla (3.62), Elede (2.80), Alapata (4.93), Ajebandele (4.27), Agric (4.76), Ekeje (2.64), Imodi (3.12), Aba Awotu (4.50) while the total mean was 3.80 which imply that respondents in the study area agreed that farmlands closer to park boundary are susceptible to raiding. Also, some of the respondents agreed to the fact that the large density of animals present at OONP resulted to crop raiding with the mean value of Alakuko (4.55), Oke Owu (4.55), Onire (4.90), Odo Ogun (5.00), Abanla (4.77), Elede (4.26), Alapata (4.53), Ajebandele (4.87), Agric (4.76), Ekeje (4.67), Imodi (4.39), Aba Awotu (4.83) while the total mean was 4.32 which infer that most respondents agreed to this fact.

3.5. Farmer’s perception of wild animal species involved in agricultural crop damage

Table 5 depicted that ungulate were the most common animal involved in crop raiding has been agreed upon by most of the respondents across the villages as indicated by the mean value of Alakuko (4.00), Oke Owu (3.76), Onire (3.93), Odo Ogun (4.33), Abanla (4.43), Elede (1.68), Alapata (4.23), Ajebandele (4.80), Agric (4.40), Ekeje (4.08), Imodi (2.48), Aba Awotu (4.10) while the total mean was 3.85 which imply that respondents in the study area agreed ungulates are the most common animal involved in crop raiding. Also, the inference that birds were recorded to be the second most common animal involved in crop raiding was largely disagreed upon by most respondents with the mean value of Alakuko (1.66), Oke Owu (1.10), Onire (2.18), Odo Ogun (1.78), Abanla (2.66), Elede (0.18), Alapata (2.51), Ajebandele (2.54), Agric (2.06), Ekeje (0.90), Imodi (2.30), Aba Awotu (2.28) while the total mean was 1.85 which indicate that most respondents disagreed to this fact

3.6. Farmer’s perception of crop species involved in agricultural crop damage

As observed in Table 6. Yam is recorded to be the most common crop affected in crop raiding which was strongly agreed upon by most respondents across the villages as indicated by the mean value of Alakuko (4.68), Oke owu (4.40), Onire (4.95), Odo Ogun (5.00), Abanla (5.00), Elede (2.64), Alapata (3.80), Ajebandele (5.00), Agric (4.88), Ekeje (4.48), Imodi (4.80), Aba Awotu (4.83) while the total mean was 4.54 which imply that

respondents in the study area strongly agreed that yam is the most common crop involved in crop raiding.

Also in a similar development, maize was observed to be the second most common crop affected by crop raiding was also agreed on by most respondents by the mean value of Alakuko (3.76), Oke owu (4.08), Onire (3.65), Odo Ogun (3.67), Abanla (3.38), Elede (2.40), Alapata (3.20), Ajebandele (3.24), Agric (3.36), Ekeje (3.96), Imodi (3.80), Aba Awotu (3.50) while the total mean was 3.50 which infer that most respondents agreed to this fact. Furthermore, most of the respondent were indifferent about tomato has been the most common crop affected in crop raiding This was evident in the mean values of Alakuko (2.24), Oke owu (1.64), Onire (2.15), Odo Ogun (3.33), Abanla (2.13), Elede (1.76), Alapata (2.47), Ajebandele (2.00), Agric (2.80), Ekeje (1.60), Imodi (2.16), Aba Awotu (2.33) while the total mean was 2.22 meaning that the respondents were indifferent about it.

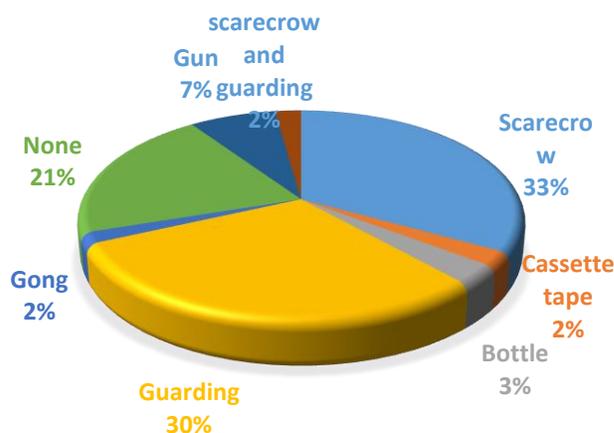


Figure 1: Control measures adopted by the respondents

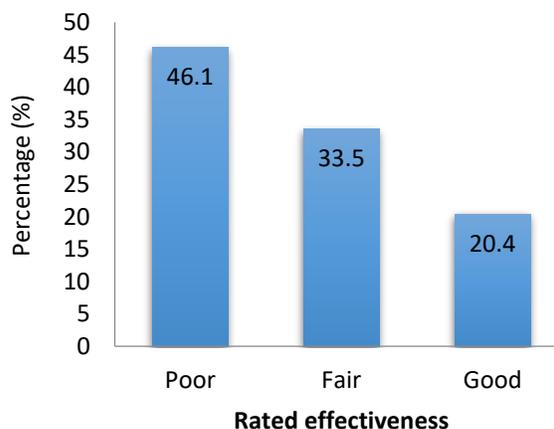


Figure 2: Effectiveness of control measures based on field observation in the study area

Table 2: Farmer's perception on crop raiding

Communities	Peoples Livelihood	Farmlands Raided Frequently	Problem Species Should be Protected
Alakuko	4.48	4.44	2.06
Oke Owu	4.56	4.51	1.76
Onire	4.90	4.50	1.50
Odo Ogun	4.83	4.83	1.87
Abanla	5.00	4.75	1.63
Elede	4.16	2.98	3.96
Alapata	5.00	4.80	1.40
Ajebandele	4.28	4.80	1.48
Agric	4.80	4.48	1.60
Ekeje	4.56	4.43	1.96
Imodi	4.16	4.40	1.48
Aba Awotu	4.83	4.83	1.50
<b>Mean</b>	<b>4.63</b>	<b>4.22</b>	<b>1.50</b>
<b>Inference</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>

Source Field survey, 2017

≤ 1.0 &lt; 1.5 = strongly disagree, ≥ 1.5 &lt; 2.5 = disagree

≥ 2.5 &lt; 3.5 = Undecided, ≥ 3.5 &lt; 4.5 = agree

≥ 4.5 ≤ 5.0 = strongly agree

Table 3: Farmers perceived damage control measures

Communities	Local Participation	Compensation Scheme	Less Palatable Crop
Alakuko	4.56	4.80	4.12
Oke Owu	4.76	4.88	4.12
Onire	4.60	4.75	2.45
Odo Ogun	4.83	4.74	2.33
Abanla	4.60	5.00	2.26
Elede	3.56	4.96	3.24
Alapata	4.44	5.00	2.36
Ajebandele	5.00	5.00	2.29
Agric	4.76	4.76	2.40
Ekeje	4.52	4.76	4.00
Imodi	4.64	4.96	3.68
Aba Awotu	5.00	4.83	3.13
<b>Mean</b>	<b>4.61</b>	<b>4.87</b>	<b>3.03</b>
<b>Inference</b>	<b>Strongly Agree</b>	<b>Strongly Agree</b>	<b>Indifference</b>

Source Field survey, 2017

≤ 1.0 &lt; 1.5 = strongly disagree, ≥ 1.5 &lt; 2.5 = disagree

≥ 2.5 &lt; 3.5 = Undecided, ≥ 3.5 &lt; 4.5 = agree

≥ 4.5 ≤ 5.0 = strongly agree

Table 4: Farmer's perception of factors promoting crop damage

Communities	Farm Closeness	Animal Density
Alakuko	2.64	4.55
Oke Owu	3.48	4.55
Onire	4.11	4.90
Odo Ogun	4.67	5.00
Abanla	3.62	4.77
Elede	2.80	4.26
Alapata	4.93	4.53
Ajebandele	4.27	4.87
Agric	4.76	4.76
Ekeje	2.64	4.67
Imodi	3.12	4.39
Aba Awotu	4.50	4.83
Mean	3.80	4.12
Inference	Agree	Agree

Source Field survey, 2017

≤ 1.0 &lt; 1.5 = strongly disagree, ≥ 1.5 &lt; 2.5 = disagree

≥ 2.5 &lt; 3.5 = Undecided, ≥ 3.5 &lt; 4.5 = agree

≥ 4.5 ≤ 5.0 = strongly agree

Table 5: Farmer's perception of wild animals involved in agricultural crop damage

Communities	Ungulates	Birds
Alakuko	4.00	1.66
Oke Owu	3.76	1.10
Onire	3.93	2.18
Odo Ogun	4.33	1.78
Abanla	4.43	2.66
Elede	1.68	0.18
Alapata	4.23	2.51
Ajebandele	4.80	2.54
Agric	4.40	2.06
Ekeje	4.08	0.90
Imodi	2.48	2.30
Aba Awotu	4.10	2.28
<b>Mean</b>	<b>3.85</b>	<b>1.85</b>
<b>Inference</b>	<b>Agree</b>	<b>Disagree</b>

Source Field survey, 2017

≤ 1.0 &lt; 1.5 = strongly disagree, ≥ 1.5 &lt; 2.5 = disagree

≥ 2.5 &lt; 3.5 = Undecided, ≥ 3.5 &lt; 4.5 = agree

≥ 4.5 ≤ 5.0 = strongly agree

Table 6: Farmer's Perception on crop species involved in agricultural crop damage

Communities	Yam	Maize	Tomato
Alakuko	4.68	3.76	2.24
Oke Owu	4.40	4.08	1.64
Onire	4.95	4.65	2.15
Odo Ogun	5.00	3.67	3.33
Abanla	5.00	3.38	2.13
Elede	2.64	2.40	1.76
Alapata	3.80	3.20	2.47
Ajebandele	5.00	3.24	2.00
Agric	4.88	3.36	2.80
Ekeje	4.48	3.96	1.60
Imodi	4.80	3.80	2.16
Aba Awotu	4.83	3.50	2.33
<b>Mean</b>	<b>4.54</b>	<b>3.50</b>	<b>2.22</b>
<b>Inference</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>

Source Field survey, 2017

$\leq 1.0 < 1.5$  = strongly disagree,  $\geq 1.5 < 2.5$  = disagree

$\geq 2.5 < 3.5$  = Undecided,  $\geq 3.5 < 4.5$  = agree

$\geq 4.5 \leq 5.0$  = strongly agree

#### 4. DISCUSSION

The respondents adopted the use scarecrow (33%), guarding (30%), gun (7%), bottle (3%), cassette tape (2%) and gong (2%) to protect their farmlands from crop raiding animals. The use of scarecrow and guarding among the respondents could be attributed to the size of farmlands, availability of labour and the species of animals involved in crop raiding. This corroborates with Fungo (2011) who stated that selection of the method to use depends on size of the fields, crop grown, and availability of labour to guard and vulnerability of the crop to available raiders. Furthermore, 2% adopted the combination of scarecrow and guarding while 21% do not use any of the technique. This is in line with Osborn (2002) which stated that combination of crop protective methods would better protect the crop from wild animals. The result from the effectiveness of the preventive measures shows that 46.1% of the respondents control measure effectiveness were observed to be poor. This is an indication that losses could really seriously not be mitigated. This result shows that there is no specific method of control that is most effective, rather, extent of damage seems to be as a result of factors like proximity to forest edge, search for more palatable food, animal species involved and high density of animal rather than the type of control method employed by the farmer.

Farmer's perception on crop raiding revealed majority strongly agreed that wildlife crop raiding affects people's livelihood ( $4.63 \pm 0.03$ ) in the study area. This is in accordance with previous findings Thorton *et al.* (2010)

that indeed frequently they incur the costs of living with wildlife without receiving any benefit from it. Also, Farmers agreed that farmlands are frequently raided by wild animals ( $4.22 \pm 0.06$ ) and destruction of crop are severe in their community ( $4.28 \pm 0.06$ ). However, farmers disagreed on protection of problem species ( $1.85 \pm 0.07$ ) in the study area. This is an indication that farmers see wild animals as being destructive and getting rid of problem species would go a long way in mitigating their losses. This is similar to the findings of Oduntan *et al.* (2012) who concluded that destruction of crop by wild animal species hardened farmers' attitude against wildlife conservation.

Farmer's perception on distance of farmlands to park boundary revealed majority of farmers agreed that distance between the farm settlement and core zone are too close ( $3.50 \pm 0.07$ ) and farms closer to park boundaries are susceptible to crop raiding ( $3.71 \pm 0.09$ ). This is an indication that farmlands closer to the park boundaries have high tendency of being raided. This is in line with the findings of Priston *et al.* (2012) that proximity of the farmlands to the park boundaries affects the likelihood of any farm sustaining crop damage from wildlife.

Farmer's perception on methods of damage control measures revealed that majority of farmers strongly agreed that local people should be involved the management of the park ( $4.61 \pm 0.04$ ) and compensation should be given to household whose crops are raided ( $4.87 \pm 0.02$ ). This corroborates support Ezebilo (2011)

who reported that local participation is important in forest conservation, there are circumstances in which it is absolutely necessary, for example high population pressures and resource use conflicts, communal ownership and in smaller and more vulnerable protected areas. More so, majority of farmers strongly agreed that the use of traps and other control measures in reducing animal raiding should be allowed ( $4.73 \pm 0.04$ ). This agrees with report of Carr (2004) that traditionally, farmers throughout many parts of Africa have hunted and trapped wildlife attracted to their fields, holding seasonal game drives to reduce local populations of pest species and laying snares and traps within their fields. Such strategies have had the advantage of providing people with meat for the household as well as reducing the amount and impact of crop losses.

Farmers perception on factors promoting crop damage revealed that majority of farmers in the study area agreed that the extent of raiding depends on the types of crops cultivated ( $3.64 \pm 0.06$ ). This is an indication that most of the crop specie grown are palatable to the raiders. Joseline (2010) noted that production of highly palatable and nutritious seasonal crops such as maize, which attracts primates and other wild animals, involve heavy losses. Also, farmers agreed that seasonal variation contribute to crop raiding ( $3.74 \pm 0.07$ ). This is an indication that seasonal variation of crop raiding incidence is mostly attributed to forage availability.

Farmers perception on wild animals involved in agricultural crop damage revealed that majority of farmers agreed that there is abundance of invasive animal species ( $4.44 \pm 0.05$ ) in the study area, ungulates are the most common animals involved in crop raiding ( $3.85 \pm 0.08$ ) and different species of animal specialize on different types of crops ( $3.78 \pm 0.07$ ). This supported the findings of Osborn and Hill, (2005) who reported that different species may specialize on different types of crop and different plant parts or development stages.

Farmers perception on crop species involved in agricultural crop damage reveals that majority ( $4.54 \pm 0.06$ ) of farmers in the study area strongly agreed that yam is the most common crop involved in crop raiding. More so, farmers agreed maize is the second most common crop involved in crop raiding ( $3.50 \pm 0.07$ ) and different species of animal raid different parts of agricultural crop ( $4.01 \pm 0.05$ ).

## 5. CONCLUSIONS

Based on the results of the study, the following conclusions are made.

1. High level of animal density at the park coupled with the closeness of farms to park boundary resulted to be the major factors promoting crop damage in the study area. The respondents preferred the use of scarecrow and guarding as control measures against crop raiding animals but however perceived that the effectiveness of these control measures were poor in the study area.
2. Most respondents strongly agreed that crop raiding by wildlife has greatly affected their livelihood but on the contrary disagreed that crop raiding species should be protected, which is never too good for conservation.
3. Finally, they strongly agreed that local participation would always be a good way to shape the attitude of the farmers towards non-lethal control measures posed against problematic animals in the study area.
4. It is therefore recommended that more detailed study should be undertaken to reveal more effective and non-lethal control measures to prohibit animals from encroaching farms and also, farmers should be discouraged from establishing farm settlement near or in the buffer zone of the Park as it will always attract wild animals and thereby leading to crop raiding which would eventually reduce farm yield.

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## REFERENCES

- Carr DL (2004). Proximate population factors and deforestation in tropical agricultural frontiers. *Population and environment*, 25(6), 585-612.
- Estrada A (2006). Human and non-human primate co-existence in the Neotropics: Apreliminary view of some agricultural practices as a complement for primate conservation. *Ecological and Environmental Anthropology* 2: 17-29.
- Ezebilo EE (2011). Local participation in forest and biodiversity conservation in a Nigerian rain forest. *International Journal of Sustainable Development & World Ecology*, 18(1), 42-47.
- Fuentes A (2006). Human-nonhuman primate interconnections and their relevance to anthropology. *Ecological and Environmental Anthropology* 2: 1-11.
- Gillingham S and Lee P (2003). People and protected areas: a study of local perceptions of wildlife crop-

- damage conflict in an area bordering the Serous Game Reserve, Tanzania. *Oryx* 37: 316–325.
- Guerbois C, Chapanda E, and Fritz H (2012). Combining multi-scale socio-ecological approaches to understand the susceptibility of subsistence farmers to elephant crop raiding on the edge of a protected area. *Journal of Applied Ecology*, 49(5), 1149-1158.
- Hill CM (2000). Conflict of interests between people and baboons: Crop raiding in Uganda. *International Journal of Primatology* 21: 299-315.
- Jackson R and Wangchuk R (2001) Linking snow leopard conservation and people-wildlife conflict resolution: grassroots measures to protect the endangered snow leopard from herder retribution. *Endangered Species Update* 18:138–141.
- Joseline M (2010). The impact of crop raiding by wild animals from Bugoma forest reserve on farmers' livelihoods. MSc. Thesis, Makerere University, Institute of Environment and Natural Resource. PP. 45-50.
- Lee PC and Priston NEC (2005). Human attitude to Primates: Perception of pests, conflicts and consequences for primate conservation. In *Commensalism and Conflict: The Human-Primate Interface. American Society of Primatologists*. 1-23pp.
- Linkie M, Chapron G, Martyr DJ, Holden J, and Leader-Williams N (2006). Assessing the viability of tiger subpopulations in a fragmented landscape. *Journal of Applied Ecology*, 43(3), 576-586.
- Linkie M, Dinata Y, Nofrianto A, and Leader-Williams N (2007). Patterns and perceptions of wildlife crop raiding in and around Kerinci Seblat National Park, Sumatra. *Animal Conservation* 10: 127-135.
- Nyhus PJ, Osofsky SA, Ferraro P, Madden F and Fisher H (2005). Bearing the cost of human-wildlife conflict: the challenge of compensation schemes. *Conservation Biology Series-Cambridge*, 9, 107.
- Nyhus PJ and Tilson R, (2000). Crop-raiding elephants and conservation implications at Way Kambas National Park, Sumatra, Indonesia. *Oryx* 34: 262–274.
- Oduntan OO, Akintunde O, Ogunyode DO, Adesina O, and Oladoye AO (2012). Economic Damages of Primates on Farmlands in Old Oyo National Park Neighbourhood. *International Journal of Molecular Ecology and Conservation*, 2(1). Osborn FV and Hill CM (2005). Techniques to reduce crop loss: human and technical dimensions in Africa. *Conservation Biology Series-Cambridge* 9:72.
- Oyeleke OO, Odewumi OS and Mustapha RA (2015). Assessment of management practices for ungulates in Old Oyo National Park, Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 8(5), 548-555.
- Patterson BD, Kasiki SM, Selempo E and Kays RW (2004). Livestock Predation by Lions (*Panthera Leo*) and Other Carnivores on Ranches Neighbouring Tsavo National Parks, Kenya, *Biological Conservation*, 119(4): 507-516.
- Paterson JA and Engle TE (2005). Trace mineral nutrition in beef cattle. In *Nutrition Conference sponsored by University of Tennessee*.
- Plumptre AJ and Reynolds V (1994). The effect of selective logging on the primate populations in the Budongo Forest Reserve, Uganda. *Journal of Applied Ecology* 31 (4), pp. 631-641.
- Priston NE, Wyper RM and Lee PC (2012). Buton macaques (*Macaca ochreata brunscens*): crops, conflict, and behavior on farms. *American Journal of Primatology*, 74(1), 29-36.
- Riley EP (2007). The human-macaque interface: conservation implications of current and future overlap and conflict in Lore Lindu National Park, Sulawesi, Indonesia. *American Anthropology* 109: 473 – 484.
- Thornton A and Raihani NJ (2010). Identifying teaching in wild animals. *Learning & Behavior*, 38(3), 297-309.