



Research Paper

Emergency Strategies in the Management of Human Wildlife Conflict for Sustenance of Livelihoods and Education in Baringo North Sub-County, Kenya.

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ABSTRACT

Human-wildlife conflict (HWC) has reached disaster proportions based on number of deaths of human and wildlife whether as absolute figures or even in the context of destroyed fauna and flora globally. The convergence areas of conflict are around protected areas, where wildlife population is higher and wild animals often stray into adjacent cultivated fields or grazing areas. This study focused on Kamnarok National Reserve in Baringo North Sub-County, Kenya which has received scanty empirical focus on this aspect of HWC. The main objective of the study was to examine emergency response strategies in the management of HWC for sustenance of livelihoods and education in Baringo North Sub-County, Kenya. The study was guided by Kenneth's and Kilmann's Conflict Styles theory together with Dollard's Frustration Aggression Displacement theory. A descriptive survey research design was used. The study population was 286 with principal respondents being drawn from adjacent community households that were victims of HWC. Data was collected using questionnaires, interview schedules, and Focus Group Discussions. On emergency response strategies being applied in the study area, coping strategies were rated as follows: seeking medical treatment after attack was rated at 75%; psychotherapy after the attack was rated at 21% while compensation following the attack was rated at 14%. Since psychotherapy support is very critical in emotional healing and reduced trauma while compensation cushions households especially where a breadwinner has been killed or disabled by the wildlife attack, such low uptake is a precursor to continued hostilities and prevalence of HWC. As for mitigating strategies, the need to initiate dialogue with communities living adjacent to the national reserve was supported at 92% just as was the case with erecting electric fencing around the national reserve to keep off stray wild animals. Other strategies like up-scaling of community awareness on likely economic value to the area in the event that wildlife is supported were rated at 88%. Strengthening of community-based conservation as a prevention strategy for boosted socio-economic gains for the local people received an approval rating of 92%. The study concluded that the strategies employed in the management of HWC are not effective in dealing with the problem since they are short lived and are often reactive in nature. Key coping strategies to allow healing emotionally and economically like psychotherapy and compensation were poorly rated. Psychotherapy which is a critical psychosocial component together with compensation should be boosted. Compensation efforts should consider relocation of adjacent communities as effects of climate change take effect and more people initially not covered under compensation policy are affected.

Key words: Human-wildlife conflict, coping strategies, livelihoods and Education

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I. BACKGROUND TO THE STUDY

Human-wildlife conflict (HWC) has reached disaster proportions based on the number of deaths of human and wildlife or even in the context of destroyed fauna and flora not just in Africa but also in other continents like Asia (World Conservation Union, 2002; Conservation, 2015). The convergence areas of conflict are around protected areas, where wildlife population is higher and animals often stray into adjacent cultivated fields or grazing areas (Gadd, 2005; Mateo, 2012). While several studies have been done on causal factors for high prevalence of HWC and impact of HWC on livelihoods, scanty studies exist that deliberately seek to

appraise existing emergence response strategies towards sustainable management of HWC especially through engagement of communities adjacent to the national wildlife reserves. For instance, while it's true that HWC occurs when the needs and behavior of wildlife impact negatively on the goals of humans or vice-versa, benefits especially from wildlife conservation haven't been well utilized to address this conflict or even deliberately skew such benefits towards boosted livelihoods of the local residents adjacent to such national heritages (Messer, 2009). This study sought to fill this lacuna by examining emergency strategies in the Management of HWC for sustenance of livelihoods and education in Baringo North Sub-County, Kenya. Whereas it's not possible to completely eradicate HWC, researchers opine that the findings in this study shade light on possible strategies and approaches that involve full participation of the local communities that can help reduce it and lead to coexistence between human and wildlife. This will immensely contribute to coexistence between human and wildlife especially in the wake of climate change. Studies by Musiani, *et al.*, (2003) and Patterson, *et al.*, (2004) demonstrated that climatic trends are among lead causes of HWC. They further posit that wild predators like lions and leopards are more likely to attract human attention when they attack domestic animals in the dry season months, where the vegetative cover does not facilitate the hunting strategies that are based on surprise. The study was guided by Kenneth's and Kilmann's Conflict Styles theory and Dollard's Frustration Aggression Displacement theory. A descriptive survey research design was used. The study population was sampled from Government field officers; Community based organizations, Village elders and victims of human wildlife conflicts. The principal respondents were however drawn from adjacent communities' households that were victims of HWC. Purposive and random sampling techniques were used. Data was collected using questionnaires, interview schedules, and Focus Group Discussions.

II. CONCEPTUAL FRAMEWORK MODEL

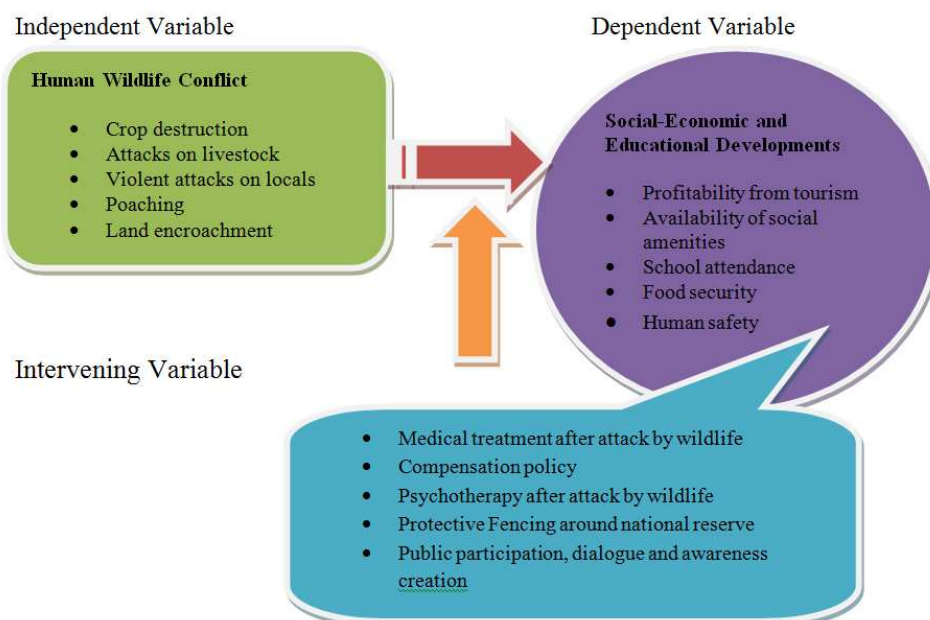


Figure 1: Conceptual Framework Model

Source : Researcher, 2021

III. DISCUSSION OF FINDINGS

The study examined emergency response strategies applied by the victims of human wild life conflicts (HWC) in Baringo North Sub-County, Kenya with a view to establish how it impacted on sustenance of livelihoods and education in the study area. The respondents were asked to state yes or no if they utilized the sampled coping strategies after attacks by wildlife. Their response was as captured in Table 1

Table 1. Coping Strategies for Victims of Human Wildlife Conflicts

Coping Strategy	Yes		No	
	N	%	N	%
Medical treatment after attack	213	75	73	25
Psychotherapy after the attack	59	21	227	79
Compensation from the attack	41	14	245	86

Source: Field Data, 2021; N= 286

From the study, 213 (75%) indicated seeking medical treatment after an attack as a coping strategy while 73 (25%) said they didn't. As for seeking psychotherapy after the attack, the study revealed that 59 (21%) of the respondents utilized it as a coping strategy while 227 (79%) did not use it. With regard to compensation being sought as a coping strategy after attack by wildlife, only 41 (14%) said they did with a majority 245 (86%) indicating that they did not seek for compensation. Since psychotherapy support is very critical in emotional healing and reduced trauma while compensation cushions households especially where a breadwinner has been killed or disabled by the wildlife attack, such low uptake is a precursor to reduced educational attainment by affected households, continued hostilities and prevalence of HWC. In one of the FGDs, it emerged that most victims of wild animals' attacks got treated at hospital facilities within the County. However, many a times, they footed their own bills for medication which is very expensive and detrimental to their income base. One member from the FGDs complained as follows:-

“Victims incur financial costs yet the government should be responsible to meet medical expenses generated from wild animals' attacks.”

(Source: Field Data, 2021)

The picture that the researchers draw from this response is that of residents who are dissatisfied with services received from the government agencies as a follow up on HWC. The low uptake of Psycho-therapy and Compensation as coping strategies could be attributed to the following factors: Compensations were based on the location of wild life attacks; Only victims of wild animals' attacks outside the gazetted reserve were eligible for compensation while the rest were not; in some cases, victims were previously treated as poachers and arrested instead of being assisted with treatment, psychotherapy or even compensation. Cases of attacks inside the reserve were not compensable as per government Policy (Togoch, 2020). Feedback on forms of compensation was as shown in figure 2.

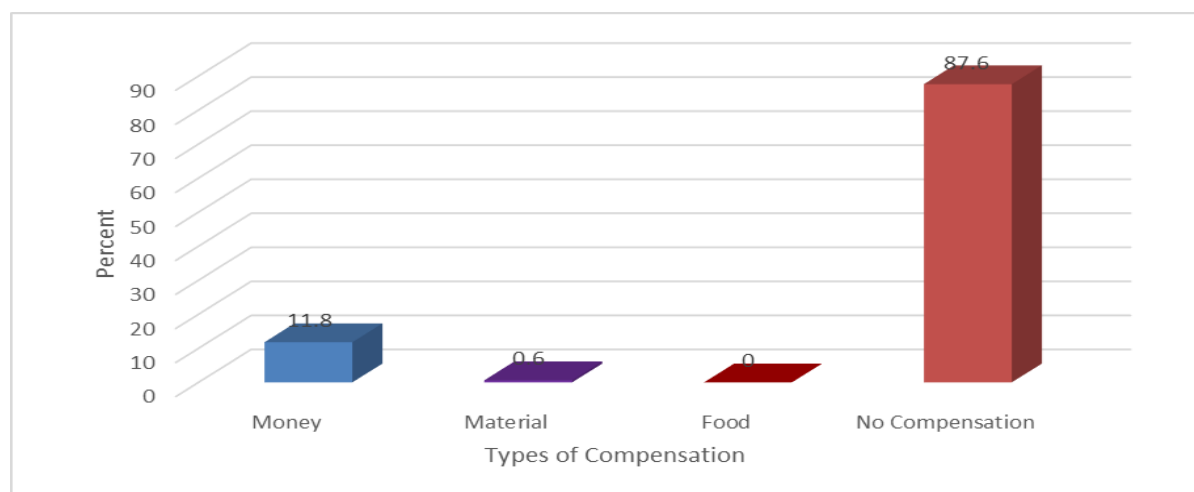


Figure 2. Forms of Compensation

Source: Field Data 2021; N= 286

The findings on compensation as captured in Figure 2 revealed that 87. 6% of the respondents stated that there was no compensation given to the victims of HWC, 11.8% of the respondents stated that there was monetary compensation, while 0.6% said the victims were given materials as compensation. Lack of compensation for incurred losses could likely affect the disposable income available for meeting both social and educational needs among individual households. This finding is corroborated by Leslie et al., (2019) and Togoch (2020) who posited that HWC mitigation takes many forms with the majority being in form of financial incentives to increase tolerance to wildlife; alternative livelihoods and income diversification to spread or avoid financial risk; and payments tied to wild life attack incidents.

This is further corroborated qualitatively during an interview by one of the Chiefs who indicated thus:-

“Communities raise formal complaints whenever there are attacks, injuries or destruction of property, so that they are compensated”.

(Source: Field Data, 2021)

The response by the Chief is an indication of mutual co-existence where residents attempt to solve the human wildlife conflict formally. Lack of compensation could increase hostility.

The study further sought to find out which emergency response strategies were employed to mitigate attacks by wild animals in Baringo North Sub-County. The findings were as presented in figures 3 to 8. The mitigation strategies subjected to rating were that the government should initiate dialogue with communities living adjacent to the national reserve, building of electric fencing around the national reserve to keep off straying wildlife, up scaling community awareness creation on the likely economic value from mutual co-existence between the wildlife and the adjacent communities/households, strengthened community-based conservation as a basis of strengthened nature of conservation and boosted socio-economic gains for the local people, joint government- community initiative to conserve wildlife.

Regarding the assertion that the government should initiate dialogue with communities living adjacent to the national reserve, the findings as shown in figure 3 revealed that 64% strongly agreed, 28% agreed, 4% were undecided and 4% strongly disagreed.

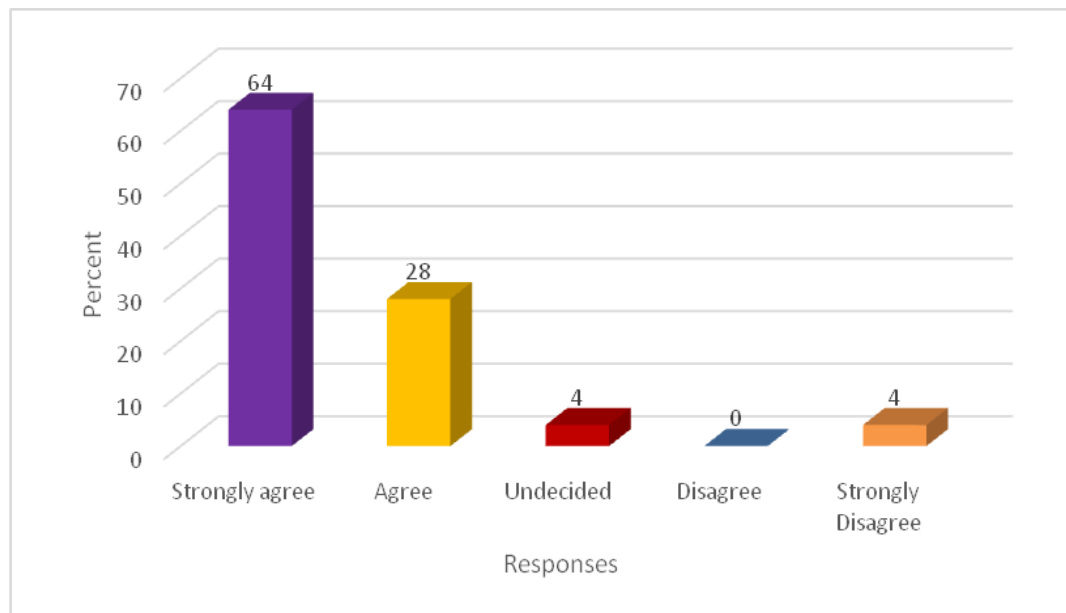


Figure 3: Government Initiation of Dialogue with Communities Living Adjacent to the National Reserve
Source: Field Data, 2021; N= 286

The need for government to initiate dialogue with communities living adjacent to the National reserve is supported by the assertion by Togoch (2020) that there exists a negative trade-off between rural communities' interests and the likely bigger picture desired by the government to conserve wildlife. Studies in Cameroon (Weladji and Tchamba, 2003), Botswana (Mbaiwa, 2005) and Tanzania (Holmern et al., 2006), among others on the concept of human wildlife conflict especially for adjacent communities to national game reserves concurs with this study finding.

As for building of electric fencing around the national reserve to keep off straying wildlife, the study findings as indicated on figure 4 revealed that 68% strongly agreed, 24% agreed, 4% strongly disagreed while 4% disagreed.

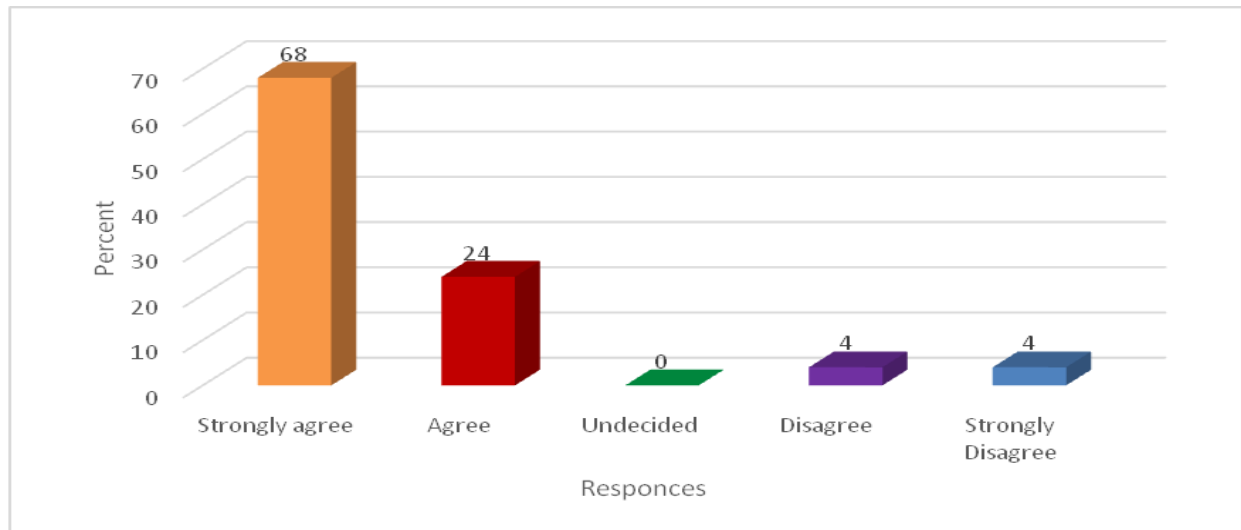


Figure 4: Electric Fencing off National Parks as a Mitigation to Keeping off Wild Animals
Source: Field Data, 2021; N= 286

During an interview with one of the chiefs on methods that were used to keep off wildlife, he pointed out thus:-

“In their struggle to keep off wild life, most people fence off their farms to keep the roaming wildlife at bay, others use traditional methods to chase wildlife from their farms and places of residence through use of smoke /fires, shouting at the approaching wild animal or even beating of tins/drums to scare them. They also demand for fencing by the Government as well as compensation of genuine owners.”

(Source: Field Data, 2021)

The study sought to establish whether up scaling community awareness creation on the likely economic value from mutual co-existence between the wildlife and the adjacent communities/households, would be helpful in taming HWC. The findings as presented in Figure 5 revealed that 60% of the strongly agreed while 24% agreed. The findings of corroborated by Togoch (2020) and Davies and Bennett (2007) on the account that there is evident interaction between conservation and socio- economic needs pursuit by households in the adjacent areas of the national game reserve. Such awareness could be built around livelihood diversification as averred by Conway et al., (2002) which is critical in enabling them to come with perturbation from human wildlife conflict.

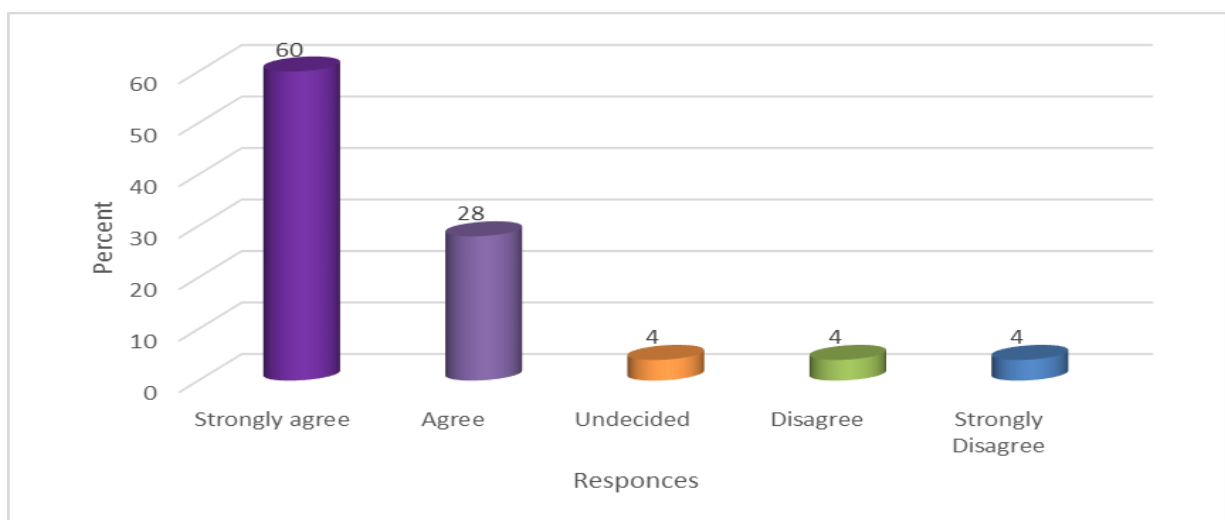


Figure 5: Community awareness creation on the economic value of wild game in the Reserve within Baringo North-Sub County

Source: Field Data, 2021

Discussions from the FGDs revealed the following:

“Conservation of wild life translates to economic gains for development. It also boosts our education out of tourism proceeds paid to us as host communities.”

(Source: Field Data, 2021)

This confirms the fact that with the establishment of Kamnarok National Reserve, Baringo North Sub County residents would greatly realize the huge economic potential of the tourism industry. These again could imply that advocates against conservation measures are opportunists who have constantly perpetrated HWC. The discovery of the tourism potential in Kerio valley by both colonial and successive Kenyan Governments indeed justifies the need to arrest HWC. This will pave way for sustainable conservation for economic development with a net effect of improved community livelihoods. Appeals by communities to the Government to initiate corporate social responsibility (CSR) activities in addition to petitioning the Government to relocate “foreign” invaders of forests within cattle rustling prone areas of Baringo North confirms anticipated benefits. One elder strongly pointed out:

“Kila mtu anajua kwao, watoke ndani ya Game Reserve. Watolewe kabisa” “(Every person knows their home, let them vacate the game reserve. Let them be removed completely).”

(Source: Field Data, 2021)

The above expression is an indication that community members advocate for conservation and natural co-existence. This may also be an expression of the elders’ sense of meaning and purpose of conservation.

On strengthened community-based conservation as a basis of enhanced nature of conservation and boosted socio-economic gains for the local people, the findings are as shown in Figure 6. Fifty six (56%) percent of the respondents strongly agreed while 36% agreed, bringing the figure of concurrence to 92%.

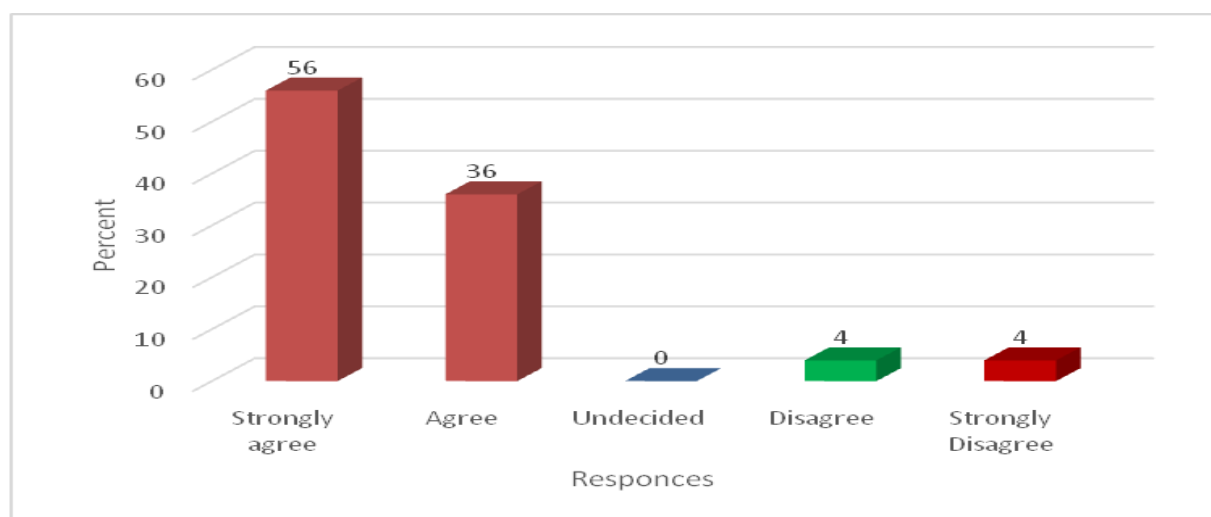


Figure 6: Community-based conservation as a basis of strengthened nature of Conservation and boosted socio-economic gains for the local people

Source: Field Data, 2021

Qualitative data from the FDGs indicated that conservation of wildlife for economic value could be traced back to the early 1990s (several decades ago). During the interviews with FGD, it emerged that the historical foundation of the conservation area traces back to colonial period. One FGD narrated as follows:

“It all started at Rimo in what is today’s Elgeiyo Marakwet County in the years 1948, 1949 and 1950 when a Second World War prisoner was exiled to the area as an Isolation case...., the colonial government conscripted some African men to offer labour services to him. They made a road from Rimoi to Lake Kamnarok for the locally nicknamed prisoner – Kipsomorgut so that he would routinely visit the ox-bow lake. The road ended at a location locally called Tabar where a signpost inscribed ‘*Rimo Game Park*’ was fixed at the base of an acacia tree...., Outside the camp, a metal frame staircase was erected for the citizens to Climb up for an exciting view of grazing elephants and other wild game.”

(Source: Field Data, 2021)

Another member of the FGD retorted:

“The white man prisoner used local labour to clear 100 acres of land to practice agriculture; one of his labourers was called Kipkarne Arap Kipyoo. He planted groundnuts and sorghum while the farm was guarded by an employed guard named Chemogol from Elgeiyo Marakwet County..., the guard received reports from local

appointees on any killings of wildlife by hunters. The wildlife hides and skins were confiscated and the hunter got arrested and taken to serve imprisonment at Tambach.”

(Source: Field Data, 2021)

The above excerpt highlights the theme of the historical basis of community based involvement in conservation and development of socio- economic gains. It also confirms the various meaningful strategies that stakeholders engage in an attempt to create strengthened community based conservation. This may however be negated by the respondents that expressed unawareness.

Another FGD participant stated:

“Successive Parliaments after independence approved demarcation of Kerio Valley as a National Game Reserve. The area was seen as a potential tourist destination for tourism earnings. The government involvement with the then Baringo District Leadership in 1983 culminated in the community’s acceptance to surrender their land for wildlife conservation..., after the official Gazettement, concrete beacon were fixed along the reserves agreed boundary using labour from the local community..., the affected households, around 350 were registered and compensated.”

(Source: Field Data, 2021)

Discussions by elders from one of the FGDs revealed that community elders gave the government total go ahead to surrender the identified stretches of land parcels, currently occupied by Kamnarok National Game Reserve (1983)...,one argued thus:

“...*Ngombe yangu hujilisha mchana na wenu hujilisha usiku*” (...My animals feed themselves during the day while yours (wild animals) feed themselves during the night).”

(Source: Field Data, 2021)

Regarding the strategy that community-wildlife conservation be encouraged and benefits from wildlife conservation guaranteed as per written agreements, the findings are as shown in Figure 7. That 48% of the strongly agreed while 40% agreed.

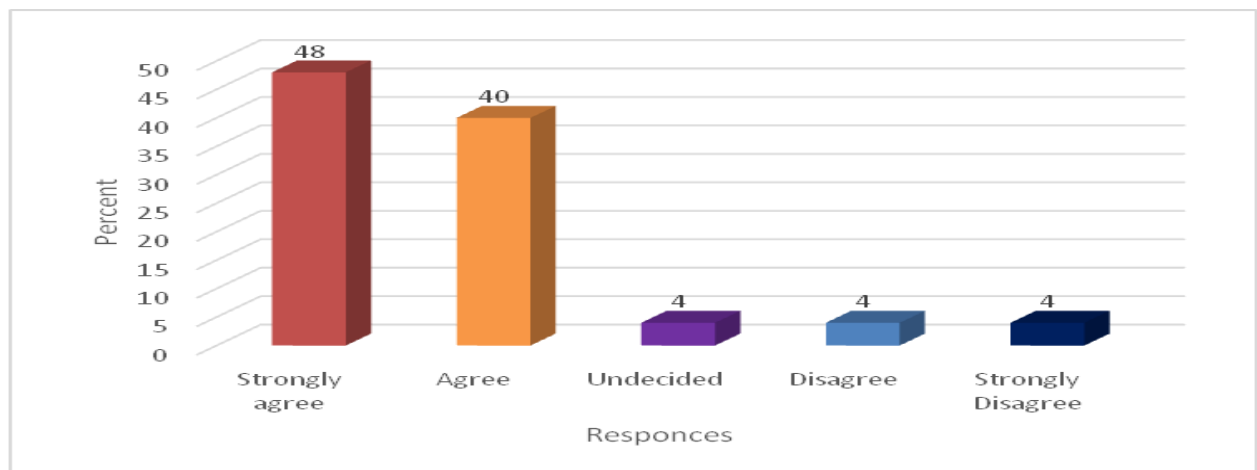


Figure 7: Community-wildlife conservation based on the principle of local community’

Environmental management

Source: Field Data, 2021

The study sought to find out whether combined government-community wildlife conservation motivates communities towards wildlife conservation as is the case with forest management without which wildlife conservation efforts are doomed to fail. The findings in Figure 8 revealed that 56% of the strongly agreed and 36% agreed; bringing the figure of concurrence to 92% just like in the cases of anticipated socio-economic benefits.

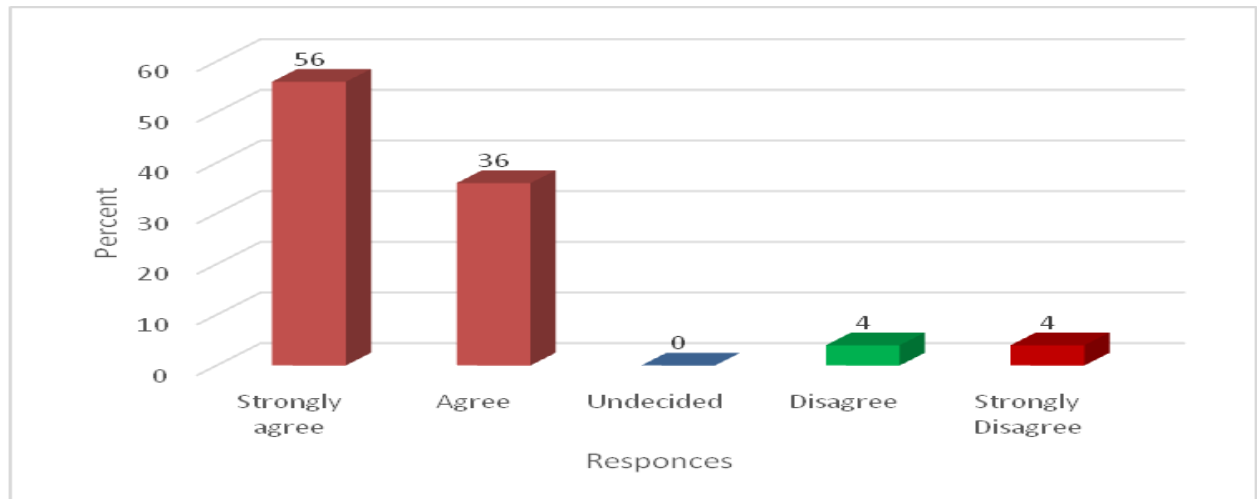


Figure 8: Joint Government- Community initiative to conserve wildlife.

Source: Field Data, 2021

Findings of this study were corroborated by the qualitative data obtained from the FGDs. It emerged for instance from one of the FGDs that the historical foundation of Kamnarok National Reserve is entrenched in Tugen community's value for wildlife co-existence. This was revealed from respondents' narrations thus:

"The older people left the valley basin devoid of any human activities save for small hunting and bee keeping. People settled up the Tugen escarpment on grounds of its vantage point for security surveillance as well as skillful avoidance of disturbance to the wildlife and their habitats. The valley was associated with wildlife as their God-given habitats. Community elders then designated specific place / locations for wild animals-related species. Examples: Kubo ngetuny – a lion's habitat; Beeb Kibaw – water for rhino; Kimugungon – footprints/hoof paths; Chatipbel – migratory route for elephants; Kap kuikui – a location for crocodiles (also called kuikui)."

(Source: Field Data, 2021)

IV. CONCLUSION OF THE STUDY

The study concludes that the strategies employed in the management of HWC are not effective in dealing with the problem since they are short lived and are often reactive in nature. There is need to have for a more proactive approach by both National and County governments to tackle the situation differently. There is need to have a more preventive approach as opposed to the current reactive approach.

V. RECOMMENDATIONS OF THE STUDY

Compensation policy should be simplified for prompt action and that the initial owners of the land in which the reserve covers should also be compensated well to deal with the problem of people encroaching back into the reserved land. Coping strategies employed are short-lived; there is need for government agencies to be proactive in order to forestall any belated attempts to address HWC. The study recommends that research should be done on the nature and extent of Human Wildlife Conflict effect on Socio- economic development in other counties that equally experience the brunt's of wildlife conflict as this study covered only Baringo North Sub-County.

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