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CHALLENGES OF HUMAN- WILDLIFE CONFLICT ON FOOD SECURITY AND LIVELIHOODS IN MABALE COMMUNITY IN HWANGE DISTRICT OF MATABELELAND PROVINCE IN ZIMBABWE

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ABSTRACT

Human-wildlife conflict is fast becoming a critical threat to the survival of many communities globally. The current study focused on the challenges of human-wildlife conflict on food security and livelihoods of Mabale community in Hwange District of Matabeleland Province in Zimbabwe. Particular attention was made on the causes of human-wildlife conflict, the community's attitudes and how the Hwange National Parks has responded to the problem. The Integrative Theory of Peace was used as a unit of analysis in the study. The study adopted a qualitative approach and descriptive research design. A sample of seventy (N=70) comprising of 5 officials and 65 communities members was used in the study. Interviews were used to gather data from the officers while questionnaires were used to gather data from the community members. The findings generally suggest that human-wildlife conflict has a negative impact on food security and livelihoods in the studied community. Negative attitudes on wildlife conservancy by the community also fuels human-wildlife conflict. As recommendations, a holistic approach that involves both the community and relevant authorities in the educational campaign to combat human-wildlife conflict is needed. Hwange National Parks should enact a border fence to curtail the free movement of wild animals into the community and livestock into the game park. There is also need for the revision of the Wildlife Act so that it becomes a robust tool in wild life management where wildlife interferes with human communities. Key words: Conflict, Human-wildlife conflict, food security, livelihoods, livestock

1. BACKGROUND TO THE STUDY

As human populations expand and natural habitats shrink, people and animals are increasingly coming into conflict over living space and food; thereby necessitating human-wildlife conflict(World Wildlife Fund,

2005).Human wildlife conflict is experienced especially in areas where people and wildlife share limited resources and boundaries(McGregor, 2005). Gasva and Moyo (2016) view conflict as an expressed struggle between at least two interdependent parties who perceive and pursue incompatible goals, scarce resources, and interference from others in achieving their goals. In this study, human-wildlife conflict is viewed as any interaction between humans and wildlife that results in negative impact on human social, economic or cultural life; on the conservation of wildlife population, or on the environment. Generally, human wildlife conflict (HWC) occurs when human or wildlife is having an adverse impact upon each other.

The current set-up in Zimbabwe is that National Parks are largely not fenced, and consequently, animals are prone to getting in and out of the Park into the communal area. During the colonial era, all National Parks were fenced. However, poachers and other criminal-minded individuals have destroyed the fence over the years (Food and Agriculture Organisation Report, FAO, 2009). The Mabale community is within the province of Matabeleland North under Hwange District and lies adjacent to the Hwange National Park. According to the FAO Report (2009), human deaths and injuries are the most severe manifestations of HWC, but they are less common than crop raiding or damage.

As a matter of fact, HWC is an issue of concern in Zimbabwe, the African continent and the world at large. It is most prevalent around protected areas, game reserves and national parks. The causes of HWC are diverse and it is vital to come up with mitigation strategies such as ecological factors, human factors and land use factors. Madden (2004) states that human-wildlife conflict occurs when the needs and behaviour of wildlife impact negatively on the goals of humans or vice versa which is when the goals of humans negatively impact the needs of wildlife. These conflicts may result when wildlife damage crops, injure or kill domestic animals, threaten or kill people. Such conflict may occur because a lion has attacked someone's livestock, killed someone or an elephant has raided a person's crops. The conflict also occurs when a person or community seeks to kill the lion or elephant in retaliation of the damage that would have been done by the animal.

According to Bakker et al, (2010), the African lion, for example, like other large carnivores, requires vast areas in which to roam. Human expansion and subsequent harassment by people increasingly restricts the lion to protected areas such as National parks, wildlife reserves and hunting areas. In Africa, interactions between humans and large predators are notably increasing as human occupation of land expands. As might be expected, most such

conflicts take place on the periphery of protected areas: cattle herders often penetrate them and new villages tend to be established on their borders, increasing the risk of lion attacks on livestock and people (Bakker et al, 2010).

Bakker et al, (2010) report that in Asia, for example, elephants are also destroying agricultural fields, tigers and leopards preying on domestic animals. In Africa, different carnivores are killing cattle and monkeys, elephants and wild pigs are threatening food security and livelihoods of rural populations while in Europe and North America, wolves and bears are preying on livestock and damaging property (McGregor, 2005).Bakker et al, (2010) assert that Lion attacks on livestock are a significant problem for rural populations, for whom domestic animals provide manure, milk and meat and are the basis of income generation, savings and social standing. The impact, however, varies according to the size of domestic herds and it is considerable for those with only a few head of cattle. Losses can consequently cause people to become hostile towards wildlife predators like lions and hyenas.

Blanc et al, (2005) contend that HWC escalates when local people feel that the needs or values of wildlife are given priority over their own needs, or when local institutions and people are inadequately empowered to deal with the conflict. If protected area authorities fail to address the needs of the local people or to work with them to address such conflict adequately, the conflict intensifies, becoming not only conflict between humans and wildlife, but also between humans and conservation stakeholders. Frequently, wildlife conservation initiatives suffer, the economic and social well-being of local people is impaired, local support for conservation declines, and conservation and development efforts meant to offset more general "costs" of living near a protected area may be impeded.

Arguably, human-wildlife conflict is generally a global problem, and is occurring in many countries where human-wildlife requirements overlap, (FAO Report 2009). For McGregor (2005), conflicts between humans and wildlife are encountered by many communities, particularly those residing close to protected areas containing herbivores and carnivores. HWC is more intensive in developing countries where agriculture is a major source of livelihood for the rural people and they are contentious because the resources concerned have a considerable economic value and are legally protected, (La Grange, 2006).

Protected areas and the presence of wild animal inflict costs on local communities and can destroy local support and tolerance for wildlife management and human-wildlife coexistence. Communities can develop a negative attitude towards reserves and wildlife fueling the conflict and undermining conservation efforts. In order to

reduce this conflict cycle, there is need to protect rural livelihoods, reduce their vulnerability and counter-balance losses with benefits and foster community- based conservation. Both people and wild animals suffer tangible consequences and different stakeholders involved should commit themselves to tackle and resolve the conflict in future. Bakker et al, (2010) state that the impact of lion predation on domestic animals, for example, depends on the scale of the livestock husbandry system. It can be devastating for small traditional farmers who depend on a few livestock and can, thus, become a significant problem at the local level and induce drastic human retaliation. The problem is particularly acute in areas where regular predation on humans and their domestic animals takes place.

The United States Aid International Development (USAID, 2010) reports that the incidence of crop-raiding by elephants in Africa has increased significantly over the last few years. The increased level of conflict might be associated with negative attitudes towards wildlife by most if not all farmers, the lack of grazing areas in National parks caused by the increasing population of herbivores. Generally, affected communities have limited knowledge in modern mitigation strategies. Carnivores are also a menace as they attack and kill livestock even people. According to FAO, (2005), in Botswana lions cause more than four times damage to livestock. There is also transmission of zoonotic diseases to livestock through the accidental mixing of wildlife and livestock.

Loss of human life occurs as a result of contact between wildlife and human beings. The World Wildlife Fund (WWF) (2005) states that in the Makgadikagi community of Botswana, there is low incidence rate of human fatalities or injuries because of the high level of awareness within the local communities of the dangers that are posed by wildlife. FAO (2005) highlights that in Cabo Delgado province of Mozambique, seventy people were killed by lions and almost thirty people are killed by crocodiles in Selous Game Reserve in Tanzania in less than five years. According to WWF (2005), there is a loss of wildlife species through retaliation in most countries; there is a decline in the lion population in Botswana for example, through being shot, poisoned or trapped.

About 12% of people from all backgrounds along the boundaries of the Makgadikgadi Pans National Park admitted to attempting to kill lions, (USAID Report, 2010). Most times HWC is perpetuated by the negative attitudes that governments have concerning compensation to victims of this conflict. Thus, victims find it easier to solve the conflict personally through retaliation, which subsequently fuels more conflict. According to the Department of National Parks and Wildlife Management (2015), between 2007 and 2013 a total of 1113 human wildlife conflict incidences were recorded in the Hwange area in which 95 heads of stock were lost to lions. There

is a strong seasonal component to the incidents of predation probably based on the low availability of prey in the wet season and also to the fact that the herds graze further away from the villages at this time.

The major challenges faced by Mabale community concerning HWC is crop raiding by large herbivores and livestock depredation by carnivores and this can reduce tolerance towards species that are already threatened, (USAID,2010). Human-wildlife conflicts can take various forms including carnivores attacking and killing livestock or humans, species raiding crops, competition for game and resources, disease exchange between livestock and wildlife, carcass poisoning and retaliation killing. The human attitudes and perceptions towards wildlife also contribute to human-wildlife conflict. The Department of National Parks and Wildlife Management (1998) states that negative interactions between humans and wildlife is a common problem along the periphery of protected areas in Africa and Hwange is no exception. Hyenas and lions are the major problem carnivores with elephants, wild pigs and baboons being the problem herbivores.

2. STATEMENT OF THE PROBLEM

Humans have battled with wildlife in Zimbabwe and possibly other countries and regarded wild animals as vermin, crop-raiders, livestock predators or vectors of disease. Food security is one of the primary goals in enhancing agricultural productivity and is also a facet of sustainable development. The Mabale community in Hwange district of Matabeleland North province in Zimbabwe serves as a classic example of an area with a high potential of Human-Wildlife Conflict (HWC). The community's livelihoods and food security have been affected and in this community, crop damage and attacks on domestic animals has been seen as a major problem. The community is located adjacent to the Hwange National Park which no longer has a fence to keep away wild animals from straying into the community. HWC is one factor which contributes to food shortages mostly at household level especially in those areas adjacent to National Parks or conservation areas.

3. PURPOSE AND OBJECTIVES OF THE STUDY

The major purpose of the current study was to explore the challenges of human-wildlife confliction food security and livelihoods of Mabale community in Hwange district. The study sought to achieve the following objectives:-

- To establish the causes of human-wildlife conflict in the Mabale community.
- To determine the challenges caused by human-wildlife conflict in the community

- To analyse the extent of impact of human-wildlife conflict on food security and the domestic animals in the community
- To identify the mitigatory measures to address human-wildlife conflict and their effectiveness

4. SETTING OF THE STUDY

The current study was undertaken in Mabale community which is in Hwange East constituency in the district of Hwange of Matabeleland North province in Zimbabwe. The community is under Chief Nelukoba and is situated 20km out of Hwange town and has a business centre. The total population of Mabale is 3195, which survives mostly on farming (Zimstat, Census Matabeleland North Provincial Report, 2012). The Community consists of a number of tribes, that is the Ndebele, Tonga and Nambya, although the dominant tribe is the Tonga. The problem of HWC emanates from the fact that the community lies next to Hwange National Park.

According to Department of National Parks and Wildlife Management (1998), Hwange National Park is the largest Park in Zimbabwe occupying roughly 14 650 square kilometres. It is located in the northwest corner of the country south of the Mighty Victoria Falls in the Zambezi valley. It became the royal hunting grounds to the Ndebele warrior-king Mzilikazi in the early 19th Century and was set aside as a National Park in 1929. Hwange boasts of a tremendous selection of wildlife with over 100 species of mammals and nearly 400 bird species recorded. The elephants of Hwange are world famous and the Park's elephant population is one of the largest in the world. The Park has three distinctive Camps and administrative offices at Robins, Sinamatella and the largest one at Main Camp.

The Department of Nationl Parks and Wildlife Management (1998), further states that Hwange National Park was founded in 1928 with the first warden being Ted Davison. The park is close to the edge of the Kalahari Desert, a region with little water and very sparse vegetation. The north and north-west of the park are dominated by the Mopani woodlands. Although it has been argued that elephant populations cause change in vegetation structure, some recent studies suggest that this is not always the case, even with the large increases in elephant population recorded in the late 1980s. The natural resource background, the population of cape wild dogs to be found in Hwange is thought to be one of the larger surviving groups in Africa today. Other major predators include the Southwest African lion whose distribution and hunting in Hwange National Park is related to the pans and waterholes, African leopard, spotted hyena and South African cheetah.

5. REVIEW OF RELATED LITERATURE

Human-wildlife conflict (HWC) is a growing global problem which is not confined to a particular geographic region as it is common to all areas where wildlife and human population coexist and compete for limited resources. Conflicts are usually intense where livestock and agriculture are an important part of rural livelihoods. Food security in Zimbabwe is connected to domestic agricultural production and livestock rearing. This study used the Integrative Theory of peace as a unit of analysis. The theory states that peace is a psychological, social, political, ethical and spiritual state with its expressions in intrapersonal, interpersonal, intergroup, international and global areas of human life. According to Danesh and Clarke- Habibi, (2007), the theory asserts that all human states of being, peace included are shaped by the people's worldview, the view of reality, human nature, purpose of life and human relationships.

As noted by FAO, (2009), the main cause of human-wildlife conflict (HWC) worldwide is the competition between growing human populations and wildlife for the same declining living spaces and resources. For FAO, the transformation of forests, savannah and other ecosystems into agrarian areas or urban agglomerates as a consequence of the increasing demand for land, food production, energy and raw materials, has led to a dramatic decrease in wildlife habitats. Under these conditions conflict between wildlife and humans in local communities has inevitably increased (Blanc et al, 2005). This is perfectly illustrated by the conflict between human's and elephants. It is estimated that about 80 percent of elephant range lies outside protected areas, (USAID Report, 2010). This habitat is rapidly being eliminated and fragmented by intensified agriculture, and is resulting in one of the most serious human-wildlife conflicts.

USAID Report (2010), states that in Zimbabwe and Kenya, for example, elephant damage to food crops accounts for as much as 75-90% of all destructive incidences by large mammals every year. It is now an on-going threat of elephants within the communities but obviously a solution to the problem has to be reached. The solution may not totally eradicate the problem but try and reduce it, without any detrimental effects on both sides; instead beneficial. Elephants are a menace to communities adjacent to National Parks in Africa every year as there is always a wildlife induced drought. According to Blanc et al (2005), almost all human societies lived by hunting and gathering around ten thousand years ago. Co-existence between humans and animals was never strained as natural resources were abundant in terms of quality and quantity. When people started cultivating land for agricultural purposes and tamed animals, reliable food resource base became abundant, but this faced new threats of crop damage by wild animals such as elephants and wild pigs.

Humans have suffered losses in crops and livestock ever since there has been agriculture (FAO Report, (2009). A rise in human population, the subsequent demand for settlements and socio-economic activities has led to expansion of human activities up-to the edges of National Parks and marginal land were wild animals are found (Araman, 2009). McGregor, (2005) also argued that demand is a factor driving human wildlife conflicts and is made more complex by issues like poverty and overpopulation. The same source further noted that addressing issues related to economic development can be used as a conflict management strategy in cases where demand is a factor in human wildlife conflict. Hulmes and Murphre (2001) state that an increase in human populations and poverty, coupled with the need to improve livelihoods continues to increase problems in conservation areas; one of the most pronounced being 'human wildlife conflict'.

A direct connection between human population, poverty and livelihood improvement activities was also drawn by McGregor, (2005) who argues that pressure on the environment arises from land requirements for development and poverty alleviation activities. He also further notes that this is aggravated by the ever increasing human populations around conservation areas. In a scenario where wildlife induced damages to human property or life are neither controlled nor compensated, negative attitudes become entrenched with the locals and they, therefore, regard wildlife as a livelihood threat (Araman, 2009). This is worsened by incidences where local communities do not benefit from conservation efforts and are alienated from economic enterprises related to wildlife, for example, the tourism industry.

Bakker et al (2010) further state that, eastern and southern Africa are the regions where most lion attacks on humans occur. In Tanzania, according to Anderson and Pariela, (2005), lions killed 563 people between 1990 and 2006, and injured at least 308. Tanzania is home to the world's largest lion population and is the country where the largest number of people is attacked by lions per year. Blanc (2005) estimates that about 200 people are killed in Tanzania every year by wild animals, of which the largest number is by lions. A recent case study of true maneaters in southern Tanzania found that at least 35 people had been killed in 20 months by one or more lions in a 350 square Kms area 150 km south-west of Dar es Salaam, between the Rufiji river and the Selous game reserve (Araman, 2009). According to McGregor, (2005), a similar escalation in lion attacks was experienced in Cabo Delgado province in Mozambique, particularly on the Mueda plateau as recent reports suggest that 46 people were killed between 2002 and 2003 in Muidimbe district on the Makonde plateau; 70 people were killed between 2000 and 2001 by lions in Cabo Delgado. In Niassa National Reserve in Mozambique, at least 11 people were

killed by lions and 17 injured in the last six years; with other attacks possibly remaining unreported (Blanc et al, 2005).

In Togo, around Fazao Malfakassa National Park, the area raided by wildlife between 1994 and 1999 was estimated at 204 ha, and represented loss of 252 tonnes of yam, maize, rice, sorghum and cassava, with a gross value of US\$77 730 (Blanc et al 2005). In the area, around the Bénoué National Park in Cameroon, communities lost an estimated 31 percent of their annual crop income and 18 percent of their annual livestock income per household. Elephants can also damage food stores during the dryer months following the main harvest. The loss of this stored food is considered far more disruptive to farmers than the raiding of crops while they are still growing in the fields, possibly because so much damage can be done to a concentrated food source in a short space of time. Damage to field crops can be repaired by planting replacements if the damage occurs early in the season, but food stores cannot be replaced until the following growing season (Hume and Murphre, 2001).

6. RESEARCH METHODOLOGY

Research design

This study adopted a qualitative approach which is an interpretive, naturalistic approach to the world and it seeks to study things in their natural settings in the course attempting to make sense, or interpret, phenomena in the terms of meaning people bring to them(Corbin and Strauss, 2008). The qualitative approach enabled the researchers to study the problem of human wildlife conflict in detail and in its natural context. The research design which was used in this study is the descriptive design. According to Yin (2011), descriptive research design seeks to provide an accurate explanation of observations of phenomena. Descriptive research design also strives to collect, integrate and present data from a variety of sources of evidence as part of any given study.

Research Population, Sample and Instruments

The targeted population of Mabale community was 677 households, with a family size average of 5 (Zimstats, Matabeleland North Province Census Report 2012). Sixty-five (65) households where one respondent was used from each household were selected from Mabale community. The sample size used was seventy (N=70), where the other five (5) respondents selected for the study were the Chief, District Administrator, CAMPFIRE Manager, Agritex Officer and Hwange National Park Main Camp Manager.

The study used a non-probability sampling method. Oliver (2010) points out that non-probability sampling enables the researcher to arbitrarily select the sample which one considers important for the research and believes it to be a typical representation of the population. Purposive sampling which falls under non-probability sampling method was accordingly used to work with selected households which are situated along the boundary with National Parks which was found to be manageable in the current study.

The researchers used key informant interviews and questionnaires as research instruments to gather data. Key informant interviews were done with the Chief of the area, District Administrator, Hwange Rural District Council (HRDC) chief executive officer, Agritex Officer and Hwange National Park Manager. Questionnaires were then administered using the purposive sampling technique, to the participants from selected households to solicit information on the frequency of occurrence of human-wildlife conflicts (HWCs).

7. STUDY FINDINGS

The study conducted 5 interviews and distributed 65 questionnaires and the return rate for Interviews was 5 (100%) whilst questionnaires return rate was 54(83%). Thus, the researchers considered the return rate to be an adequate representation of the sample.

Respondents were asked about their sources of income and 29 (54%) respondents stated that they were into farming, 17 (31%) were formally employed, while 8 (15%) respondents said they were into any other business for survival. This clearly shows that the majority of the respondents rely on farming as a source of income. Thus, human-wildlife conflict (HWC) in this case had potentially devastating effects on the food security and livelihoods of Mabale community.

On whether HWCs affected food security and livelihoods,47 (87%) respondents said the conflicts did; and they highlighted that it is a seasonal problem for the crops during the summer season, while it is a perennial problem for the livestock. About 7 (13%) respondents stated that HWC does not affect food security and livelihoods. According to Haralambos and Holborn (2005), the foundation of every culture or community lies in its worldview; which is its socio-cultural fabric, norms and values. Mabale community, thus, has its worldview pertaining to wildlife which informs the position taken by the Integrative Theory of Peace which states that all human states of being, peace included are shaped by the people's worldview. Accordingly, the most common worldview in Mabale community is that human-wildlife conflict has a negative impact on food security and

livelihoods. This is shown by the statistics presented above with more people (87%) stating that it has an impact on food security and livelihoods.

A total 28 (52%) respondents stated that they use draught power to work in their fields, 22 (41%) respondents highlighted that they use hoes to plough their fields, while 4 (7%) respondents said that they use tractors. This shows that a large proportion of the community (52%) rely on livestock for the preparation of land. This translates to the fact that when carnivores attack livestock which is a source of food, there is profound impact on food security and field preparation is also affected. However, those community members who prepare their land using tractors and other means also fall victims to HWC as crops are often destroyed during the harvesting season.

As many as 36 (67%) respondents stated that they have a negative attitude towards wildlife conservation because they bemoaned the loss of livestock and destruction of crops by wildlife, thus, leading to negative attitudes about wildlife conservation. On the other hand, 18 (33%) of the respondents indicated that they have a positive attitude towards wildlife conservation because it is crucial to avoid wildlife species from extinction and it also boosts tourism. The above statics show that the majority of the respondents (67%) have a negative attitude towards wildlife conservation. Thus, the statistics confirm the assertions by the Integrative Theory of Peace which states that communities have worldviews which they identify with, and that it's a socio-cultural fabric which holds the community together.

However, the underlying perspective is that most of those people harbor a negative view towards wildlife because of the damages caused to their crops and livestock. As the Integrative Theory of Peace states, there is a general need for effective peace education so as to eradicate negative attitudes towards wildlife in order to create a peaceful co-existence between humans and wildlife. Peace in such a situation can only be attained by a process of transformation. This process should be based on the recognition that peace requires a conscious effort, a universal outlook, and integrated and unifying approach to eradicate such negative perspectives and create a situation where the community and wildlife live in harmony.

As many as 39 (72%) respondents stated that there has been loss of human life due to HWC in the community while 15 (28%) respondents indicated that they did not have evidence that human life had been lost. Thus, the majority (72%) in this case stated that indeed, there has been loss of human life due to human-wildlife conflict. According to the principles of the Integrative Theory of Peace, one of the vital aspects of peace education is its considerable contribution to the formulation of a community's worldview. Effective peace education through

educational campaigns by relevant stakeholders is thus, needed in this case such that the Mabale community develops a culture of a unity-based worldview where there is collectiveness and cases of loss of human life through HWC are reported to the relevant authorities timorously.

Also, as many as 47 (87%) respondents stated that they had carried out retaliation killings on problem animals whilst 7 (13%) respondents indicated that they had not carried out any retaliation killings. Thus, cases of retaliation killings (87%) seem to be rife in the community under study. The cases that are there can be attributed to what the principles of Integrative Theory of Peace state as the meaning of human behaviour. The Integrative Theory of Peace also highlights that peace has its roots in the satisfaction of human need for survival, safety and security, in the human quest for freedom and justice. In cases where the relevant authorities have failed to act on time, villagers affected by HWC have retaliated by killing the problem animals as a way of appeasement for the damage done to the crops and livestock.

Asked whether relevant authorities had done educational workshops on wildlife conservation, 35 (65%) respondents stated they had not been done on wildlife conservation and 19 (35%) respondents stated that educational workshops had been done. A large proportion of the respondents stated that educational workshops on HWC and wildlife conservancy have not been conducted, and the worldview regarding the treatment of wildlife remains the same. There is no co-existence between wildlife and humans, thus, the educational campaigns done so far seem to have had no impact on the community. According to the Integrative Theory of Peace, the transformative effect of peace education must gradually be felt at the intra-personal, interpersonal and inter-institutional levels. Thus, the transformation of the negative worldview towards wildlife conservation in Mabale community must begin at individual level to the community level.

The interviewed District Administrator (DA) noted that the causes of HWC in Mabale area were mainly the continual human-wildlife interface as the community was located adjacent to the Hwange National Park. The DA was quick to point out that human; livestock and wildlife are continuously fighting for the limited resources that are there, thus, encroaching into the national park and, therefore, sparking conflict. He further noted that HWC is perennial and the magnitude varies with the seasons. He also highlighted erratic rainfall as another cause of food insecurity in community. The DA raised concern over the gross impact of wildlife on food security and livelihoods in the area by stating that mostly; elephants severely destroy crops whilst lions attack livestock which is also used as draught power for ploughing.

The DA further pointed out that the mitigatory measures that have been put in place by the Hwange Rural District Council (HRDC) is the stationing of scouts in Mabale community and other HWC hotspots to carry out surveillance on problem animals such as lions and elephants. Other stakeholders or non-governmental organisations (NGOs) like WILDCRU collar the problem animals so as to monitor their movement through satellite and alert the scouts if these animals move into the community. The DA highlighted that there are loopholes concerning efforts to combat human-wildlife conflict. There is discord on the legal framework and the reality on the ground. He stated that the wildlife regulations somewhat protect wildlife to the detriment of human life. Compensation is not clearly spelt in the legal framework and, thus, the community feels shortchanged when it comes to HWC management.

The interviewed Agritex Manager stated that the causes of HWC in the community were the scramble for limited resources by humans and wildlife. She also highlighted that erratic rainfall patterns in Mabale community has led to limited grazing resources and, thus, livestock encroach into the Hwange National Park in search of grazing pastures; consequently risking being attacked by lions and other predators. The Agritex Manager further stated that HWC has a serious impact on food security and livelihoods in Mabale community. She pointed out that elephants and lions are the major problem animals and they cause more damage although wild pigs, quail birds, buffalos and kudus also contribute to food insecurity and affect livelihoods in the community. She stated that HWC is generally seasonal for crops are usually affected during the harvesting season in summer. She advised that the community has been educated on the need to plant pepper on the edge of the plot so as to scare elephants away and to keep livestock in kraals in the evening.

The interviewed Hwange National Park Manager highlighted that the increase of the elephant population contributed to HWC as these elephants move freely and they enter the community, therefore, ravaging the crops. He pointed out that it is alleged that communities living adjacent to the Hwange National Park vandalized the fence which created a boundary and used it to fence off their homesteads. He further indicated that climate change and negative attitudes towards wildlife conservation also contributed to food insecurity in the community. He further stated that in some cases, climate change also affected food security and livelihoods although in most cases HWC is blamed which is not always correct. He pointed out that negative attitudes in abiding to combat strategies by the community and non-tolerance of wildlife also fuels the conflict.

The Hwange National Park Manager revealed that the Park in collaboration with WILDCRU has embarked on the collaring of problem animals to monitor their movement and the community has been taught on the importance of reporting problem animals to the relevant authorities. However, the HWC still remains unresolved.

The interviewed Chief highlighted that the damage caused by HWC is severe in the sense that a herd of elephants can ravage half or an entire field, whilst lions attack livestock which is used for ploughing and also as a source of food. He stated that HWC is a perennial problem, with lions and elephants being major threats. The Chief pointed out that the community has generally developed a negative attitude towards wildlife conservation because the relevant authorities do not react on time when called upon for assistance. He also indicated that the other challenge was that the wildlife legal framework is not clear concerning HWC and the compensation of community victims.

8. CONCLUSIONS

Based on the above research findings, the study confirmed that human-wildlife conflict (HWC) generally has a negative impact on food security and livelihoods of the studied community. The study also revealed that the major problem animals are the elephant and lion. The increase of wildlife population has also fueled human-wildlife conflict as there is a competition for resources. However, climate change is another factor which contributed to the food insecurity and loss of livestock. HWC in the area can be considered as a perennial problem. Lack of understanding of wildlife conservancy by the community has led to retaliation killings which also fuels HWC.

9. RECOMMENDATIONS

Based on the above study findings and conclusions, the researchers recommended that:

- Hwange National Park should enact a border fence to curtail the free movement of wild animals into Mabale community and livestock into the game park.
- There is need for the revision of the Wildlife Act such that it takes into consideration the negative impact of human-wildlife conflict on human life.
- Educational campaigns by Hwange National Parks and other authorities should be carried out to educate the community intensively on wildlife conservancy and causes of human-wildlife conflict so as to

achieve attitudinal change and create an environment where there will be peaceful coexistence between wildlife and human beings.

 The District Council authorities should also educate the community on the importance of practicing mitigatory measures in order to combat human-wildlife conflict.

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