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**POACHING: A THREAT TO AFRICAN ELEPHANTS' POPULATION**

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**ABSTRACT**

*The paper examines the threats to the African elephants' population by looking at the different remaining reserves, and the problems affecting the growth of the African elephant's population, despite the banned on African elephants ivory trade by the international community. The populations of African elephant have continued to be threatened among others by poachers for meat and ivory and traditional medicines, human elephant conflicts, habitat fragmentations in Cameroon and Democratic Republic of Congo. Protection within National Parks have proven to be ineffective, because elephants spent more time outside protected area and about 80% of the continent elephants remain in or outside buffer zones and protected area. The paper attempts to highlight the problems causing the depletion of the population of the African elephant and also proffers meaningful interventions and strategies that will possibly reduce the depletion of the elephant's population. The interventions may include establishment of elephants corridors along the surrounding landscape, demarcation of farm lands with beehive bees fences, proper land planning system, buffer zones, public enlightenment and use of community based natural resources management system among others as proposed in this paper, would serve as an effective conservation strategies.*

**Keywords:** Ivory, Poaching, African Elephants, Ranges, game reserves.

**INTRODUCTION**

African elephants (*Loxodonta Africana* and *Loxodonta cyclotis*) are found in Africa, the Populations of this specie have decline significantly in the 1970s and 1980s due to intense poaching for ivory This triggered the formation of (CITES) Convention on International Trade in Endangered Species of wild fauna and flora. (CITES), to ban the specie from commercial trading, by listing them on the endangered list in 1989 (Stiles, 2004). However CITES banned on African elephants continues to generate debate across the continent over legalization of trade with some countries like Zimbabwe , Zambia, South Africa, Botswana , Malawi, and Namibia opposing the ban, arguing that they have maintained increasing elephant

populations, and revenues from trade are used for conservation purposes (Urskreuter, 1994).

The populations of elephants has continue to decline due to human activity which include illegal poaching for both ivory and meat, human elephant conflicts and habitat fragmentations in some countries across the African continent (Blanc, 2003; 2007). Central African region has recorded significant poaching trends for some time and has constantly shown the highest levels of poaching than any other region since the MIKE (Monitoring of illegal killings of elephants) began (CITES 2012). Figure 1 shown the regional percentage of illegal killings of elephant in the continent, In 2006, the PIKE levels in central Africa were at 0.5 meaning that about half the elephant carcasses encountered on patrol in MIKE sites were

reported as illegally killed, while in 2011 PIKE levels had risen to 0.9 (CITES 2012).

The central African region is believed to be the main source of ivory supply for the illegal trade, export from the region alone amount one third of the continents from 1979-1988 (Barnes 1995a). More recently (Bekhaus & Prins; Usongo, 2003) have also showed decline in elephants populations in central African due to illegal poaching for both ivory and meat. Illegal poaching activities have continue to increase due to activities of logging companies and oil extraction which open entry into deeper forests and path way for easy transport of ivory and meat in central African (Blanc *et al.* 2007). In 2005 the central African countries initiated a regional elephant conservation project, with the main objectives of preventing illegal poaching across the region and Africa at large, and to also reduce the rate of habitat fragmentation, improve data on the status of elephants and create awareness among the general public (Blanc *et al.* 2007).

## ECOLOGY AND DISTRIBUTION

The African elephant is the largest terrestrial animal, with two subspecies the African elephant savannah or bush (*Loxodonta Africana*) and forest elephant (*Loxodonta cyclotis*). Forest elephants are smaller than bush elephants with rounder smaller ears and have thinner, slightly curved tusks nearly reaching the ground (UNEP 1989). African elephants live in a wide range of habitats from desert to highland forest, female mature at the age of 14 and 20 years for male and live up to 60 to 70 years (UNEP 1989). They reproduce one calf on average every four years after a pregnancy lasting up to 22 months (UNEP 1989). Foraging takes about 16-18 hours in each day, and an average elephants needs to consume about 22kg dry weight of grass and woody vegetation each day but large adults sometimes consume as much as 75kg and

with a daily water requirements up to 200 litres a day in dry seasons (UNEP 1989).

The current status of the specie in the 2004 IUCN Red list was listed as vulnerable (VUA2a), prior to this, the species was listed as endangered (Blanc, 2008). The African elephants are Present in 37 countries in Africa, about 94% of African elephants are found in central, Eastern and Southern Africa with 29%, 26%, and 39% respectively, while the remaining 6% are found in West Africa (Blanc *et al.* 2003). Figure (2), shown the African elephant range percentage distribution. However because of inaccuracy of counting methods, logistical reasons it very difficult to obtain accurate estimate elephant populations (Blanc *et al.* 2007). But the estimated populations are presented in four categories with different level of uncertainty, with (Definite) category assumed to be the most reliable estimate as shown in table (1) and (2) (Blanc *et al.* 2007).

African elephants occur in 118,571km square range area; with 26% protected area ranges in Cameroon (Blanc *et al.* 2007). They are distributed across the three geographical area, the savannah elephants are found in the northern sahelian and sudanian, and forest elephants in the southern forest area (Tchamba *et al.* 1997 cited in Blanc *et al.* 2007). There is also evident of trans boundary movements of elephants from Cameroon northern savannah range to lake chad from satellite tracking (Loomis, 2002 cited in Blanc *et al.* 2007). Elephants also move from the Ndjidah National park to Gagaj-Yapala region of chad (Tchamba *et al.* 1997 cited in Blanc *et al.* 2007). Movements were also shown by Usongo (2003) from Cameroon to central African Republic across the Sangha River. In Democratic Republic of Congo, they occur in 263,700 km square range area with 53% of ranges in protected areas, and forest elephant occurring in the north, central parts while savannah elephants and some hybrids of forest one are found in the north and

east. (Blanc *et al.* 2007). There is also evidence of a trans boundary seasonal movement from Virunga National Park to Queen Elizabeth National park in Uganda (Mubalama, 2000 cited in Blanc *et al.* 2007).

### **THREATS AND MANAGEMENT CONSTRAINTS (MAN AND ELEPHANT CONFLICT)**

The main threats and management constraint threaten the populations of African elephants in Cameroon and Democratic Republic of Congo includes the following:

Encroachment of human activities into elephants ranges Human activities such as farming, expansion of human settlements into the remaining undisturbed elephants ranges in both countries have increase the rate of crop raids and human elephants conflicts (Tchamba, 1996; Naughton *et al.* 1999; Blanc *et al.* 2007). These problems are further exacerbated by the activities of logging and construction companies, that open up access into deeper forest within the ranges of African elephants in both Cameroon and Democratic republic of Congo (Usongo, 2003; Tegomo *et al.* 2012). Subsequently, the expansion of human activities into elephant's ranges in these countries has further confine elephant populations into smaller fragmented habitats causing a serious management constraint (Blanc *et al.* 2007). However in some cases conflicts results from complete restriction of local inhabitants from the use and management of resources within protected areas in their communities, on which they depend upon as means of livelihood for years (Weladi and Tchamba, 2003). But integration of local inhabitants in the management and use of protected areas would serve as a sustainable conservation strategy, thereby reducing the rate of conflicts (Robert *et al.* 2003; Mbile *et al.* 2005).

### **POACHING FOR IVORY AND MEAT:**

Poaching for ivory and meat had over the years and still continues to be the major threat to African elephant populations despite CITE banned (Blanc *et al.* 2007). In Cameroon several studies have observed decline in the populations of this specie due to poaching for ivory and meat (Michelmore, 1994; Barnes, 1995a; Bakhauis, 1997; Usongo, 2003). Cameroon has been recently showed to be having the booming uncontrolled illegal ivory market and the centre for international ivory trade (Milliken, 2002 cited in Blanc *et al.* 2007). Despite the necessary legislation in place, these problems continue due to inadequate law enforcement and lack of reliable up to date information on the status of elephant population (Blanc *et al.* 2007).

A similar trend has also been observed in the Democratic Republic of Congo (DRC). DRC was a party to CITES 1989, but its elephant population has decline significantly due poaching (Alers *et al.* 1992; Martin *et al.* 2000; Stiles, 2011; Blanc *et al.* 2007). For instances large amount of ivory have been confiscated in Democratic Republic of Congo in recent years, with an estimated of 17 tonnes to have been moved from the Okapi Faunal Reserve alone (Apobo, 2004 cited in Blanc *et al.* 2007). However, a survey at a Kinshasa market in 2005 revealed a decline in business activity of elephant ivory and meat compared to previous years (Martin *et al.* 2000). High rate of poaching as observed in these countries has adverse effect on the reproductive potentials of elephants. This is because tusks increase in size with the age of elephant, and ivory traders prefer large tusks, thus older elephants tend to be selectively poached removing from the populations only those individuals of reproductive age (UNEP, 1989).

## LACK OF CONNECTIVITY BETWEEN ELEPHANT RANGES:

Lack of connectivity between African elephant ranges in African Continent and particularly in Cameroon and Democratic Republic of Congo, has bring elephant into more contact with human resulting in increased human elephant conflicts (Blanc *et al.* 2003). These problem is compounded because of the evidence that suggest that almost 80% of African elephants ranges remain outside protected areas (Blanc *et al.* 2003). However suitable corridors that provide connectivity and support movements of animals species can reduce habitats fragmentation and separations of habitat (Bejer and Noss, 1998). The establishment of African elephant's corridors has proven to promote connectivity between ranges as well as reducing habitat fragmentation and conflicts (Kikoti *et al.* 2011; Dauglas-Hamilton 2005). For

example in Zimbabwe a suitable range of elephant corridor was established using radio collars with GIS analysis, this resulted in reducing human elephant conflicts and contribute to conservation of elephants (Osborn and Parker, 2003).

The establishment of elephant's corridors along Tran's boundary border, such as the one in the Virunga Park in Democratic Republic of Congo and the neighbouring Rwanda and Uganda were shown to facilitate movements and conservation of elephants (Plumptre *et al.* 2007). However agricultural activities, constructions and land tenure system pose a serious threat to existing elephants corridors in Africa, but further identification and establishment of suitable elephant's corridors across the remaining undisturbed ranges would serve as an effective conservation strategy (Kioki and Seno, 2011).

**Table 1:** Showing estimated elephant populations in Cameroon in 2006 and 2002.

Year	Definite	Probable	possible	Speculative
2006	179	726	4,965	9,517
2002	2,006	3,058	9,017	3,160

Source (Blanc *et al.* 2007).

**Table 2:** Showing estimated elephant's population in Democratic Republic of Congo in 2006 and 2002.

Year	Definite	Probable	possible	Speculative
2006	2,447	7,955	8,855	4,457
2002	7,667	2,631	34,996	17,554

Source (Blanc *et al.* 2007).

## CONSERVATION AND MANAGEMENT PRACTICES

Several strategies had been explored over the years to conserve and protect the African elephants in Africa continent from illegal poaching for both ivory and meat, and management of crop raid to

reduce human elephant's conflicts. The protection of elephants within protected areas like National parks has proven to be effective over the years, but new evidence now suggest that the elephants spent more time outside the surroundings of protected areas than

within the Parks as detected by using radio collared Elephants, (Usongo, 2003). This is because of their feeding desire for different varieties of greener plant landscapes at different months both in wet and dry season (Loarie, 2009). However there is need to extend the protection of elephants beyond the National parks to the surrounding landscape.

The use of beehive fence as a deterrent to reduce crop raid by elephants, as well as to generate income through the sales of honey bee has been widely practiced by farmers (King *et al.* 2007). These method has proven to be successful in reducing crop raids by elephants, as fewer raids were observed in farmlands fence with beehive than farms without (King *et al.* 2007; King *et al.* 2009; King *et al.* 2011). Electric fence

has also been use as a deterrent but is not effective due to high cost of operation and maintenance (Rodwell *et al.* 2000). Crop raids and human elephant conflicts can be reduced by integrating the use of beehive fence around farm lands and buffer zones, since its construction and maintainers is affordable and has proven to be effective.

### CURRENT CONSERVATION STRATEGIES

In situ protected area networks are the main conservation strategy used so far in the conservation of African elephants in Cameroon and Democratic Republic of Congo. Various international conservation organisations embark on different programmes to conserve this species; these are shown in table.3

**Table 3:** Various international conservation organisations

s/n	Conservation organisation	Strategy
1.	IUCN African elephant specialist Group (AFESG).	Developed the African Elephant Database and African Elephant status reports. Developed tools for elephant management and Research.
2.	Monitoring the illegal killings of elephants (MIKE).	Records elephant mortality through Carcass verification. Use local information network as sound scientific methodology for monitoring the illegal killing of elephant.
3.	World wild life Fund (WWF).	Establishment of new protected areas and improve management within existing ones. Facilitate training in elephant conservation and management techniques.
4.	Wildlife trade monitoring network (Traffic network).	Tracking and sharing data to stop wildlife trade.
5.	Elephant trade information system (ETIS).	Monitors and tracks elephant ivory seizures.

The current strategy, involves a sub-regional approach in management of African elephants coordinated by IUCN African elephant specialist group (AFESG 2005) with the aim to maintain a viable populations of African elephants and their habitats through the following outline strategies: Reducing

illegal killing through effective legislation and a regulatory framework, maintain and restore connectivity between central African elephant population to improve knowledge of elephants and their habitat, public awareness and support with respect to African elephant conservation (IUCN2005).

More so, recent studies have demonstrated that DNA analysis for ivory samples can be used to trace the origin of illegal ivory (Camstock, 2003; Wasser, 2007). This can hence be utilizing for monitoring the source of illegal killing of elephant by MIKE.

### CONSERVATION STRATEGIES TO CHECK THE DECLINING POPULATION

Conservation strategies to check the declining population of African Elephants:

1. Identification and Establishment of corridors: Suitable elephant's corridors range within the landscapes should be identified and established in Cameroon and Democratic Republic of Congo. This will enhanced connectivity between ranges and reduces the cases of human elephant conflicts as well as poaching. In a study by Usongo, (2003) has shown that elephants spent more time outside protected areas than inside reserves or parks, the establishment of buffer zones and corridors will reduce contacts with human and hence reduce man Elephant conflicts.
2. The amendment and strengthened existing legislation: Elephants in west and central African countries are shown to exhibit Trans-boundary movements. The amendment and harmonization of existing laws regarding conservation of elephants within all neighbouring countries would reduce poaching activities and ivory trade along international borders.
3. Construction of beehive fences: Beehive fences should be constructed around agricultural land household settlements in African countries Land use planning system: land use system should be redesigned in African countries in order to maintain connectivity between elephant's ranges, and to minimize the expansion of human settlement into elephant's ranges. Unplanned logging activities in elephant ranges can be regulated through well plan land design.
4. Community Based Natural Resources Management (CBNRM) supports the transfer of some responsibility of wild life management from central government to community level. This initiative can be successfully introduced and implemented in the affected African countries it will go a long way in changing the locals attitude to elephants from a problem animal to an income generation assets. At the same time promoting tolerance for man-elephant conflicts. (Hoare, 2000).
5. Elephant survey: Elephants survey should be conducted in west and central African countries using the GPS and satellite technology to increase data and knowledge on elephant's movements, distribution, feeding preference, and ranges which can use to developed effective conservation strategies.
6. Agro-pastoral system: Agro-pastoral systems should also be encourage in landscape in west and central African countries that will minimize habitat fragmentation of elephants while enabling inhabitants to live together with elephants with minimum conflicts.
7. Education and public awareness programmes: Several awareness programmes should be lunch in rural communities in collaboration with Non-Governmental Organisations (NGO)'s to disseminate information about the benefits of elephants to the communities. Information on existing laws regarding poaching and trade in ivory should also be disseminated.

8. Others should include enhancing conventional field patrols, engaging the locals in monitoring and investigations of poaching and ivory trade and law enforcement.

## CONCLUSION

The continues existence of African elephant in conflict areas are threatened significantly despite CITES banned from human activities, mainly from poaching for both ivory and meat, human elephants conflicts, habitat fragmentations, logging activities, war and insurgents activities. However, several strategies employed to protect the species within protected areas have failed to prevent these threats, because 80% of the continent elephants remain outside protected areas. Thus the species spent more time outside protected areas than National parks. Successful identification and establishment of elephants corridors and buffer zones with proper land planning system, demarcations of farms land with beehive bees fence, public awareness, integration of locals in management practice as proposed in this paper would minimized these threats and go a long way in boosting the population of the African Elephant.

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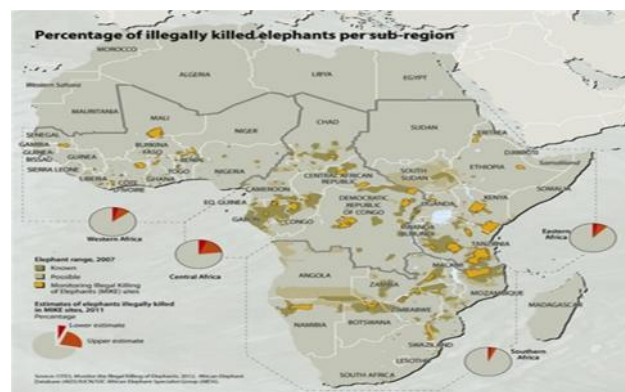
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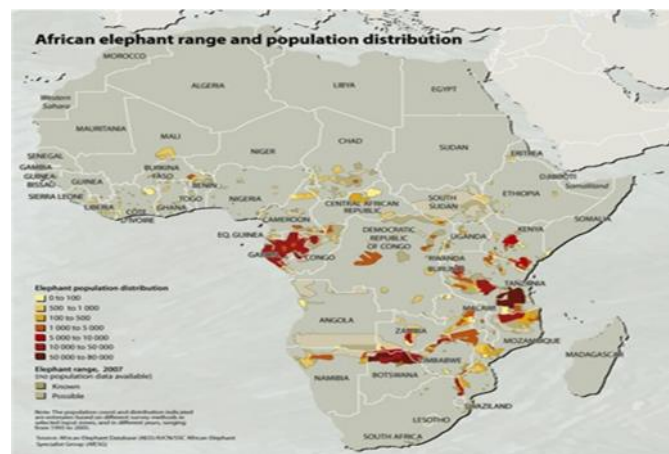
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Sources: CITES, Monitor the Illegal Killing of Elephants, 2012; African Elephant Database (AED)/IUCN/SSC African Elephant Specialist Group (AFESG)



Source: African Elephant Database (AED)/IUCN/SSC African Elephant specialist Group (AFESG)