



## HUMAN – WILDLIFE CONFLICT IN PROTECTED AREAS IN NIGERIA: DIMENSIONS AND SOLUTIONS

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### ABSTRACT

*Human-wildlife conflict has constituted serious threats to the life of both humans and wildlife species because it has resulted into fatalities in both man and wildlife species. The paper reviewed human-wildlife conflicts in Nigeria as it portends potential loss of human life, loss of properties, farmlands, livestock and wildlife. The paper noted that there is a steady rise in human-wildlife conflicts especially in communities adjoining protected areas in Nigeria due to shrinking wildlife habitats, human population explosion and increasing poverty. Loss of farmlands fertility has resulted in poor crop yield by farmers from communities bordering protected areas. This has also contributed to the encroachment of fertile lands in protected areas. The paper observed that human-wildlife conflicts are caused by wildlife species both from protected areas and non-protected areas. However, conflicts caused by wild animals from protected areas are often more reported than those from non-protected areas. We suggested strongly that human vigilance, compensations, awareness and education, sensory deterrents, alternative crops, fencing, collaring and local team support as panacea for reduction in human-wildlife conflicts particularly among communities in close proximity to protected areas in Nigeria.*

**Keywords:** Conflicts, farmlands, protected areas, wildlife, wildlife habitat

### INTRODUCTION

On July 14, 2018, 292 crocodiles were killed by a mob in Sorong district of Indonesia. The mob slaughter was an act of reprisal for a local farmer killed while encroaching on a crocodile sanctuary to harvest grasses for his cattle. Despite the fact that crocodiles are protected species in Indonesia, the villagers, armed with different sorts of weaponry, invaded the sanctuary to wreak havoc (Deutsche Welle, 2018). Human-wildlife conflicts are primarily due to overlapping landscapes used by both humans and wild animals, and is on the increase as a result of the explosion in human population (Food and Agriculture Organization, 2009; Mwangi *et al.*, 2016). Furthermore, these conflicts have given rise to competition between humans and wildlife for space and resources; as well as encroachment and urbanization of once wildlife habitats. Wildlife requiring large habitats is often found overlapping into human settlements and

farmlands near protected areas. The conflicts are further heightened, when such habitats have been fragmented or reduced in size due to anthropogenic activities, and when their natural sources of food are scarce or depleted (Geleta *et al.*, 2019). Human-wildlife conflict poses issues to humans such as injury, disability, collision with vehicles, and destruction of livestock and spread of diseases from wildlife to livestock. Damages to crops, destruction of wildlife and wildlife habitat and fatal human casualties have also been reported (FAO, 2009). Human-wildlife conflicts can have severe consequences on wildlife population and wildlife conservation efforts by protected areas which rely considerably on support from adjoining local communities who might consider them as destructive pests and threats to their livelihood. Hence, this paper aims at reviewing human-wildlife conflicts and proffering practical solutions that will help reduce the subtle but dangerous trend that

could jeopardize wildlife conservation efforts in Nigeria.

### Human – Wildlife Conflicts in Nigeria

“...not deliberate but to save the lives and properties of the people living in communities” (Dayo, 2018). This was the comment by the President and head hunter of Hunters Association in Idanre Local Council area in Ondo State where an elephant (*Loxodonta africana*) was killed in 2018. The elephants had frequently been encroaching into the villages, destroying homes, farmlands and causing injuries to the locals. In 2012, two people and about 30 herds were killed by a rampaging lion in some villages in Gulani Local Government Area, Yobe State, Nigeria (The Telegraph, 2012). Wildlife such as the Nile rat (*Arvicanthis niloticus*), Mona monkey (*Cercopithecus mona*) and the Grasscutter (*Thryonomys swinderianus*) have been reported to cause destruction of crops such as cassava, yam, maize, rice, millet, and groundnut in Katsina-Ala local government area of Benue State (Bukie *et al.*, 2018). In recent times, an increasing number of reptiles have been seen in and around residential areas, and subsequently killed all over Nigeria (Deolu, 2017). Moreover, of infamous mention is the case of a python killed on suspicion that it had swallowed a livestock, only to find out after tearing it open that it was only pregnant with dozens of eggs in it (Davies, 2016). The expansion of agricultural activities around protected areas has increased the interface between humans and wildlife. Most wildlife, in savannah ecosystems, becomes pest during the dry season when the quality of vegetation is low and the crops in farmlands are ready for harvest (Ikpa *et al.*, 2010). Such is the situation in the Filinga range of GashakaGumti National Park, where the Tantalus monkey (*Cercopithecus tantalus*) was noted to have been raiding the crops of farmers in Mayo Yum village and Gashaka village. The most affected crop is maize (*Zea mays*), and the economic loss due to the conflict was estimated to be between 4 – 6 bags of 50 kilograms size of crops per season. Some farmers sometimes completely lose an entire season’s crop. Baboons were also observed to attack poultry livestock reared in that area (Warren *et al.*, 2007 and Eniang *et al.*, (2011). In other places, baboons are known to prey on goat, sheep, and calf (Geleta *et al.*, 2019; Mwangi *et al.*, 2016).

In Kainji Lake National Park, primates, rodents, and aves are the wildlife responsible for the raiding of crops like maize, cassava, rice, sorghum, yam (Ogunjobi and Adeola, 2016). In the Borgu sector of the park, Olive baboon (*Papio anubis*), Patas monkey (*Erythrocebus patas*) and Green monkey (*Chlorocebus abaeus*) were identified as the primates responsible for the raiding of farms. Farmers are prone to losing their entire crop if farmlands are left unguarded (Adeola *et al.*, (2018). In Kamuku National Park, elephants primarily raid cultivated crops belonging to the family of Poaceae and Fabaceae; due to its palatability, closeness of farmlands to the protected area, and location of crops on migratory routes (Ogunjobi *et al.*, 2018). Magama *et al.*, (2018) study on human-wildlife conflict in Yankari Game Reserve, Bauchi State showed that Buffalo (*Syncerus caffer*), Tantalus monkey (*Cercopithecus tantalus*), Patas monkey (*Erythrocebus patas*), land Bush Buck (*Tragelaps scriptus*) were the major sources of human – wildlife conflict in the communities bordering the reserve, causing damage to cultivated crops such as Maize, Millet, Groundnut; houses; farm fences; and other animals. While the report of elephants raiding crops was low, this may be due to its dwindling population. Crop raiding by elephants was recorded in 13 communities bordering Yankari Game Reserve. Common strategies employed by farmers in protecting their crops from wildlife include guarding crop fields, chasing animals away, use of scarecrows, shooting, fences, and trenches (Warren *et al.*, 2007;Eniang *et al.*, 2011; Ogunjobi and Adeola, 2016; Magama *et al.*, 2018; Geleta *et al.*, 2019). Wildlife managers on the other hand have employed measures such as elephant collaring, in other to monitor and track their movement.

### PRACTICAL SOLUTIONS TO CURB HUMAN-WILDLIFE CONFLICTS

There is need to highlight practical workable solutions to this conflict. The persistent occurrence of damages due to human – wildlife conflict is proof that the current measures employed are not very effective. For example, the trends of human – wildlife conflict experienced by farmers in Gashaka Gumti National Park as reported by Warren *et al.* (2007) were still reported by Eniang *et al.* (2011).

### Compensation

While the payment of financial compensation for livestock or crop losses has seldom been in practice, it has been deemed ineffective due to corruption, low educationally level of farmers thus impeding their fraudulent claims. Many parks also lack the institutional mandate to embark on the compensation of financial claims (Mwangi *et al.*, 2016), and consequently, result to false promises that are never fulfilled. As Eniang *et al.*, (2011) recorded, no Federal Government of Nigeria policy exist on compensation and how human – wildlife conflict should be handled, despite the fact that most farmers believe compensations should be paid for their damaged crops (Adeola *et al.*, 2018). However, Adedoyin *et al.* (2018) reported the issuance of loans, free medical care, infrastructure, and empowerment programs as compensation schemes for affected farmers in Old Oyo National Park.

### Awareness and Education

Education plays a vital role in creating awareness and propagating new approaches towards preventing and resolving conflicts. The organization of training programs and creation of awareness campaigns by the management of National Parks and other protected areas can promote peaceful coexistence between humans and wildlife (Eniang *et al.*, 2011) thereby reducing human –wildlife conflict.

### Human Vigilance

Farmers have often had to physically man their crops in order to scare away wildlife. This involves building huts or enclaves close to farmlands so as to always keep an eye on the crops. While farmers and herders have been successful in warding off some predators, wildlife species such as the baboon and Tantalus monkey (*Cercopithecus tantalus*) have been observed to find and exploit loopholes in the guarding of crops (FAO, 2009).

### Team Building and Local Support

The management of Yankari Game Reserve has enlisted the help of the local people, their heads and chiefs of the several communities surrounding the Yankari Game Reserve, Bauchi State, in establishing the “elephant guardian” project. The elephant guardians are trained on how to safely chase elephants away from farms, and equipped

with phones to report wildlife sightings and call for support from the rangers when needed (WCS, 2018). This collaboration between the management of the reserve and the local community creates an ambience of partnership. The monthly allowance given to the guardians would also uplift their socio-economic status within the community.

### Fencing

While the use of fences can pose a hindrance to migratory wildlife species, it has proved effective in preventing conflict between humans and wildlife. Fences could either be made from plant hedges or in form of trenches dug around farmlands. The establishment of electric fences is an effective strategy in mitigating human – elephant conflicts (Erukwa, 2017). In curbing human – elephant conflict, it is advised that a single live strand of electric fence be erected at a height of 1.5metres above the ground. This would ensure that the fence does not obstruct the passage and migration of smaller animals, but efficiently halts the passage of elephants. Aside its reduced environmental impact, such single strand electric fences are also more economical than the mundane electric fences.

### Alternative crops

Wildlife has specific nutritional requirements, and as such do not consume every type of plant. While most crops raided by wildlife is as a result of its palatability (Ogunjobi *et al.*, 2018), some other crops are unpalatable to wildlife and pose an opportunity in deterring human - wildlife conflict. For example, ginger (*Zingiber officinale*) and Chili pepper (*Capsicum annuum*) have been cheered as alternative crops in places experiencing human – wildlife conflict. The cultivation of chili pepper proves an opportunity to increase the income of farmers while repelling elephants too. Encouraging local farmers to plant alternative crops that are unpalatable to problem animals will be very effective in some cases than other measures such as digging of trenches, guarding or fencing (Adeola *et al.*, 2018).

### Sensory deterrents

Acoustic noises have been used in warding off predators such as baboons (*Papio anubis*), elephants (*Loxodonta africana*) and lions (*Panthera leo*). These include shouting, beating of objects, and

gunshot sounds (disturbance shooting). Innovative practices such as tape recordings of sounds that frighten elephants are being used in Kenya. Flamboyant clothes and scarecrows have also been used in deterring wildlife, although successful for some than others (Datiko and Bekele, 2013). Substances such as capsaicin resin (from chili peppers) have been acclaimed as the most effective means of repelling elephants due to its burning/irritating effect upon contact (FAO, 2009).

### Collaring

The use of GPS-enabled elephant collars in monitoring the movement of groups of elephants and preventing future raiding events has been stated. Such technique should follow prior analysis of the elephants responsible for crop raiding. As Chiyo *et al.*, (2011) observed, crop raiding in Amboseli basin, Southern Kenya, was perpetrated by solitary male elephants, with no single female ever indicted. Crop raiding in Kiable National Park, Uganda was also observed to be mostly carried out by male elephants. Chiyo *et al.* (2011) also recorded that about 56% of crop raiding was carried out by 12% of male habitual raiders. Far more stunning was the discovery that two habitual raiders were responsible for 20% of all the raiding. The collaring of such males will be more efficient in tackling this conflict, as opposed to random collaring of male and female species.

### Technology and Software Applications

Using a user – friendly toll-free hotline by farmers close to two national parks in India are now able to

report incidents of wildlife destruction to authorities, who send respondents to evaluate the situation in less than 24 hours and facilitate the payment of compensation for crops destroyed, property damaged, and livestock raided by tigers and leopards. There have also been a few incidences of human injuries and deaths. Since the inception of the project in July 2015, over 5685 people have received compensation worth more than US \$233,000. Wild Seve, as it is called, has been able to enable a positive attitude amongst the local communities towards wildlife and its habitat (Basu, 2018).

### CONCLUSION

The conflict between humans and wildlife is one that leaves no victor, but both parties vanquished. Cultivated crops are raided, livestock depredated, wildlife killed, their habitats destroyed, and worst-case human life lost. Solutions such as guarding, fencing, culling, compensation, and collaring all have their limitations. Thus, there is the need for wildlife managers to employ and propagate an integrated means of combating human – wildlife conflicts. For one, simply using deterrents in repelling wildlife would lose its efficacy over time as animals soon learn that they pose no real threat and thus, get habituated to them. Adhering solely to solutions such as compensation has ripple effects, when not effectively implemented, as highlighted above. It then boils down to wildlife managers evaluating the specific socio-economic characteristics and peculiarities boarding conflict, and apply appropriate measures for its mitigation.

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