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Climate Change and Human-Wildlife Conflict: A Case of Berejena in Chivi District, Zimbabwe

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Abstract: *Climate change often affects the harmonious coexistence of humans and wildlife. This qualitative study assessed the impact of climate change on human-wildlife relationships in Berejena. The researchers interviewed a convenient sample of 10 participants and thematically analyzed the collected data. This study established that the climate in Berejena has changed, now characterized by erratic rainfall and high temperatures, leading to resource depletion. This triggered wildlife to move into human territories, causing havoc to crops, livestock, and humans themselves. Humans are also forced to encroach on wildlife areas for resources. The study concluded that climate change has precipitated human-wildlife conflict in Berejena. The study therefore underscores the need for policymakers to create policies that address human-wildlife conflict, support habitat restoration projects to rehabilitate degraded ecosystems, provide safe ways to deter wildlife, and promote community education on harmonious coexistence with animals, since they share the same geographical space.*

Keywords: *Climate; Humans, Wildlife; Coexistence, Conflict; Ecosystems, Zimbabwe*

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1. Introduction

Climate change has become one of the topical issues due to its effects on both humans and wildlife. Driven primarily by unruly human activities such as burning fossil fuels and deforestation, excess greenhouse gases are trapped in the atmosphere, usually causing high temperatures and low rainfall. This has, in turn, disrupted the normal life of these two groups of beings, causing competition for resources for both. Both human and wildlife behaviour change due to resource scarcity. Thus, climate change is seen as a motivator of human-wildlife conflict (Abrahms, 2023).

This issue of climate change, which has escalated human-wildlife conflicts, is rampant across the world, as highlighted by Abrahms (2023). Similarly, Newsom (2023)'s study revealed that in forty-four countries around the world, there was high competition for resources due to prolonged droughts. Very dangerous animals such as snakes, crocodiles, leopards, etcetera were found encroaching on human territory in search of food. This clearly indicates that climate change is a driver of human-wildlife conflict. Accordingly, efforts to address these human-wildlife conflicts are intensifying.

Human-wildlife conflict is not peculiar to developed countries, but it is a widespread phenomenon affecting many African countries as well. For example, in Kenya, Hong (2020) noted that there was destruction of crops and livestock predation. This was due to resource competition, mainly for food and water, due to persistent drought. Similarly, in Zambia, Chilambe (2024) and Kupika (2024) observed that climate change, especially drought, was a motivation for human-wildlife conflict. There was therefore a need for mitigatory measures specifically in areas at risk.

In Zimbabwe, a shift in weather patterns has been witnessed, which is characterized by erratic rainfall and persistent drought. This has had an effect on flora and fauna as well as human livelihood. Continuous drought has led to food shortages and water scarcity for both humans and animals, negatively affecting their interactions. A study by Mupunga and Shoko (2024)

highlighted that climate change, in the form of drought, escalated human-wildlife conflict in Zimbabwe when both humans and wildlife suffered a shortage of water and food. In the same vein, Pisa and Katsande (2021) noted a climate change that triggered human-wildlife conflict in the vicinity of Gonarezhou National Park that put humans' lives at risk from attacks by wild animals. Likewise, communities in the Matobo area faced increased human-wildlife conflicts, including loss of human lives (Zizhou, 2022). This is consistent with the Masvingo Province Report (2024), which highlights some human-wildlife conflict faced by communities due to climate change. While many studies were conducted in Zimbabwe on human-wildlife conflict, little is known about human-wildlife conflict in the Berejena area.

These conflicts are a cause for concern as they are a threat to human safety and also cause economic losses, as Carpenter (2022)'s study established that climate change has some economic implications as it causes crops and livestock predatory attacks. The conflict also creates clashes between environmental management authorities and the neighborhood communities. This is why Abas (2025) highlighted the need for the government and non-governmental organizations to be roped in to address the issue.

Some studies carried out in Africa revealed some futuristic impact of climate change on the future of communities, such as food insecurity due to crop destruction and by wildlife; Salerno (2021) argued that climate change presents amplified threats to human food security. Climate change not only poses conflicts between people and animals but also affects society economically. Morgan and Nyanga (2023) echoed the same sentiments that human-wildlife conflicts pose economic challenges to small-scale farmers as their crops are destroyed by wildlife. This study also assessed the economic losses caused by climate change in the Chivi area.

Research revealed other factors, such as increasing population densities and changes in land use, as contributing factors to human-wildlife conflict (Yengoh, 2024). These studies mainly focused on the causes of human-wildlife conflict in other African countries. The Berejena area remains unexplored, hence the need for this study. This study is therefore adding to the interrogation on human-wildlife conflict, especially in less studied areas such as Berejena in Chivi.

2. Literature Review

Literature has shown that the problem of this study is not unique to Berejena as other areas in Zimbabwe are also affected (Mupunga & Shoko, 2024). In other countries of Africa, human-wildlife conflict is a real challenge, especially in Kenya and Tanzania, which are characterized by huge game reserves (Hong 2020). This is also true for the developed world (Mekonen, 2020).

2.1 Nature of human-wildlife conflict

Human wildlife conflict is the competing interaction that takes place between humans and wild animals who usually reside in the same geographical area having a negative effect on human livelihood and safety for both animals and people. These conflicts often occur when human activities such as farming, settlement, and infrastructure encroach on wildlife territories. This encroachment on wildlife habitats results in scarce in resources for animals, leading to competition for resources with humans, such as food and water. In the end, animals may raid crops, attack livestock, or kill humans. Humans may retaliate by harming or killing the wild animals. These clashes pose a threat to both development and biodiversity. This is the case with Bikita in Masvingo, Zimbabwe, where Ndoro (2024) pointed out that the nearby villages have suffered from human-wildlife conflicts, with animals encroaching on homes and gardens in search of water. The wildlife, including lions, elephants, and hyenas that menace the villagers, are from the Save Conservancy (a protected area).

Numerous studies have been carried out to elucidate what human-wildlife conflict is all about. Konig (2020) saw human-wildlife conflict as interactions between animals and people that have negative consequences. The conflict usually happens when animals injure or kill people or damage crops. Humans also retaliate by killing the wildlife. Similarly, Mekonen (2020) explained that human-wildlife conflict is a situation where the needs and behaviour of wild animals affect humans or vice versa. In the same vein, Muhanga (2025) cites human-wildlife conflict as an action that is done by humans or wildlife that has negative effects on the other. Thus, human-wildlife conflict not only affects people but also has adverse effects on wild animals.

2.2 Causes of human-wildlife conflict

Human-wildlife conflict has become a cause for concern the world over. As human activities such as agriculture and infrastructure continue to grow, natural ecosystems are disrupted, bringing humans and animals into closer contact. This has led to clashes between humans and wildlife. Mekonen (2020) highlighted a number of factors that cause human-wildlife conflict, which include human settlement, overgrazing by livestock, deforestation, and agricultural expansion. Similar activities are also taking place in the Berejena area in Chivi. Understanding the root causes of human-wildlife conflict is important for crafting mitigation strategies. There is also an increased human population close to wildlife, making it possible for clashes with wildlife.

Similarly, Muhanga (2025) argued that population expansion is one of the causes of human-wildlife conflict. A growing population in rural areas is usually seen as causing human-wildlife conflict. This expansion leads to humans encroaching on wildlife territories. As a result, there will be competition for resources. Correspondingly, Makumbe (2022) noted that humans always hunt wild animals because they attack them, raid their crops and livestock. Thus, there exists an antagonistic relationship between humans and wildlife. Makumbe highlights that animals such as lions, leopards, elephants, and crocodiles cause havoc to humans. Few

studies have examined this antagonistic behavior in the Berejena area in Chivi.

Furthermore, Makumbe (2022) indicated that population increase in wildlife also causes human-wildlife conflict. In concurrence, (2025)'s study revealed that high elephant numbers caused human-elephant conflict. This was due to insufficient forest cover. The same study showed that there was an increase in crop production in Thailand, which attracted wild animals.

In a similar study, Wangchuk (2023) found that the human population put pressure on land and natural resources. Equally, Tiwari (2025) said that land is one aspect that may cause HWC if not properly used. The study indicates that proximity to wildlife habitats is having a likelihood of causing human-wildlife conflict. For example, if humans expand their activities towards wild animals' territories, there will be a collision. In agreement, Makumbe (2022) pointed out other factors related to land use that are drivers of HWC. These include changes in land use, for example, the resettlement of farmers in traditionally wildlife areas or wildlife ranches changed to agricultural lands, or in some cases, mixing wildlife and agriculture (Konig, 2020). Thus, the change in land use causes HWC. This study will ascertain whether these are some of the causes of HWC in Chivi.

2.3 Effects of climate change on human-wildlife interactions

Climate change, which is referred to as 'the long-term changes in temperatures and weather due to human activities' by Shivanna (2022), has effects on human-wildlife relationships. Climate change has greatly recalibrated the patterns between humans and wild animals. Rising temperatures and changes in rainfall patterns have forced wild animals to move beyond long-established ranges in search of water, food, and shelter. This intensified overlap with human settlements has led to more encounters, which often result in livestock predation, crop destruction, and loss of both human and wildlife lives. As the impact of climate change becomes more pronounced, it becomes crucial to address these changing relationships to promote cohabitation and biodiversity conservation.

Research has shown that climate change as a driver of human-wildlife conflict destabilises human livelihoods. Abrahms et al. (2023) noted that climate change throws off balance both economic and human livelihoods. This is because it aggravates resource scarcity as well as changes in both animal and human behaviours due to heightened human-wildlife encounters. In addition, Datta, Behera and Sonobe (2025) observed that wildlife that once lived in impenetrable forests is now being moved out of its typical habitat by harsh weather conditions. These animals, in search of food and water, end up straying into human settlements. This creates situations that endanger both wildlife and humans. As a result, crops are destroyed, livestock as well as economic decline.

Furthermore, Newsom (2023) indicates that climate change affects wildlife. At the same time, conservation efforts on wildlife will be shattered. Thus, people may face food insecurity due to crop destruction, as well as living in constant fear of wildlife

In light of the preceding, Makumbe (2022)'s study revealed that wild animals such as lions, elephants, and crocodiles were the main causes of human-wildlife conflict. The conflicts were due to a change in land use. For example, where land traditionally reserved for ranches had been turned to human settlement. Basera and Makandwa (2025) also highlighted that human-wildlife conflict in Chiredzi occurs in sites such as Sengwe and Xibhavahlengwe because people share space with wild animals. This is not healthy for both humans and wildlife, as conflicts are inevitable. To add on to that, Pisa and Katsande (2024) observed that human-wildlife conflicts had negative effects on humans, causing people to live in constant fear for their lives. Mupunga and Shoko (2024), in concurrence, stated that change in climate has negative effects on both humans and wildlife. Climate change aggravates competition for resources between humans and animals. This results in conflicts as wildlife will encroach on human habitats in search of resources. Despite extensive research on human-wildlife conflict, limited attention has been given to the Berejena area in Chivi

2.4 Possible solutions

HWC has emerged as a topical challenge for both development and conservation, especially in areas where humans live near wildlife environments. These conflicts may be a result of a number of factors, such as climate change, growing human or wildlife population, land use, or resource competition. The conflicts may lead to loss of both human and animal life. Decreased food production, which adversely affects the economy. However, a number of measures have been put in place to curb the losses caused by HWC.

A study by Khattak (2021) and Tiwari (2025) suggested that keeping small herds of cattle, compensating the victims of wildlife damage, as well as educating people can assist in minimizing human-wildlife conflict. Some conflicts are due to negative attitudes or perceptions that the community has toward wild animals. Thus, if people are enlightened. On the importance of coexisting with wild animals, they are more likely to support and implement preventive measures. In the same way, Tiwari (2025) put it that there is a need for a holistic approach that takes into account multiple predictors to comprehend and predict human-wildlife patterns.

In addition, Muhanga (2025) carried out research in Tanzania, which revealed that the One Health Approach is one technique that can be employed to curb HWC. The approach calls for professionals from different disciplines to work together in providing a sustainable solution for both humans and wildlife. It's an understanding that, united, people can achieve greater things. The study gives some insights into minimizing HWC. Nothing of this sort has been tried in the area under study; hence, it needs a trial. On the other hand,

Mekonen (2020) highlighted how crop destruction by wild animals can be minimized. Crop guarding, live fencing, and scarecrows have been cited as ways of protecting crops from being vandalized. Thus, the community needs to take an active role in alleviating HWC.

In another study by Feuerbacher et al. (2021), farmers can address HWC by using a low-cost electric fence rather than traditional methods such as hunting, scaring, among others. The authors suggest the use of technology such as an electrified fence. The strategy has been found effective in different situations. Grang (2022) concurs by stating that chilli fences and electric fences are effective in curbing human-elephant conflict. It may be prudent to determine the usefulness of these strategies on other animals. In like manner, Rodney (2021) suggested electric fences and vigilant livestock herding as effective mitigation measures. The study also recommends policies that assist victims of HWC, especially the vulnerable, such as female-headed families and low-income families. Thus, this study seeks to bridge this gap by providing mitigation measure which cater to the disadvantaged group.

2.5 Research Questions

This study examines the nexus between climate change and human-wildlife interactions. It also assessed the impact of climate change on local communities and suggested strategies to minimize conflicts and promote coexistence using the following research questions:

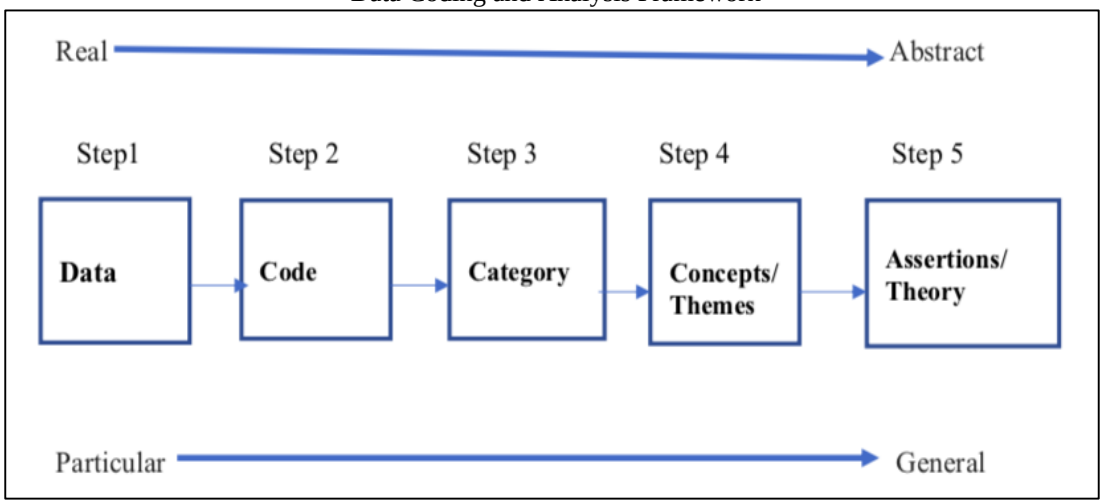
1. What are the causes of human-wildlife conflicts in Chivi district?
2. Which are the effects of human-wildlife conflicts in Chivi district?
3. Which are the possible mitigating measures on human-wildlife interactions in Chivi district?

3. Methodology

This study employed a case study design focusing on the Berejena area in Chivi district. It took a qualitative approach to explore and understand how the Chivi people perceive the causes and effects of human - wildlife conflict, as well as the possible mitigation measures to this challenge. The study used a sample of 10 conveniently selected participants, as guided by Creswell and Creswell (2018), who argued that 10 informants are enough for data collection using interviews. These 10 informants were subjected to in-depth semi-structured interviews. The researchers asked important and well-suited questions to people who had knowledge about the phenomena at stake, as Mandizadza and Moyo (2021) suggested. Informants opened up their minds and showed the researchers their knowledge, values, and preferences as well as their attitudes and beliefs in line with the topic at stake.

The researchers analysed the collected data following 4 of the 5 steps suggested by Saldaña (2016) as shown in the table below.

Data Coding and Analysis Framework



Adopted from Saldaña (2016)

The first step was the gathering of excerpts from the interviews that constituted the real feedback on the lived experiences of the respondents. This was followed by coding, that is, the researchers created codes from the collected data. Useful extracts were taken note of and coded as well. The researchers therefore used descriptive coding to summarise data extracts using a single word or phrase that conveyed overall meaning. Then these codes were categorized according to themes that emerged.

Ethical considerations

The researchers put effort into applying qualitative research ethics when carrying out this study. They ensured informed consent on the part of the informants by giving them detailed information about the purpose of the study, the procedures, as well as their voluntary data giving. Confidentiality was ensured by anonymization of their identities at all levels of the research. The interview process was carefully crafted, and the researchers made

an effort to avoid any potential risk of psychological discomfort, and informants were told of their rights to decline answering some questions and to withdraw from the study without any consequences.

Data management

The researchers implemented a systematic data management protocol so as to ensure the necessary security, confidentiality, and auditability of the collected data. Transcripts of informants' contributions are safely stored in one of the researchers' private password-protected laptops. Physical documents, such as signed consent forms, were kept in a locked filing cabinet in the researcher's private residence. Transcription point anonymization was used, where all informants' identifying details were removed.

4. Results and Discussion

The following findings are given in accordance with the research questions and the themes that emerged.

4.1 Causes of human-wildlife conflicts

The findings of the study revealed that climate change and drought have worsened resource scarcity and escalated respiring competition between humans and wildlife, including for food and water.

> One informant had this to say:
> *For the past few years, with increasing climate change, rainfall has been erratic, and there have been frequent heat waves and droughts. This worsened food shortages. As a result, wild animals have destroyed crops and raided livestock.*
>
> Another one asserted:
>
> *Berejena area is located in an area with low and unreliable rainfall, high temperatures, and vulnerability. The situation has been highlighted by climate change, where rainfall patterns are not predictable, and rainfall has decreased significantly. This has increased the frequency of contact between humans and livestock on the one hand and wildlife on the other.*

The responses from the participants indicated that there is conflict between humans and wildlife due to climate change, especially the recurrence of drought. The erratic rainfall patterns caused by climate change have made humans and wildlife compete for resources. This is in line with what Ndoro (2024) observed, that due to the scarcity of resources which is caused by climate change, humans have suffered from humans' wildlife. Also, wild animals are encroaching on human territories in search of water and food. Konig et Al, (2020); Mekonen (2020) confirmed the same when they said that human-wildlife conflicts have consequences on both humans and wildlife. It can be noted that climate change is destroying natural habitat, forcing wildlife to encroach on human settlements in search of food and water. This shows that there is resource competition, which leads to conflicts and economic losses.

The study also revealed that human settlement has expanded as new families emerge due to marriages. This has also sparked agricultural expansion since every new family should get land for a living. Human settlement and agricultural expansion have, in turn, triggered overgrazing due to the expansion of livestock and deforestation due to bush clearance, creating farmland for the new families.
One informant has this to say:
Most of our own sons remain in the village because they cannot get employment in town. When they get married, each of them needs his own piece of land in order to earn a living.

This means that there is population growth in Chivi as well as land use changes, which in turn negatively accelerate human-wildlife conflict.

Human safety is also at stake as wild animals attacking humans are becoming more frequent, posing a significant threat to human safety. Not only do humans suffer, but wild animals are also killed by people when defending their lives. Again, Climate change is destroying natural habitats, forcing wildlife to encroach on human settlements in search of food and water. This finding is in agreement with Muhanga (2025), who noted that human- wild conflicts affect both humans and wild animals.

4.2 Effects of human-wildlife conflicts

The researchers found that the problematic animals have been raiding fields and even homesteads for food. One participant highlighted that:

> *Animals such as baboons, jackals, and hyenas are causing havoc in the area. Jackals have been raiding livestock, especially goats. Though hyena sightings and attacks have been infrequent, they pose a threat to both livestock and humans.*

This shows severe social disruption, and in response to these threats, human have resorted to hunting parties to invade these animal habitats and reduce their population.

> In concurrent, another opened that:
> *Climate change disrupts rainfall patterns, which usually shifts the migration routes of wild animals. New routes usually pass through human inhabitants. This increases human-wildlife encounters. Animals such as jackals, baboons, and hyenas usually clash with humans.*

These responses are similar to those by Shivana (2022) who noted that climate change has highlighted the movement of wildlife towards human setting search towards human settlement in search of water. On the same note, Abrahams (2023) concurs by citing that climate has caused wild animals to move beyond their habitats in search of water and food. In addition, Basera

and Makandiwa (2025) propound that human-wildlife conflicts were a result of shared space between humans and wildlife. From the response of the informants, it can be noted that climate change has caused a lot of negative impacts such as loss of human life, destruction of property and crops, and threats to wildlife conservation, among other things. This means that there is resource Competition where humans and wildlife are competing for scarce resources, leading to conflicts and economic losses. Furthermore, human-wildlife conflict has instilled constant fear in humans of animal attacks, while the killing of wildlife by humans in defense of their lives causes imbalance, as the killing of wildlife disturbs the ecosystem.

4.3 Possible mitigating measures

The findings have shown that human-wildlife conflicts are a cause for concern in the Berejena area. Therefore, there is a need to address the issue. To avert the challenge of the rising human populations and expanding human settlements into wildlife territory, which has caused destruction of wildlife habitats, there is a need for habitat restoration, which can be done by the community as habitat restoration projects to rehabilitate the degraded ecosystems, as an informant suggested. Fences can also be erected so as to protect crops and domestic livestock from wildlife threats.

Participants highlighted a number of strategies that can be employed to improve human-wildlife relationships. One participant had this to say:

> *To mitigate these challenges, there has to be adequate community education, especially regarding and protecting natural habitats in order not to upset wildlife food sources. These strategies include controlling human settlement expansion, minimising tree cutting and repurposing unused communal lands like fallow fields.*

Another participant noted that:

> *Climate resilience strategies need to be taught to the community, including sustainable agriculture such as water harvesting, controlling livestock population, and sustainable grazing to mitigate the effects of frequent droughts. In addition, communities need to improve their livestock safety, including warning systems such as keeping dogs to minimise losses of crops and livestock.*

The researchers learnt that the Berejena community was eager to minimize Human - Wildlife conflicts. The participants' responses confirmed Khattack et al, (2021) and Tiwari et al, (2025)'s observation that keeping small herds of cattle can minimise human-wildlife conflicts. In addition, Muhanga (2025) gives some insight into how professionals can work together in coming up with sustainable solutions to reduce human- wildlife conflicts. The idea that communities need warning systems to deter wildlife is in concurrence with Grang et al and Mekonen (2020), who noted that chilli fences are effective strategies to curb human-wildlife conflicts. The findings show that human -Wildlife conflicts can be minimised through educating the community on wildlife conservation as well as reducing the number of livestock that they keep. The findings also point to the use of early warning systems such as dogs. The study also shows that there is a need to control human settlement expansion, as it is also a driver of human-wildlife conflicts.

5. Conclusion and Recommendations

5.1 Conclusion

The study concluded that climate change had highlighted human-wildlife conflicts due to continuous droughts, which cause a shortage of food and water for both humans and wildlife. The study also concludes that human-wildlife conflict has become a real issue in Zimbabwe, not only limited to areas surrounding national parks and wildlife corridors but also affecting rural areas like Chivi. Based on the findings of this study, one can also conclude that climate change has negative effects on both humans and wildlife. However, the challenges which are caused by climate change can be addressed if the mitigation measures noted in the study are taken on board.

5.2 Recommendations

The study recommends the following:

1. The adoption of a holistic approach that includes collaborative conservation initiatives, sustainable land-use planning, wildlife management and research, education, and economic incentives to mitigate the conflict.
2. Policymakers should create policies that address human-wildlife conflict.
3. The responsible government wing should implement habitat restoration projects to rehabilitate the degraded ecosystems.
4. The communities should also be educated on harmonious ways of coexisting with animals since they share the same geographical space.
5. The tourist industry should educate communities on safe ways of deterring wildlife while establishing wildlife corridors to create safe passage of animals to appropriate pastures.
6. All the involved parties should heed the call by Yeshey, Ford and Nitschke (2023), who advocated for poverty eradication, sustainable management promotion, use of natural resources and protection of the Earth's natural ecosystems as Sustainable Development Goals and 2030 Agenda for Sustainable Development.

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