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IMPLICATION OF CONSOLATION SCHEME IN REDUCING HUMAN-WILDLIFE CONFLICT NEAR THE RUNGWA-MUHESI-KIZIGO GAME RESERVE IN SINGIDA, TANZANIA

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ABSTRACT

Human-wildlife conflicts adjacent to the protected and conservation areas continue to affect the livelihoods of local communities worldwide. This study assesses the effectiveness of Tanzania's consolation scheme in reducing human-wildlife conflict in the Rungwa-Muhesi-Kizigo Game Reserve. Learning from the local communities through interviews, surveys, and observations, the findings show the government consolation scheme to be ineffective at supporting the community members who are affected by wildlife, contrary to the scheme's goal. It is revealed that there is low awareness of the consolation scheme among the household members in the study area. Findings show a number of drawbacks that make local communities fail to access benefits from the wildlife consolation scheme, including the long procedure required to fulfill it, the delay of consolation benefits, the insufficient commitment of village leaders in reporting human-wildlife incidents on time, and a lack of community knowledge on the procedures to access the consolation scheme benefits. We conclude that the Tanzania consolation scheme is meager and less effective in reducing human-wildlife conflict in Rungwa-Muhesi-Kizigo Game Reserve. Thus, we recommend that the Ministry of Natural Resources and Tourism in Tanzania review the consolation scheme procedures and guidelines, employ enough game officers, work with different conservation stakeholders at local and national levels to engage in timely reporting of the incidents, evaluation of the damages or losses caused by wild animals, and improve the scheme budget for the scheme to perform effectively.

Keywords: Protected areas, consolation scheme, Human-wildlife conflicts, game reserves

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INTRODUCTION

Human-wildlife conflict is a dominant phenomenon for the communities residing adjacent to Protected Areas (PAs) (Frank, 2016). Human beings play a great role in increasing human-wildlife conflict in search of lands for settlement, agriculture, and domestic animal pastures. These human needs are noted to have a negative impact on wildlife ecology (Dickman and Hazzah, 2016). However, wild animals have been a major threat to human life, crops, livestock, and human habitats (Distefano, 2005).

Among the wild animals that are destructive and cause conflict with humans are elephants (*Loxodonta africana*), hippopotamuses (*Hippopotamus amphibius*), buffalo (*Bubalus bubalis*), cheetahs (*Acinonyx jubatus*), leopards (*Panthera pardus*), lions (*Panthera leo*), spotted hyenas (*Crocuta crocuta*), crocodiles (*Crocodylus sp.*), as well as the wild dog (*Lycaon pictus*) (Acharya, et al. 2016).

In the southern and eastern parts of Africa, community losses from wild animals are

encountered through predation and crop destruction. This situation is among the obstacles to the enhancement of farmers' quality of life (Pantoren, 2016). In Kenya, efforts were made by the government to establish monetary consolation for the victims who incurred losses and injuries. However, it failed due to false claims of wildlife attacks by community members and a budget deficit (Ontiri, *et al.* 2019). Other African countries have used various strategies to deal with human-wildlife conflict, such as guarding, scaring with light fires and noises, growing plants that are toxic to wild animals, and farming away from PA borders. Eustace *et al.* (2018) highlight that the use of land use plans, patrols, fencing, Problem Animal Control (PAC), monetary compensation, and participatory management are among the measures employed to mitigate human-wildlife conflict in Tanzania and Mozambique.

Due to the persistent challenges of human-wildlife conflict in Tanzania, the government has undertaken measures to minimise the cost experienced by communities neighbouring PAs. This includes the passage of the Tanzania Wildlife Conservation Act of 2009 (Benjaminsen, *et al.* 2013), which directed the development of the Wildlife Conservation (Dangerous Animals Damage Consolation) Regulations 2011, to provide monetary compensation to affected families (Eustace, *et al.* 2018). The established consolation scheme intends to increase levels of tolerance for the affected communities by not killing the

responsible wild animal (Mbise, *et al.* 2018). People living adjacent to the PAs in Tanzania have been the wildlife victims of human and livestock killings, crop damage, and residence destruction (Albert, 2010). Rungwa-Muhesi-Kizigo Game Reserve is among the PAs in Tanzania that interact with adjacent communities (Kwaslema, *et al.* 2017). Wild animals, particularly elephants, break down food storage facilities, cause injuries to people, and destroy water channels.

Since the existence of the Tanzania Wildlife Conservation (Dangerous Animals Damage Consolation) Regulation 2011, an assessment of its operationalisation toward reducing human-wildlife conflict has not been conducted, causing insufficient knowledge about its effectiveness. Using villages around the Rungwa-Muhesi-Kizigo Game Reserve, this study was committed to resolving the knowledge gap. The study assessed people's awareness of the existing consolation scheme, examined the extent of wild animal victims' access to the consolation scheme's benefits, identified the challenges facing wildlife victims in the process of accessing the consolation, and investigated the contribution of the consolation scheme in reducing human-wildlife conflict.

MATERIALS AND METHODS

This study was conducted in Singida, Tanzania. Two villages surrounding the Rungwa-Muhesi-Kizigo Game Reserve, namely Simbanguru and Mangoli, were involved (Figure 1).

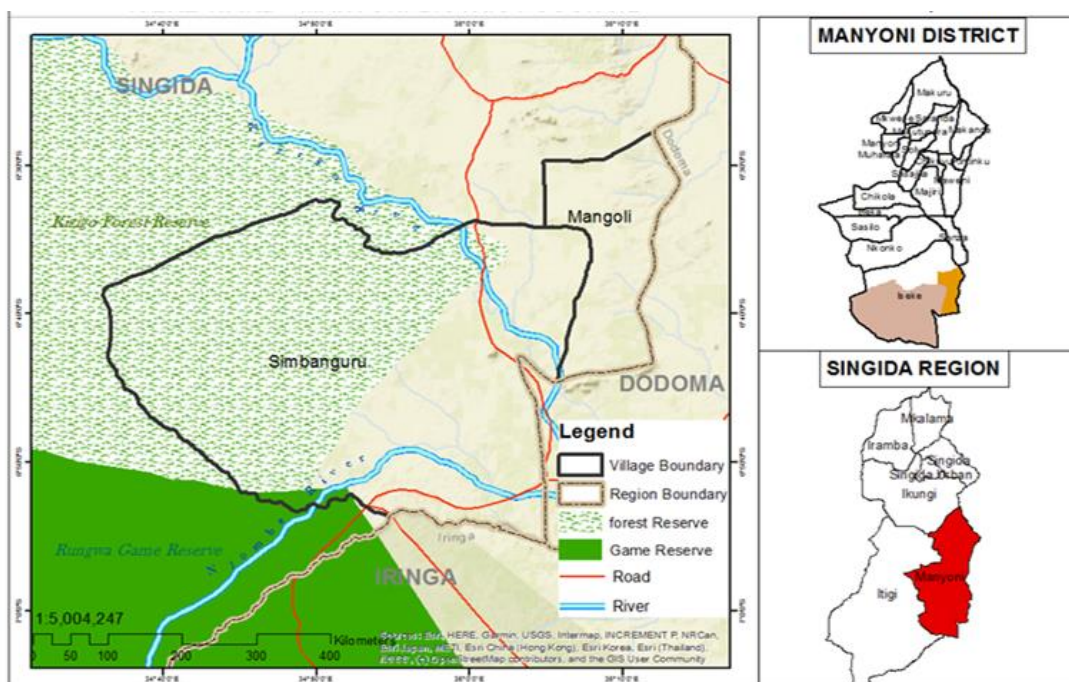


Figure 1: A map showing Simbanguru and Mangoli villages as the study areas in Singida, Tanzania

These villages were chosen purposively because they are located adjacent to the Rungwa-Muhesi-Kizigo Game Reserve and have some reported incidences of human-wildlife conflicts (Harohay, *et al.* 2018). The total number of households in Simbanguru and Mangoli villages is 1208 (Simbanguru and Mangoli have 673 and 535 households respectively). This is according to the village household lists. The study employed a case study design with a mixed-method research approach. Non-purposive (simple random sampling) and purposive (key informants) sampling were adopted to obtain individuals to be involved in the study. Simple random sampling was used to select the household heads for the questionnaires, which were administered by the researchers to get data from the household heads. A total of 92 households to be involved in the study were estimated from the target population using a Yamane (1973) formula. The key informants included district, village, and ward officials, who provided in-depth views on the operationalisation and challenges of the existing Tanzania wildlife consolation scheme. The observation was also done using the checklists, where researchers were able to observe, take records, and make photographs where it was deemed necessary. The

data were edited to improve their quality for coding. Quantitative data from the questionnaires was analysed through descriptive statistics using SPSS and MS Excel. Qualitative data from the key informant interviews and observations were analysed through thematic analysis.

RESULTS

Socio-Economic Profile of the Respondents

Findings show that 52(56.5%) of the respondents were aged between 35-60 years old, followed by those aged between 25-35 years old with 19 (20.7%). Other respondents were aged 61 years and above, 14 (15.2%), and 18-24 Years 7(7.6%). This shows that majority of respondents were adults who hold important information on access to the consolation scheme. As for the sex, the majority 70(76%) of the respondents were male and 22(24%) were females. Findings further show that most of the respondents 49(53.3%) had a standard seven level of education, followed by those who were uneducated 40(43.5%), form four 1(1.09%), form six 1(1.09%), and Bachelor degree 1(1.09%). This indicates that the household heads had a low level of education, which may have made them less aware of the procedures for claiming from the consolation scheme once affected by problem animals. It was

further revealed that 47(51%) of respondents were engaged in mixed farming (raising crops and keeping livestock), and 45(49%) were engaged in crop farming only. This is an indication that the majority of the household heads were agro-pastoralists, a condition that makes the community vulnerable to problem animals.

People's Awareness of the Consolation Scheme

Findings reveal that 50(54.3%) of respondents were not aware of the consolation scheme, whereas 34(37%) were very aware and 8(8.7%) had little awareness. This shows that many household heads lack awareness of the consolation scheme and its operationalisation. However, findings from face-to-face interviews with the Ward Executive Officer (WEO) showed that awareness campaigns had been carried out by

the village leaders. These contradictory results show that the strategies used to educate people on the existing consolation scheme are not effective.

The study also sought to understand the communities' awareness of traditional knowledge for safeguarding themselves from dangerous wild animals. About 70(76%) of the respondents used traditional methods to deal with wildlife attacks, while the respondents did nothing since they had no knowledge of what to do were 20(21.7%) and the undecided were 2(2.3%). Among the traditional methods used by the community to chase elephants, for example when they are about to invade habitats or crop farms, are catapults, fire, and acoustic scarers. Other respondents reported using poisonous traditional herbs commonly known as 'Malongwe' in the stored harvested food (Plate 1).



Plate 1: The traditional herb (Malongwe) is used to keep elephants from attacking harvested crops in Simbangu and Mangoli villages, Tanzania. Photo by: Liendekiye

Awareness of Application Procedures for Consolation Scheme Benefits

The findings show that there is a procedure to follow when one is attacked by wildlife. Most

Table 1: Procedures followed by wildlife victims to access benefits from the scheme

Procedures (n=92)	Multiple responses (%)
Inform Local Authorities (Village officials)	100

respondents reported having informed the local authorities after the incidence of the attack, and the rest of the steps were being carried out by village and district leaders (Table 1).

Assessment of loss incurred	8
Evidenced collected and sent to District authorities	8
Fill out the form for consolation	8
Receive consolation	8

These findings show that the majority of the victims inform the local authorities, but other imminent processes are carried out by the higher authorities, including conducting damage loss assessment within 7 days by the District Natural Resource Officer (DNRO) and Agricultural Officer (AO). The interview conducted with one of the village executive officers revealed that, even though most of the wildlife victims informed the hamlet and village local authorities on time, no evaluations were being made to assess the damage or loss incurred according to the specified time in the regulations, something that disappoints the victims.

An interview with one of the District officials stated that once a person is victimised by a dangerous wild animal, they must follow the following procedures; he or she has to inform the local authorities, from the level of the neighbourhood or hamlet chairman to the village executive officer (VEO). The victim has to fill out the form from the DNRO; in cases of human death, the police have to be involved and collect evidence; in cases of injuries, the victim has to go to the government hospital; in cases of crop damage, the victim has to inform the VEO, then the VEO has to inform the DNRO and AO. The DNRO and AO will undertake wildlife damage evaluations within 7 days. The evidence will be collected, and forms filled out and submitted to the Tanzania Wildlife Authority (TAWA) which is under the Ministry of Natural Resources and Tourism, for approval of consolation benefits to the victims.

Status of Wildlife Victims' Access to the Consolation Scheme Benefits

The findings show that only 12(4%) of the households that had been attacked by wild animals received consolation, while the remaining majority 88(96%) did not receive it despite their efforts to provide information on time about the incidence to the village authorities. The interview with some of the village officials for both Simbangu and Mangoli on the trend of the wildlife victims' consolation acquisition also revealed that few people had received the consolation despite the fact that many have been affected by the wild animals without compensation.

Limiting Factors for Wildlife Victims' Access to the Consolation Scheme Benefits

Findings show that many (60%) of the respondents failed to understand why they were not gaining benefits from the scheme, while 27.3% reported their farms' locations are within 500m of the game reserve buffer zone, which are not entitled to the consolation benefits; 23% reported attacks of wildlife on human habitat, and 13% reported lack of awareness of the consolation scheme prevented their access to the consolation scheme. An interview with one of the District officers and VEO confirmed that the consolation is not given for the habitat destruction or for the farms located within the buffer zones (500m) of the game reserve borders. The District Officer stated that;

"Where farms are within the buffer zone (500m) from the game reserve border no consolation is given, when wild animals attack the residence and make destruction, then such incidence is not eligible for consolation" (Interview with one of the District officials)

On the other hand, the VEO had this to report; *"The guidelines governing the consolation scheme limit wildlife victims' access to consolation. The consolation scheme does not console a victim attacked by wildlife in his house but only when the destruction occurs in the farm" (Interview with one of the Ward Officials)*

The challenges of the existing consolation scheme were also identified. The majority (100%) of the responses showed that the delay in procedures of the consolation scheme has been the major challenge encountered by the wildlife victims in the process of gaining consolation, whereas 96% of the responses indicated that the consolation was not being paid on time (Table 2). Other challenges that were mentioned are poor village leadership, lack of knowledge of the consolation scheme, and poor communication between village and district authorities. This proves that community members were being denied their right to consolation due to the existing consolation challenges.

An interview with one of the District officials reported that the delay of financial returns from the central government impeded the timely

implementation of the consolation scheme. Other challenges were cited as the low amount of money provided for consolation and the delay of

officers visiting the area for wild animal damage evaluation due to a lack of transport facilities such as motor cycles and vehicles.

Table 2: Challenges encountered by the wildlife victims during the consolation process

Challenges (N=92)	Multiple responses (%)
Delay of procedures	100
Lack of knowledge of the consolation scheme	5
Poor communication between village and district authorities	3
Consolation not being paid on time	96
Poor leadership at the village level	37

The District official had this to say;
“Among the disadvantages of implementing the consolation scheme are the delays in receiving returns from the government, which should be paid to the dangerous animal victims; the delays in officers visiting the area where the damage or loss has occurred for evaluation; the lack of funds within the district authority; the shortage of human resources; and the lack of working tools such as vehicles that would enable the game scout to frequently visit dangerous animal-affected areas” (Interview with one of the District officials)

The Contribution of Consolation Scheme in Reducing-Human Wildlife Conflicts

The findings indicate that most of the respondents 82(89%) perceived that the consolation scheme did not help to reduce human-wildlife conflict, while only 10(11%) of the respondents reported that the consolation scheme reduced human-wildlife conflict. An interview with one of the District officials also confirmed that the consolation scheme has not contributed to reducing human-wildlife conflict as indicated in the following statement;

“Honestly, the consolation scheme has not reduced the human-wildlife conflict; rather, it has assisted the victims to tolerate the loss because they believe they have been given the consolation” (Interview with one of the District officials).

Similarly, one of the village officials for Mangoli had this to say;

“The human-wildlife conflict in our village cannot be reduced by being paid consolation

because the victims will be paid consolation and still elephants will continue attacking and causing injuries, losses, and damages to people, there is a need of looking for a way to completely solve the problem” (Interview with one of the Mangoli Village officials)

DISCUSSION

Socio-Economic Profile of the Respondents

The fact that most of the respondents were aged between 35-60 years old is an indication that the information for the study was obtained from the adult populations who were engaging in agriculture production and able to understand and respond to the research questions properly. Shokirov *et al.* (2021) note that the age of a person is an important factor that explains the level of production and efficiency in the community. Many respondents were represented by males compared to females. These findings support that of Johnson *et al.* (2018) who noted that the most affected gender in human-wildlife conflict is male, as they are the ones commonly engaged in cultivation, grazing livestock, and security. Similarly, in rural settings, men are the ones who tend to respond first and engage in chasing problem animals as a means to prevent destruction and predation on their livestock.

Most of the respondents had a low level of education which makes them unaware of the legal frameworks guiding human-wildlife interaction, and the failure of the community to think of other livelihood options that might be less vulnerable to problem animals such as bee-keeping projects, engage in small enterprises business and rearing of indigenous chicken. Xu *et al.* (2020) state that

lack of awareness makes people ignorant of many community aspects. The fact that most of the respondents were agro-pastoralists is evidence of conditions that may attract wild grazers for the green crops and predators for the domestic animals. This is similar to that of Lavery *et al.* (2019) who reveal that economic activities along the PAs fascinate human-wildlife conflict.

People's Awareness of the Consolation Scheme and Application Procedures

It was found that most of the household heads were unaware of the existing Tanzania consolation scheme. The finding correlates with that of Hariohayet *al.* (2018) who conclude that the community of Rungwa Game Reserve in Tanzania, especially those neighbouring conservation areas, has a low understanding of wildlife conservation and consolation schemes. Thus, the community in the study area is unaware of the operationalisation of their national consolation schemes despite the education provided in the community. This can be evidence that the local community needs progressive education that will keep reminding the community to understand things that bind their lives based on their context. The findings on community awareness to safeguard themselves from attacks by dangerous animals entail the use of traditional herbs. This demonstrates the community's ability to cope with the stress caused by problem wild animals. The findings support that of Pantoren (2016) who reveals that communities living adjacent to Amboseli National Park, Kenya, have been using traditional methods to keep away the wild animals by beating tins and drums, lighting fire, and guard shooting elephants. The use of traditional herbs in the study area can be a solution to minimising human-wildlife conflict; however, to what extent they are safe for human health remains a question, especially those that are mixed with food crops.

The findings on the procedures for accessing the consolation from the scheme reveal that the wildlife victims provide information, but no damage evaluation is being done by the responsible authorities within the specified 7 days as prescribed by the Wildlife Conservation (Dangerous Animals Damage Consolation) Regulation of 2011. That has contributed to many

of the victims failing to receive their consolation rights. Much of the time delay has been attributed to a lack of Agricultural officers (AOs) at the village and ward levels, and insufficient financial and transport resources to enable officials to reach the area of the scene on time. Moreover, the complex procedures for obtaining government funds to enable responsible officials to visit and make assessments of the loss associated with wildlife attacks add more delay.

This has discouraged victims from providing information to the responsible authorities, as they perceive no action will be taken for them to gain benefits from the scheme. Mashalla and Ringo (2015) noted similar findings that 42.8% of victims in Kipengere Game Reserve, Tanzania, had not received consolation, nor had they received an explanation of the delay. Lack of commitment by responsible people to evaluate the loss and process consolation benefits for the victims of problem animals discourages community members from engaging in conservation and builds community hatred for wildlife. As a result, communities kill such problem animal species as a way of revenge. Similarly, Pantoren (2016) observed that most of the wildlife victims in Kenya have not been provided with consolation due to procedural complications and opted to kill the problem animal species. This means the conservation efforts should take the interest of the affected community on board to minimise human-wildlife conflicts.

Challenges Related to Wildlife Victims' Access to the Consolation Scheme Benefits

The findings on the factors limiting wildlife victims' access to the consolation scheme reveal that the consolation scheme itself acts as a primary hindrance. During the study, it was found that the most attacks that take place after crops are harvested and stored in people's settlements are those where dangerous animals like elephants destroy houses to eat the hidden crops. Unfortunately, such a loss is not recognised by the scheme as eligible for consolation. This finding resembles that of Oforo (2017), who revealed that people were denied the right to consolation on the ground that attacks on human habitats are not eligible for consolation. This

proves that the consolation scheme is likely to fail to reduce human-wildlife conflict. This finding is also in line with that of Pantoren (2016), who reported that the Kenyan wildlife victims' consolation scheme was not effective in reducing human-wildlife conflict due to the delayed response from the responsible authorities.

The findings on the challenges of the Tanzania consolation scheme in the study areas showed that delayed procedures for the consolation are a major challenge. However, this was caused by a lack of agricultural and livestock officers at the village levels who could assist in carrying out loss assessments associated with wildlife within the 7 days after the occurrence of the attack. This situation may even lead to the denial of the entire right to consolation. Similarly, Omiti and Sirengo (2015) state that a lack of verification officers is a challenge in making on-time verification of incidences that occur in village areas with impassable roads.

CONCLUSIONS AND RECOMMENDATIONS

The study findings conclude that the Tanzania consolation scheme is not effective in reducing

human-wildlife conflict in the research area. The local communities continue to suffer from problem animals without gaining consolation scheme benefits. Lack of awareness of the existing lengthy procedure at various levels impedes wildlife victims' access to the consolation scheme on time. It is suggested that the Ministry of Natural Resources and Tourism review consolation scheme procedures and guidelines in order to reduce the number of steps required to apply for consolation scheme benefits. Increased community awareness of the consolation scheme and application procedures will help many wildlife victims be consoled; hire enough officers (agriculture, livestock, natural resources, and game officers) to facilitate the early evaluation of wildlife's losses; and improve budgets for the officers' field visits.

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