Local farmers' Perceptions of Human-Wildlife Conflicts in the King Nehale Conservancy, Namibia

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Abstract

Over the past three decades, wildlife management programmes on communal lands in Southern Africa experienced a major institutional transformation from direct state control to the community-based management approach. While this community-based conservation approach is credited for population recovery of some wildlife species and creating opportunities for local communities to derive benefits from wildlife conservation efforts, costs associated with human-wildlife conflicts negatively affect local farmers' livelihoods, particularly those neighbouring protected areas. This study investigated local farmers' perceptions of human-wildlife conflicts in the King Nehale Conservancy, a communal conservancy located north of Etosha National Park. The study employed a quantitative design through a structured questionnaire where a total of 115 randomly selected respondents were interviewed. The results based on the analysis of the chi-square test of association showed that wildlife threatens community livelihoods mainly through livestock depredation and crop-raiding, contributing to negative attitudes towards wildlife. These perceptions were significantly ($p < 0.05$) associated with the respondents' age groups and the number of years they have been living in the study area. Participants in the economically active age group and those that have been living in the conservancy for longer period, were more likely to agree with the perception that human-wildlife conflict is a serious issue in the conservancy compared to participants who said they have been living there for shorter period. These findings suggest that most local farmers perceive the presence of wildlife as being detrimental to their sources of livelihood. Consequently, these increasingly negative perceptions towards wildlife erode community-based conservation efforts.

Keywords: *Conservation, Etosha, livelihood, livestock depredation, crop raiding.*

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Introduction

Over the last three decades, rural communities in Southern Africa have witnessed a paradigm shift in natural resource management from a state-centred and protectionist fortress conservation model to a community conservation model, a people-centred approach that involves the local community in biodiversity conservation and its sustainable utilisation (Dressler et al., 2010; Hutton, et al., 2005; Magome & Fabricius, 2013). The community conservation model is largely influenced by Ostrom's principles of managing the commons (Araral, 2014; Baggio et al., 2016; Fennell, 2011; Forsyth & Johnson, 2014), which emphasise the need to involve local communities more in managing their local natural resources and give them greater access to the benefits derived from those natural resources (Nelson, 2010; Taylor 2012). This goal was to be achieved through local communities' participation, devolution and decentralisation of authority over such natural resources (Anstey & Rihoy, 2009; Mulale & Mbaiwa, 2011; Rihoy & Maguranyanga, 2007), thereby effectively challenging the notion of the 'tragedy of the common'.

This transition gave rise to community-based natural resource management (CBNRM) programmes (Jones & Weaver, 2012; Jones, 2004; Josserand, 2001; Mosimane & Silva, 2015; Nuulimba & Taylor 2015). The CBNRM programmes are designed as initiatives for the collective management of wildlife resources through a common property resources management institution known as a conservancy, with two major goals: conservation of biodiversity, and socioeconomic empowerment of rural communities (Van Wijk et al., 2014).

Namibia's CBNRM programme, which is considered one of the most successful community conservation initiatives in Southern Africa (Nuulimba & Taylor, 2015), started soon after the promulgation of the Nature Conservation Amendment Act No. 5 of 1996. This act provides the legislative framework for the formation of communal conservancies in the country. These conservancies are areas of customary land tenure, where local communities are granted the rights to manage and benefit from natural resources such as wildlife and plant products (Naidoo et al., 2011). Since then, Namibia has witnessed an increase in communal conservancies from the first four conservancies in 1998 to a total of 86 conservancies in 2020, covering approximately 20% of the country's vast landscape (World Wildlife Fund, 2022). The envisaged benefits from communal conservancies include biodiversity conservation, tourism, trophy hunting, and employment creation as well as community development projects. For the local communities to support these ideas of community wildlife conservation, the implicit assumption was that the benefits from the conservancies should outweigh the costs that local communities would endure, owing to the presence of wildlife in their communities (Scanlon & Kull, 2009; Sebele, 2010). Today, Namibia's CBNRM programme is credited for having achieved notable milestones such as the recovery of wildlife populations, revenue generation from hunting concessions and tourism joint ventures, game meat harvesting, and job creation for poor rural populations (Naidoo et al., 2016; MET/NACSO, 2018).

All the communal conservancies (86 in total) in Namibia are found in rural areas where the major sources of livelihood are pastoralism and crop production. From a communal farmer's perspective, the community conservation paradigm either means those communal farmers must adapt to a new lifestyle such as nature-based tourism in light of opportunities created by the recovery of wildlife populations in their communal areas, or, alternatively, be prepared to bear the consequences associated with the presence of wildlife, particularly human-wildlife conflicts such as livestock depredation, crop-raiding and loss of human lives. The occurrence of human-wildlife conflicts can have a significant influence on the local farmers' perceptions in terms of how they view the roles of community-based conservation initiatives as sources of sustainable livelihood. As a result, risk perceptions are important to understand because perceptions can affect human behaviours in response to human-wildlife conflicts, such as tolerance or retaliation (Kahler & Gore, 2015). If the human-wildlife conflict is not handled correctly, it can negatively affect the long-term chances of human-wildlife coexistence (Carter et al., 2012).

In light of the above, this paper aims to provide answers to the following questions: (i) How do communal farmers perceive the extent of human-wildlife conflict in the King Nehale Conservancy? (ii) How do such communal farmers perceive human-wildlife in relation to their livelihood? (iii) Do these communal farmers believe that the benefits generated from the conservancy outweigh the loss incurred due to the presence of wildlife?

Literature Review

Conflicts between humans and wildlife in the various African wild forests and heartlands have been documented extensively. This includes conflicts between humans and carnivores (Ogada et al., 2003; Stander, 1991) and/or elephants (Ogada & Ogada, 2004) in the Samburu National Park, as well as between humans and elephants in Kilimanjaro (Kangwana, 1993). In particular, crop damage by wildlife is perceived as a major problem facing farmers, and its occurrence threatens to undermine conservation and development efforts in the northern districts of Zimbabwe (Muruthi, 2005). Within the Zimbabwe portion of the Zambezi Heartland, elephants are estimated to be responsible for up to three-quarters of all crop damage caused by wildlife (Muruthi, 2005; Ogada & Ogada, 2004). Human-wildlife conflicts can have adverse impacts on wildlife and humans alike. In the Kilimanjaro Heartland, Muruthi et al. (2000) found that in 1996 and 1997, at least 15 elephants, representing three-quarters of that period's local population's mortality, were killed in conflict situations with local people. Between 1974 and 1990, a total of 141 out of 437 deaths in the Amboseli ecosystem were caused by people (Kangwana, 1993). The main problems in the Kilimanjaro Heartland are crop damage, competition for water and grazing, the killing of livestock and risk of disease transmission, and human fatalities.

Most of the wildlife in southern Africa lives outside protected areas. This is

particularly true for the African Elephants (*Loxodonta africana*), where more than 80% of these elephants are found outside protected areas (Hoare, 2000). This raises a fundamental question: is it reasonable to expect people, many of them amongst the poorest on the planet, to co-exist with wild animals such as large predators, elephants and herds of antelope, to absorb the ensuing economic losses and tolerate the inconveniences and threats to lives and livelihoods? Many conservationists would argue that co-existence is possible, even desirable, and if properly managed, the presence of wildlife represents an opportunity for the locals, a possible escape route from poverty (Muruthi, 2005).

Appropriate wildlife management should include policies and measures to reduce threats posed by wildlife and enable local people to reap benefits such as revenues from wildlife-based tourism enterprises. Without such policies and measures in place, local people will often take action to defend their interests and even their lives, including killing wild animals in retaliation (Inskip et al., 2014; Kissui, 2008). Some of these species are endangered whilst others are keystone species, and so the repercussions of such local direct actions can be felt nationally and internationally. A keystone species is an organism that plays an important role in shaping the landscape of a particular ecosystem, such as elephants in the savannah ecosystem. The conflict between people and wildlife today undoubtedly ranks among the main threats to conservation in the world, alongside habitat destruction (Muruthi, 2005).

Human-wildlife conflict is considered one the main challenges facing the CBNRM programme (Nuulimba & Taylor, 2015). It occurs throughout Namibia on both communal land and commercial farms. In 2009, the Ministry of Environment and Tourism (MET) implemented the National Human-Wildlife Conflict Management Policy. In 2018, a revised and updated policy was published and shared with various stakeholders (MET, 2018). The policy sets out several objectives and strategies to address the impact of human-wildlife conflict, including: (i) land use planning and integrated measures to avoid human-wildlife conflict incidents from happening, (ii) technical solutions for mitigating human-wildlife conflict, (iii) the removal of problem-causing animals, (iv) addressing the losses of affected persons, and (v) human-wildlife conflict management schemes (MET, 2018). The human-wildlife conflict strategies are categorised in terms of prevention (avoidance of such conflicts and addressing their root causes), protection strategies when conflict has occurred, and mitigation strategies.

Incidents of human-wildlife conflict involve the destruction of crops and water installations, loss of livestock, and in some cases, loss of human lives. Communal areas that suffer the most from human-wildlife conflicts largely fall within the rural areas, where approximately 40% of the inhabitants live below the poverty line, although those bordering National Parks experience the greatest loss. This, in turn, creates political conflicts between local people and government institutions.

The root cause of human-wildlife conflicts is competition for space and resources between humans and wildlife (Nyhus, 2016). The ever-growing human population

and expansion into wildlife habitats can be considered the main factor exacerbating the occurrence of human-wildlife conflicts. However, widespread drought in Northern Namibia can further aggravate the human-wildlife conflict issue. The latest statistics indicate that by 2017, a total of 8067 cases of human-wildlife conflict were already reported across the 86 conservancies (NACSO & MEFT, 2019). The increase in the number of such incidents could be attributed to the growth in wildlife populations and the shifting patterns of animal movement in response to drought (Jirmo et al., 2014; Stoldt et al., 2020). In Northern Namibia, livestock attacks have increased since 2017. In 2018, the Ministry of Environment and Tourism, through the Directorate of Wildlife and National Parks, reported an average of 106 human-wildlife conflict incidences per conservancy; of these, 91% were livestock attacks (MET/NACSO, 2018), which is an increase of 16% (from 75% to 91%) per conservancy since 2016. The reports further stipulated that in 2016, 13% were incidences of crop damage per conservancy, while 0.2% was attributed to human attacks per conservancy.

Other conflicts related to wildlife and humans are damage to property, including water points, fences, gates, kraals and houses. The removal of the problem-causing animals is permitted in exceptional cases where life and property are consistently threatened, or when the numbers of wild animals are very high. This is done only with the authorisation of the Ministry of Environment and Tourism under strict requirements. The conservancies and MEFT work closely to ensure compliance with regulations. The Namibian government does not offer direct compensation to individual farmers or communities given the complexity of compensation schemes and the possibility of abuse by individuals. The Government grants fixed payments to conservancies through the Human-Wildlife Conflict Self Reliance Scheme to compensate farmers for their losses. Only people on communal land are entitled to the self-reliance scheme initiative whereas people on private land are not.

From a different perspective, it is known that species' positive ecological interactions with local communities may increase tolerance of conflict among local people. For example, Namibian commercial farmers were found to be more favourable to carnivores and less likely to desire removal once they have obtained a greater understanding of the ecological roles that carnivores play in ecosystem milestones (Schumann et al., 2012). Before the 2009 enactment of the Human-Wildlife Conflict Self Reliance Scheme, which stipulates payment for elephant and hippopotamus crop damage, the distribution of benefits versus the risks of hippopotamus conflict would have been unlikely to encourage coexistence. For instance, Muyengwa (2015) argues that game meat distributed to households was likely to contribute to positive community-level satisfaction towards conservancies compared to individualised benefits such as jobs. Although cash dividends to members are a common form of benefit in most income-earning conservancies, it is arguably still marginal and has been fluctuating over the years and between conservancies.

Human-wildlife conflict is a multi-faceted problem. According to the United Nations Environment Programme (UNEP) (2018), it is increasingly evolving as central modern

dialogues for cases require a balance between human and wildlife resource demands. Blackie and Sowa (2019) confirm that human-wildlife conflict has become a major long-term threat to wildlife conservation and the well-being of the local people living in and around conservancies. Therefore, it is crucial to understand people's perception of human-wildlife conflict to improve risk communication, design effective human-wildlife conflict mitigation policies, and evaluate interventions (Gore et al., 2008). To address the effects of human-wildlife conflict, several different strategies are required and this can be generated through research in the affected areas.

Methods

Study Area

The King Nehale Conservancy is located in the Oshikoto region, bordering the Etosha National Park in Northern Namibia (Figure 1). The King Nehale Conservancy was gazetted in 2005. It covers an area of 508 km² (NACSO, 2012). The human population of the King Nehale Conservancy is estimated to be approximately 20,000 inhabitants from the Aawambo speakers. The main source of livelihood for the inhabitants is mixed farming i.e., growing crops and keeping livestock. Most of the local farmers in the area keep cattle, donkeys, goats and sheep. Cattle are culturally considered a form of wealth compared to other livestock in the area. In addition to farming, inhabitants of the area also receive an income from owning small businesses (NACSO, 2012).

The King Nehale Conservancy is characterised by flat topography with woodlands on sandy soils (Mendelsohn et al., 2002). The area is a habitat for different wildlife species such as the springbok (Antidorcas marsupialis), blue wildebeest (Connochaetes taurinus), elephant (Loxodonta), giraffe (Giraffa camelopardalis), kudu (Tragelaphus strepsiceros) and gemsbok (Oryx gazella). Spotted hyenas (Crocuta crocuta), lions (Panthera leo), side-striped jackals (Canis adustus) and black-backed jackals (Canis mesomelas) are some of the predator species also found in the area (NACSO, 2012). The King Nehale Conservancy's location, in close proximity to Etosha National Park, allows wildlife movement between the Etosha National Park and the conservancy (NACSO, 2012). Although the King Nehale Conservancy is located near the Etosha National Park, which is considered one of the famous tourist attractions in Namibia, only a few tourism facilities existed in the conservancy at the time of data collection fieldwork. In June 2020 however, the Gondwana King Nehale lodge was opened in the area.

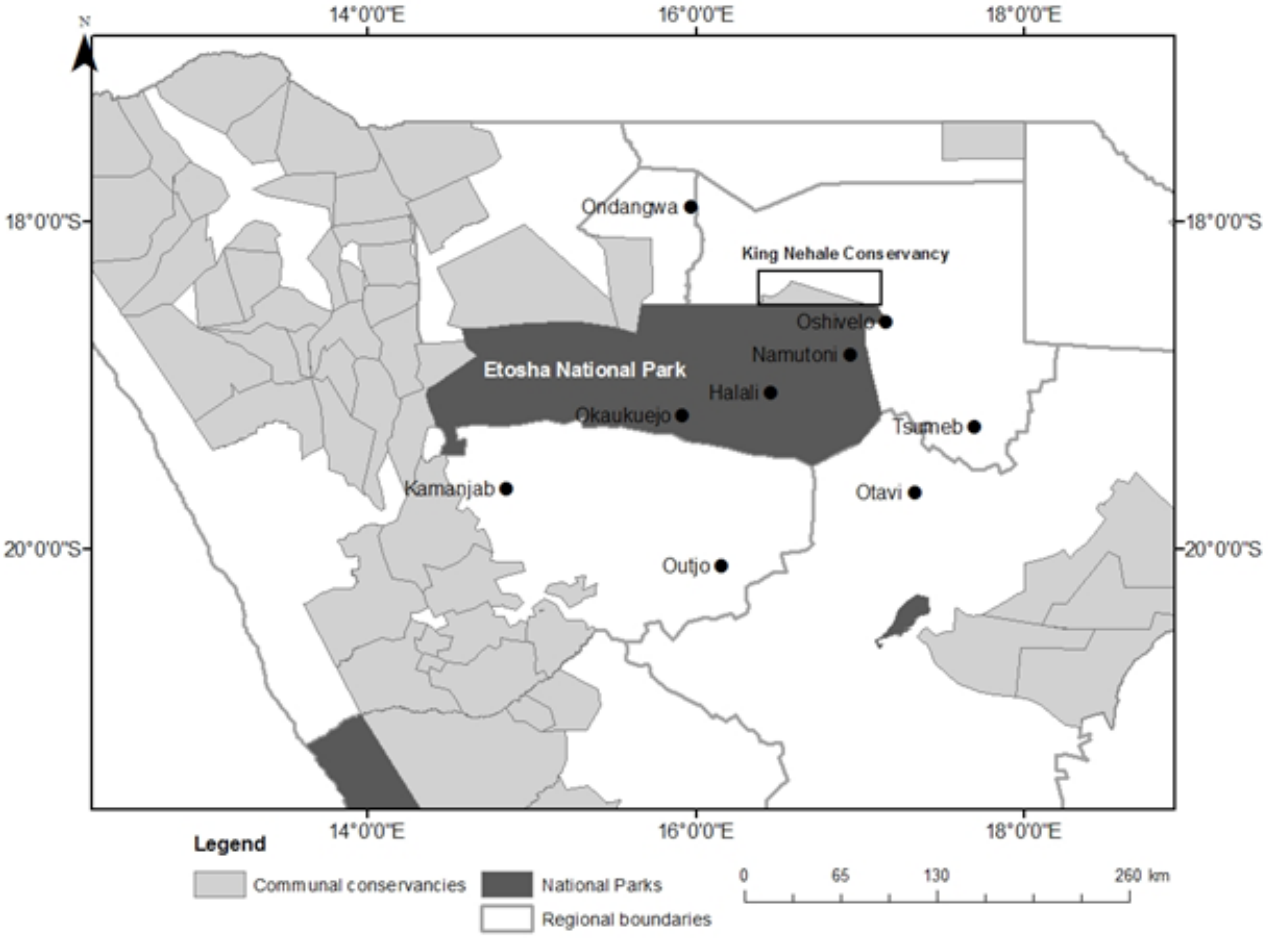

Figure 1. *The location of King Nehale Conservancy is along the northern borders of Etosha National Park*

Data Collection

Data were collected using a structured questionnaire designed to solicit participants' perceptions of the occurrence of human-wildlife conflicts in the King Nehale Conservancy. All questions were designed as closed-ended questions with a list of options for the participants to select from. Questions on a Likert scale were also provided to enable participants to gauge their perceptions. The survey was conducted in the houses of target participants. All participants were interviewed voluntarily and face-to-face; consent was sought before the interview began. Interviews were conducted in a local language that both the researcher and participant understand. Confidentiality and anonymity were ensured to protect the privacy of the participants. To ensure an unbiased sampling, a database with all houses in the conservancy was acquired from the Namibian Statistical Agency, and each house was assigned a unique number. Thereafter, a random number table was generated to select those who would participate in the study using their unique numbers. In total, 115 households participated in the study. Each interview session lasted for approximately 40 minutes. Data coding and analysis was done in SPSS version 27. A chi-square test of association was used to determine the significance of the results at an alpha level of 0.05.

Results

The results in this section represent the perceptions of 115 participants. The participants were categorised according to their demographics: gender, age, major sources of livelihood, and number of years each participant has been staying in the conservancy area (Table 1). In total, 53% of the participants identified themselves as male and 47% as female. The dominant age group was 34–49 years (42%), followed by those aged 50–64 years (22%), while the least represented age group was participants older than 80 years. In terms of livelihood, nearly two-thirds of the participants cited crop farming as their main source of livelihood, whereas the remaining third participants considered themselves to be mixed farmers. The livelihood source was significantly associated with gender ($x^2 = 6.4$, df = 4, $p < 0.01$), of which female participants largely indicated crop production as a major source of livelihood, whilst male participants selected mixed farming. In total, 53.4% of the participants said they have been living in the conservancy area for more than 15 years, followed by 21.9% who indicated 5–10 years (21.9%). Only 5.2% of the participants have been living in the conservancy area for less than 2 years.

Table 1. *Demographic characteristics of participants*

Predictors	Groups	%
Gender	Male	52.5
	Female	47.4
Age group	20-34	20.7
	34-49	41.8
	50-64	22.4
	65-79	13.8
	Over 80	1.7
The major source of livelihood	Crop farmer	74.8
	Mixed farmer	25.2
	< 2 years	5.2
Years lived in the conservancy area	2 to 5 years	7.0
	5 to 10 years	21.9
	10 to 15 years	11.4
	< 15 years	54.3

Participants identified two major types of human-wildlife conflict persistently occurring in the conservancy: crop-raiding and livestock depredation. In terms of crop-raiding, approximately two-thirds (65.5%) of the participants indicated that crop-raiding was a serious problem in the conservancy, while one-third of the participants (34.5%) did not consider crop-raiding a serious problem in the area. Participants who have been living longer in the study area were more likely (x^2, = 9.44, df = 4, p = 0.04) to agree with the perception that crop raiding is a serious issue in the conservancy compared to participants who have been staying there for a shorter period. Of all the participants who agreed with this perception, 54.6% said they have been living in the conservancy area for more than 15 years. There was no significant association between crop-raiding perceptions and age of participant (x^2 =5.60, df = 4, p = 0.230), crop-raiding perception and gender (x^2=0.0, df = 4, p = 0.9), and crop-raiding perception and source of livelihood (x^2 = 1.46, df = 4, p = 0.22).

For livestock depredation, approximately 84.4% of the participants viewed livestock depredation as a serious issue in the conservancy, whilst 15.6% of the participants did not consider livestock depredation as a serious issue. This perception was significantly (x^2 = 11.70, df =4, p = 0.019) associated with the age group and the number of years spent in the study area (x^2 = 10.74, df = 4, p = 0.03). Participants in the 34–49 years age group were more likely to agree with the perception that livestock depredation was a serious problem in the conservancy compared to the other age groups. This perception was also widely held by participants who have been staying in the conservancy area for more than 15 years, followed by those who have been staying in the area for 10–15 years. However, this perception was not significantly associated with the gender of the participants (x^2 = 0.17, df = 4, p = 0.6731) nor their major sources of livelihood (x^2 = 2.33, df = 4, p = 0.126).

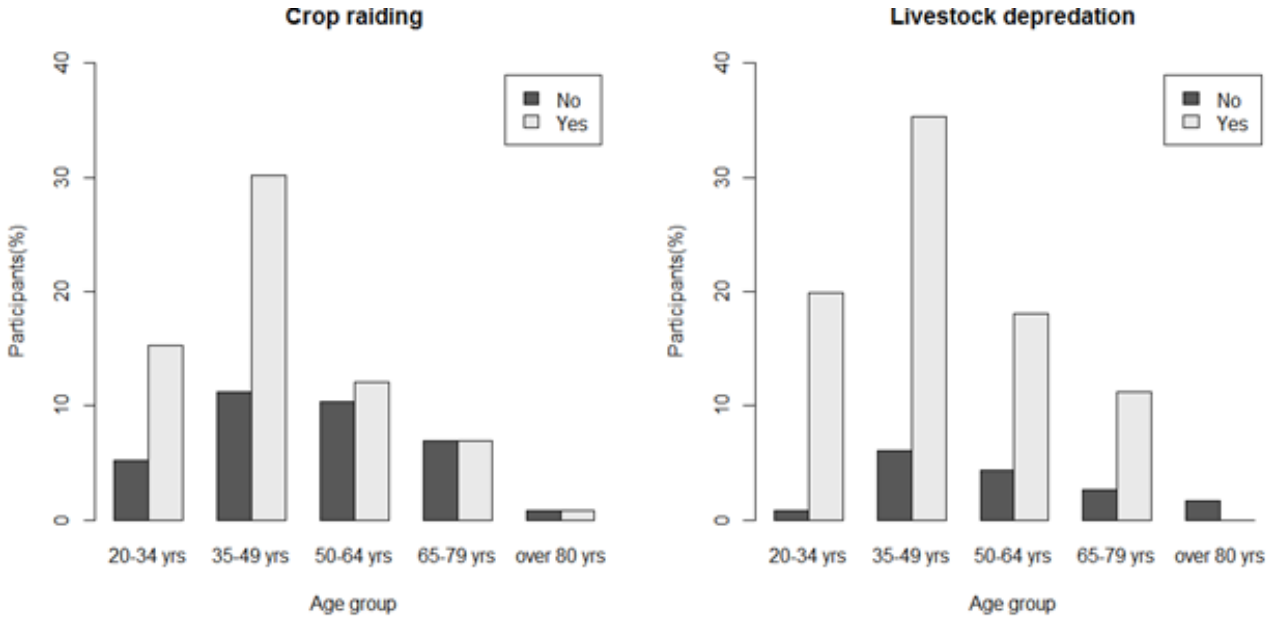

Figure 2. *Perception of participants from different age groups on the extent of crop-raiding and livestock depredation in King Nehale Conservancy*

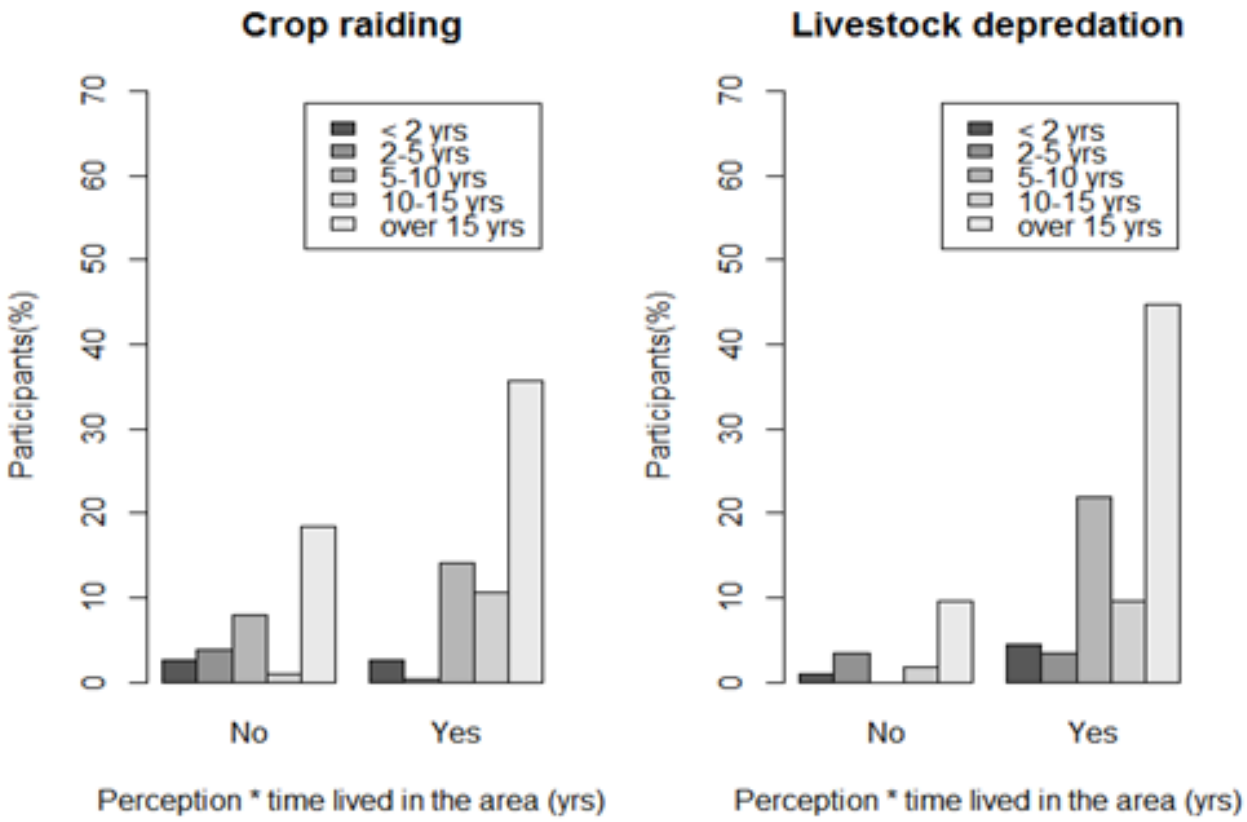

Figure 3. *Participants' perception of crop-raiding and livestock depredation by wildlife and the influence of participant's length of stay in the conservancy*

The results presented in Figure 3 are consistent with the perceptions that dangerous predators such as lions and hyenas frequently roam around the conservancy, killing livestock. As a result, nearly 80% of the respondents believed that human-wildlife conflict is a threat to their livelihood, while some 20% did not consider human-wildlife conflict a threat to their livelihood. Some (26%) of the participants agreed that the initiative of a conservancy has contributed to the reduction in human-wildlife conflict, while 34% of the participants did not agree with this statement. Of the participants involved in this study, 40% were unsure if the community conservation initiative has contributed to the reduction in human-wildlife conflict. Meanwhile, more than half (56%) of the participants believed that the losses incurred by farmers due to human-wildlife conflicts outweigh the benefits generated from the community initiative. Only 4% of the participants believed that the benefits derived from the conservancy outweigh the losses incurred due to human-wildlife conflicts, while 40% were unsure.

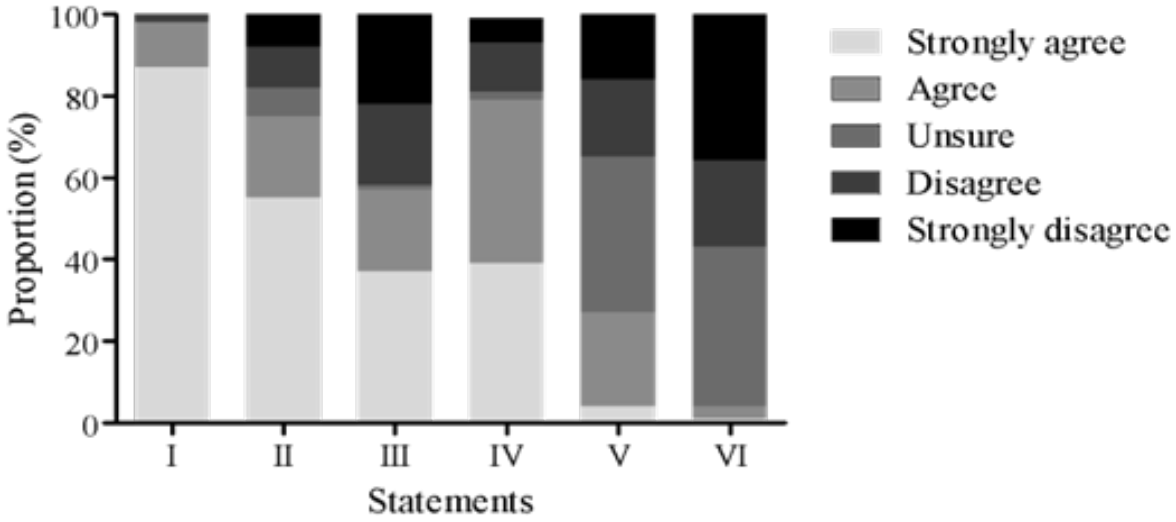

Figure 4. *Participants' response to various statements on human-wildlife conflict: (i) Dangerous wildlife frequently escape from the park into our community; (ii) I lose livestock every year due to wild animals; (iii) My field gets raided by elephants every year; (iv) Our livelihoods are threatened by human-wildlife conflict; (v) The introduction of a conservancy has helped to reduce human-wildlife conflict; (vi) Our benefits from the conservancy outweigh losses we incurred due to human-wildlife conflict*

Discussion

Local communities living along National Parks remain at the receiving end of human-wildlife conflicts (Mhuriro-Mashapa et al., 2018). Large African mammals and predators are mainly contained in protected areas for various reasons, including the protection of species from overexploitation, the economic importance they carry, and conforming to international treaties. Since independence, the Namibian government has enacted legislation that granted community members the right to form conservancies to derive benefits from conservation efforts alongside their traditional livelihoods (MET/NACSO, 2018). The King Nehale Conservancy, directly bordering the Etosha National Park, is inhabited by agro-pastoralists practising mixed agriculture, being located in a wildlife-rich ecosystem (www.nacso.org). While wildlife species could economically benefit the conservancy through conservation hunting and tourism interventions (Naidoo et al., 2016), there has also been destruction by wildlife species of the traditional livelihoods (MET/NACSO, 2018).

Local traditional livelihoods remain important to rural communities, not only in terms of the contribution to the welfare of household members but also in preserving the cultural practices of farming. The conservancy programme provides an opportunity for livelihood diversification to complement agriculture (Khumalo & Yung, 2015). In the King Nehale Conservancy, crop production was rated as the dominant agricultural activity, while some households indicated a combination of livestock rearing and crop production. The local economy is structured primarily around agriculture and pastoralism, where

every homestead comprises a crop field mainly producing millet, sorghum and other related crops as well as keeping different species of livestock.

The results of this study also revealed that local farmers regard human-wildlife conflicts in the form of crop raiding and livestock predation as a serious problem in their community. The animals causing problems along the Etosha National Park have been documented; they include elephants causing crop-raiding, while predators such as lions, leopards, hyenas, caracals and cheetahs contribute to livestock predation among farmers bordering Etosha National park (Lendelvo et al., 2015). Surprisingly, this perception emerged to be gender-differentiated as women felt that crop-raiding is more serious while the male counterparts pointed out livestock predation. In the Aawambo culture, ownership of livestock or crop fields was not gender-differentiated. However, agricultural activities could be distinguished according to gender, with women responsible for crop production at the household level and men for livestock herding or rearing (Mogotsi et al., 2016).

Community perceptions of the gravity of crop-raiding and livestock predation were influenced by different factors. The respondents who have been residing in the conservancy for more than 10 years, significantly perceived crop-raiding as a serious problem. This is evidence that crop-raiding happened persistently to communities surrounding the Etosha National Park over the years (Lendelvo et al., 2015). Nyhus et al. (2005) further indicate that the cost of conserving biodiversity, particularly large and dangerous animals, is often borne disproportionately by communal farmers living around wildlife areas, resulting in communal farmers developing a negative attitude towards wildlife in their communities (Broekhuis et al., 2020; McNutt et al., 2018), which, in turn, aggravates human-wildlife conflicts through retaliatory actions (Hazzah et al., 2009; Kissui 2008). Such incidents can shape the perception of community members. Positive wildlife-related incentives motivate individuals to change their attitudes towards communal conservancies (Van Dalum, 2013).

In semi-arid areas in general, where livestock production constitutes a major part of local livelihoods, high levels of conflict can occur between livestock owners and wild carnivores due to predation. The effect on local people, many of whom are subsistence farmers, can include destruction of crops, livestock depredation, living in a state of fear, inconvenience, and danger to life and limb (Macfie, 2003). In this study, livestock predation was perceived as a serious problem, significantly associated with the economically active group aged 34–49 years. This pattern of perceptions suggests that the younger population segment of the conservancy experienced the economic effects of livestock predation more than the older population group. The elderly group above 50 years might have acquired livestock over time, applying traditional farming practices, while at the same time keeping their livestock closer to the homestead as farming has become commercially unaffordable. The younger generation also tends to apply commercial agriculture, because traditional ways of farming are not profitable to them as it requires financial investments such as purchasing livestock, spending on livestock

management practices such as veterinary treatments, and labour costs for livestock herding. At least 20% of Namibian households depend on subsistence farming as the main source of income (Nangolo & Alweendo, 2020), and enhancing farming strategies will improve benefits amidst human-wildlife conflicts. The recent increase in livestock attacks by predations could also be an explanation for the distress among the younger farmers over this kind of human-wildlife conflict impact.

Most of the livestock predation incidents occur at cattle posts, which are temporary shelters for cattle herders and their animals, often located far away from regular permanent households but closer to the National park where the pasture is still in a good condition. There is strong agreement among residents of the King Nehale Conservancy that the escalating human-wildlife conflicts in the area stems from the frequent movement of problem wildlife species escaping from the Etosha National Park and threatening traditional livelihoods. A survey of over 400 community members across 18 communal conservancies in Namibia revealed that the conservancy status might impact positively on attitudes towards wildlife, but attitudes are conditioned by the experience of individuals (Störmer et al., 2019). Evidence also indicates that communities' perceptions of risk increase negatively when personal safety is at risk (Kahler et al., 2013). These risk perceptions contribute to undesirable actions such as poaching, as locals may allow outsiders to poach as a way of eliminating the threat (Liu et al., 2011). Although the growth of wildlife populations provides opportunities for the wildlife-based economy through hunting, tourism, and joint-ventures, it also leads to threats to local community livelihoods in the form of human-wildlife conflicts (MET/NACSO, 2018).

The growth and type of conservancy benefits to conservancy members have been documented to be positively associated with an increase in wildlife numbers and diversity within the conservancy or landscape in which the conservancy is situated, providing an advantage to conservancies bordering protected wildlife areas such as national parks. However, low direct benefits in conservancies such as the King Nehale conservancy is hampered by a large human population, resulting only in a few people benefiting, either through jobs, craft production or other related enterprises. Although variations may exist among individual conservancies, community benefits of Namibia's CBNRM are either financial, material or social, and generally derived from ecotourism and trophy hunting (Naidoo et al., 2016; MET/NACSO, 2018). The conservancy household or individual level benefits to members may include but are not limited to game meat, cash dividends to members, community or social projects, employment, and training (MET/NACSO, 2018). The large human population in the King Nehale Conservancy does not allow the conservancy to provide cash or material benefit to individual members, unlike in other conservancies with lower population densities where individual members do receive cash or material benefits. This results in most of the King Nehale Conservancy members not valuing the impact of conservation efforts as they do receive any direct benefits, which consequently may lead to a negative attitude towards wildlife if human-wildlife conflicts are not adequately addressed.

Conclusion

This case study of the King Nehale Conservancy presents the effects of human-wildlife conflicts on a connected nexus between conservation, culture and livelihoods. The community-based conservation efforts are hampered by the challenges of human-wildlife conflicts, and this could have a detrimental effect on the future of conservation locally. In addition, community-based conservation has attracted different wildlife species into the proximity to residents, while community members move closer to wildlife core areas in search of better grazing. There is a need for a balanced co-existence between humans and wildlife that will result in minimal destruction of local livelihoods by wildlife and the generation of benefits with the ability to compensate for the loss. The study clearly reveals that traditional livelihoods are threatened by the presence of wildlife destroying crops and animals. Wildlife is supposed to raise the economic and tourism profile of the conservancy, but the findings show that limited tangible benefits have been derived for conservancy members. The absence of benefits may trigger negative perceptions towards wildlife and conservation, especially in a community such as the King Nehale Conservancy where members are highly dependent on agricultural livelihoods. These livelihoods being threatened was the main predictor of human-wildlife conflict seriousness perceptions in the King Nehale Conservancy. This study identifies the need for studies that provide models (i) for the coexistence of humans and wildlife to reduce human-wildlife conflict incidents and (ii) a positive impact on households in community-led conservation areas.

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