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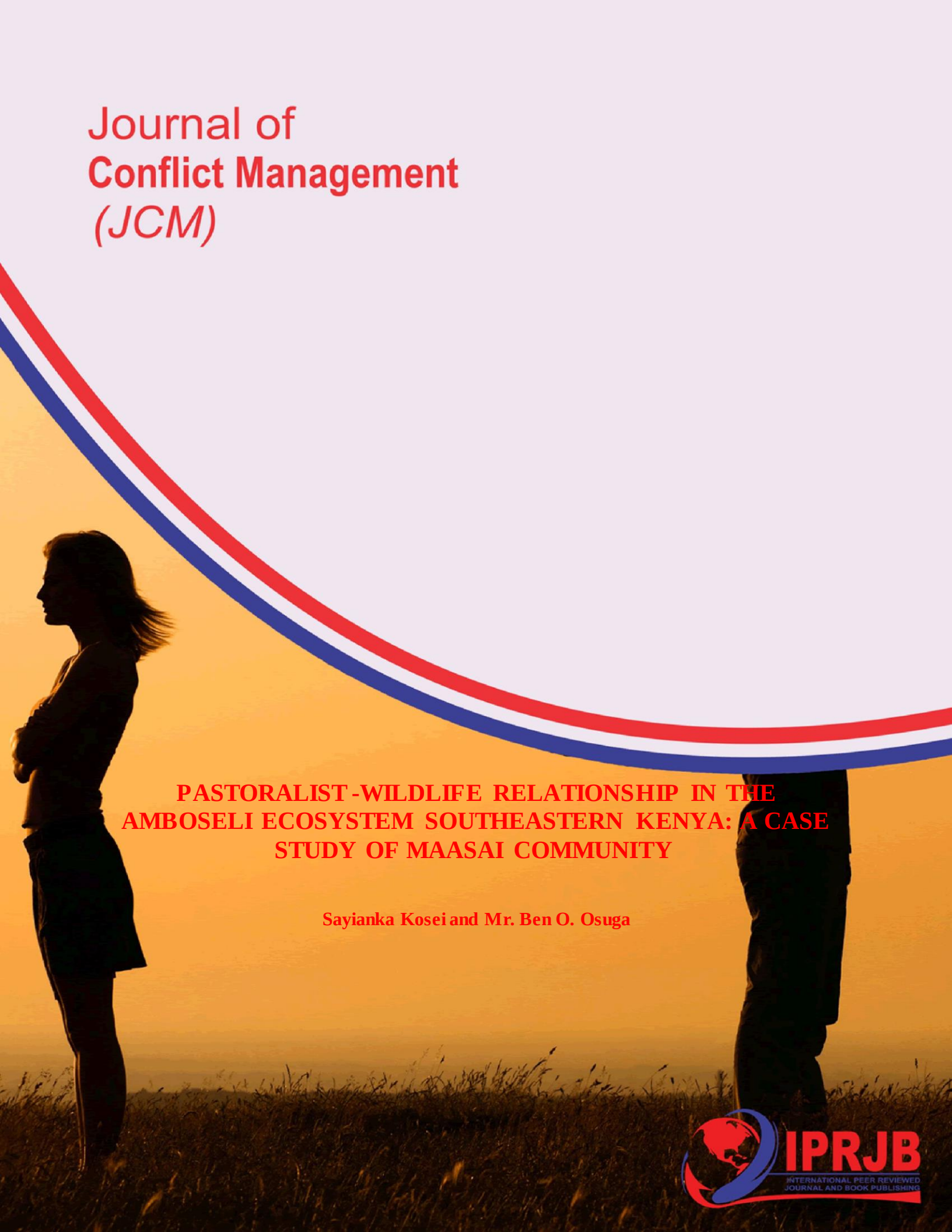

PASTORALIST-WILDLIFE RELATIONSHIP IN THE AMBOSELI ECOSYSTEM SOUTHEASTERN KENYA: A CASE STUDY OF MAASAI COMMUNITY

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Pastoralist-Wildlife Relationship in The Amboseli Ecosystem Southeastern Kenya: A Case Study of Maasai Community

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Abstract

Purpose: To establish the pastoralist-wildlife relationship in the Amboseli Ecosystem South Eastern Kenya.

Methodology: The study utilized a descriptive research design.

Findings: Results revealed that there exists wildlife based benefits. These benefits were bursary for education, construction of schools, supply of water, employment, tourism and electric fence. Results also revealed that majority of the respondents indicated that these benefits were inadequate. Results also revealed that human-wildlife conflicts occurred frequently. The conflicts were as a result of crop damage, wild animals preying on the domestic animals, pasture competition, poaching, wild animals killing human beings and property destruction. Further, results revealed that the economic costs of living with wildlife were loss of livestock, crop destruction and loss of breadwinners. The non-economic costs were very minimal. They included severe injuries and loss of lives. Results also revealed that the respondents would feel very good if the wildlife was to be confined in parks. The respondents also felt that the government/KWS would assist in curbing the problem of human-wildlife conflict through compensating those affected, protecting them from the wildlife, putting an electric fence. Similarly, the respondents felt that they would assist in curbing the problem of human-wildlife conflict through cooperating with KWS, practicing compatible land use activity and assisting in moating.

Unique contribution to theory, practice and policy: The results of the study will be of use to the wildlife regulatory bodies and the government to come up with policies aimed at improving the pastoralist-wildlife relationship in the Amboseli Ecosystem South Eastern Kenya and other game reserves in the country. This study will also be important to the local residents in Maasai communities of the Amboseli ecosystem. The research study will also give viable solutions to the minimization of cost from wildlife, benefits increased from wildlife related activities and change local people attitudes" towards conservation. The research will also give suggestions on the compatible land use activities with wildlife conservation in order to mitigate the human – wildlife conflicts.

Keywords: *Wildlife-Based Economic Benefits, Human-Wildlife Conflicts, Economic and NonEconomic Costs, Local People's Attitudes, Wildlife Conservation*

INTRODUCTION Background

Globally the world biological diversity (biodiversity) is concentrated in the tropical regions. It is in the tropical regions too that most of the world‟s human population is to be found and where man‟s use of the land is intense and longstanding, thus management of protected areas (PAs) under these circumstances is especially challenging and requires innovative approaches. It has been recognized that successful wildlife conservation in Africa depends on the cooperation of local residents (Berger, 2006).

Inamdar (2009) point out that purely protectionist approaches to biodiversity conservation have become widely unpopular, not least with the internation conservation community, and that traditional protected areas (PAs) are suffering from the public relations crisis. The causes of this crisis include the high economics costs of fences and fines‟ approaches to conservation (LeaderWilliams, 2012), the low economic returns from protected areas compared to alternative human settled land uses (Norton-Griffiths & Southey, 1995), and the strength of political voices claiming that the exclusion of the local people from parks in variously unfair, unreasonable and /or illegal (Neumann, 2010).

The conservation of natural resources in Kenya since the 1940s has been largely based on the National Park Model classified as category II of IUCN network of protected areas in the world (IUCN, 1986). Now conservation in Kenya seems to be in crisis (Mwale, 2010) partly because of this singular model approach and exclusion of local communities. In a new study, Okello and Kiringe (2000) have looked at the relative magnitude and types of threats to the protected areas of Kenya, and the results shows that 62% of all the Kenya‟s protected areas are threatened.

The conservation strategy should be broad, target new initiative on a landscape level in and around existing protected areas and beyond them. An application of an alternative model of conservation that goes beyond park boundaries, involving local communities and bridges the hostile gap between conservation of natural resources ideals and the aspirations of indigenous local communities is urgently required or needed to safeguard vast landscapes of cultural, biological and historical significance in Kenya (Mwale, 2010).

Given the great demand for land in Kenya, designation of more protected areas based on the category II National Park Model is becoming impossible. Local people now comprehend their rights and are supported by international human rights organizations. Many communities in Kenya, especially the Maasai, lost their land to colonial settlers and to „carving off‟ land to establish protected areas with consultation or compensation. They cannot allow a repeat of conservation measures to be presented and implemented as they were in the past.

The current benefits of conservation pass over to the central government rather than to local communities, making more protected areas resented and irrelevant to the local communities which continually shoulder lost opportunity costs and conservation-related losses. The only conservation approach that will work in Kenya outside protected areas, in wildlife dispersal areas and in communities owned lands such as the pastoral Maasai communities of the Amboseli ecosystem

will be the protected landscape model because of its involvement of the local people; it‟s valuing of their culture and its encouragement of sustainable development within lived-in working landscapes.

With about 60% of the local community being illiterate and or with very low levels of education, changing attitudes and opinions by creating awareness through formal education may be less successful. The negative impacts of a land use shift to the agriculture that will alter their culture and conservation need to be explained clearly and consistently to them. However, many local communities are demanding education as a key incentive together with household cash and access to the natural resources (such as water, pasture, firewood, and plants resources). The absence of the benefits from conservation seems to be increasing separation rather than integration of the culture and the nature of the landscape (Okello & Nippert, 2001). In 1996, the Kimana Group Ranches such as formally became the first community owned wildlife sanctuary in Kenya. Other group ranches such as Eselengei, Loolarrashi, Mbirikani, and now Kuku group ranches have or are on the process of voluntarily setting aside a section of their group ranches as exclusive wildlife sanctuaries (Okello & Kiringe, 2002).

Statement Problem

The co-existence of people and wildlife in the Amboseli ecosystem is multifaceted and goes well beyond the simplistic travel agency clichés according to which "Maasai live in harmony with wildlife" (Maasai even being portrayed as being part of the local fauna…). In recent times, socio-economic, land tenure and land use changes, and wildlife conservation measures have introduced layers of complexity in the relationship between land users and wildlife. Efforts at "reconciling wildlife and people" through the development of local wildlife-based enterprises and the provision of benefits to individuals are commendable. However, these efforts may turn out to be useless if heterogeneity within communities is not considered and if benefits are not equally distributed. Through the mismanagement of expectations and the creation of frustration, the approach may actually backfire and make future conservation efforts more difficult. This research is precisely addressing the questions of who is getting benefits and who is not and why, of how people are feeling about the provision and distribution of benefits versus the costs they incur by living with wildlife, and what are the non-monetary factors which also may influence people-wildlife relationship. It hopes to contribute to offering a multi-layered and sensitive picture of the co-existence of humans, livestock and wild animals in the Amboseli ecosystem.

Objectives

- To determine which wildlife-based economic benefits are available to the local people and if, and to which extent, people are enjoying these benefits.
- To determine the local types of human-wildlife conflicts and the species of wildlife involved.
- To describing the perceived economic and non-economic costs of living with wildlife.

- To characterize the local people"s attitudes towards wildlife and wildlife conservation across the different land tenure and land use activities.

THEORETICAL REVIEW

According to the 2003 International Union for the Conservation of Nature (IUCN) World Parks Congress, human-wildlife conflict occurs when wildlife requirements encroach on human populations, which costs both residents and wild animals (IUCN, 2005, pg 4). Human-wildlife conflict has been in existence for as long as humans and wild animals have shared the same landscapes and resources.

Human wildlife conflict has serious socioeconomic implications to humans. Family income and food reserves have been threatened leading to food insecurity and widespread poverty among the affected (Muruthi, 2000). This has brought wildlife management and conservation strategies into sharp focus. For instance, the Kenya Wildlife service is mandated to conserve and manage wildlife. In order to do this, it ought to develop strategies that are aimed at reducing the impact of the conflict between human beings and wildlife. These strategies can be preventive, mitigation and winning the heart and mind strategies. Specifically, this strategies can include partnership with communities or individuals who have wildlife on their lands and bear the cost of humanwildlife conflict, provide security from the wildlife menace , compensate for wildlife related deaths, injuries and property destruction, provide advice and technical support on wildlife conservation management related issues and provides conservation education awareness creation.

METHODOLOGY OF THE STUDY

The study utilized a descriptive research design. The study focused on 50,000 residents of the Maasai community in the Amboseli Ecosystem. The four study areas were Imbirikani South, Kuku, Kimana and loolarash. The study adopted a descriptive design. The study targeted 50,000 residents of the Maasai community in the Amboseli Ecosystem. The data was obtained from the Amboseli Ecosystem database. The sample comprised of 75 local residents of the Maasai Community. The study used purposive sampling technique to select only the local residents of the Maasai Community who are practicing different lands use activities. The study used primary data collected using a structured questionnaire, since it is easier to administer, analyze and economical in terms of time and money. Data collected from the questionnaires was prepared and converted from responses to quantitative format for ease in analysis using statistical package for social sciences (SPSS). The statistics generated frequencies and descriptive statistics. Microsoft excel was used to in production of diagrams and tables. Excel was also used to help generate diagrams and charts to represent the data gathered.

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RESULTS OF THE STUDY

Response Rate

The number of questionnaires that were administered was 75. A total of 60 questionnaires were properly filled and returned. This represented an overall successful response rate of 80% as shown on Table 1.

Table 1: Response Rate

Response	Frequency	Percent
Returned	60	80%
Unreturned	15	20%
Total	**105**	**100%**

Demographic Characteristics

The respondents were asked to describe their basic characteristics such as their gender, age, level of education and ranch. Results revealed that majority of the respondent as shown by 86.67% indicated that they were males whereas 13.33% of the respondents were females. Results also showed that majority of the respondent as shown by 50% indicated that they were between 35-50 years, 15% between 18-35 years and 15% above 50 years. This is an indication that majority of the respondents were at the middle age (productive age). Further, results revealed that majority of 73.33% of the respondents reiterated that they had acquired only primary education, 23.33 % had no education, while 3.33 % of them had secondary education. This implied that education was not a priority among the Maasai community. Finally, results evealed that 33.33% of the respondents were from Imbirikani, 31.67 % were from Kinama, 25% were from Kuku while 10 % were from Loolarash.

Wildlife-Based Economic Benefits

The study sought to determine which wildlife-based economic benefits are available to the local people. Results in Figure 1 show that 75% of the respondents agreed that there exist economic benefits while 25% of the respondent disagreed.

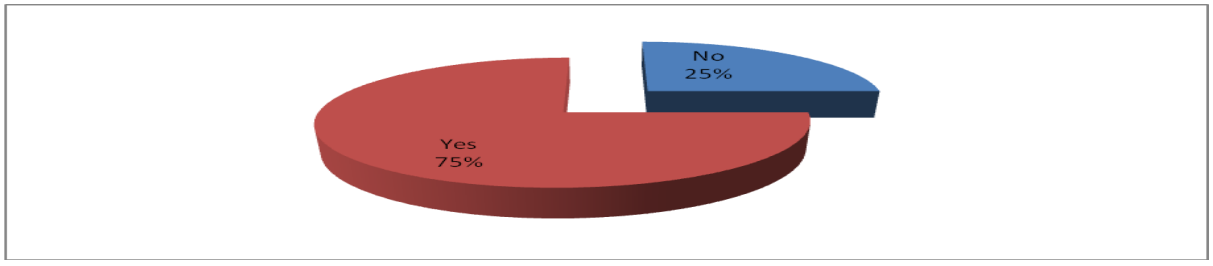

Figure 1: Benefits

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Results in Figure 2 show the percentages of the various benefits that are available to the locals. The respondents indicated that the greatest benefit that they get is bursary for education (25%), construction of schools (21.7%), supply of water (20%), employment (18.3%), tourism (8.3%) and electric fence (6.3%).

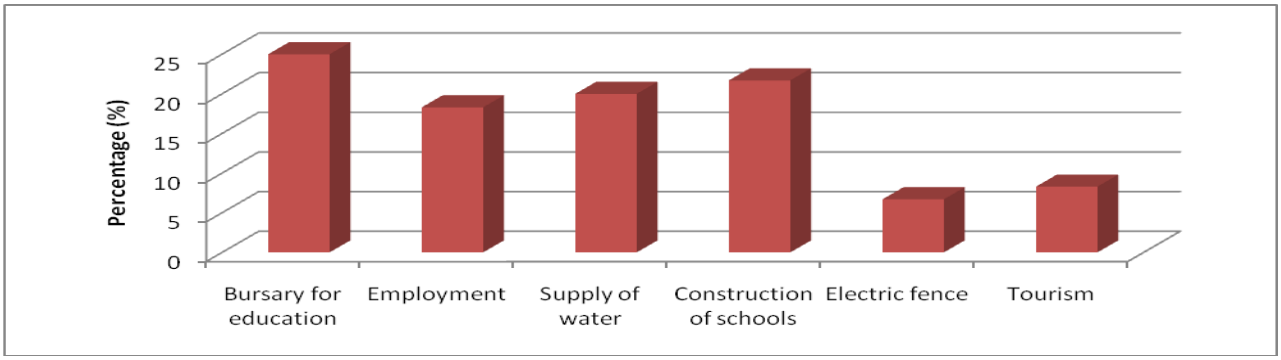

Figure 2: Type of Benefits

Results in Figure 3 shows that 75% of the respondents indicated the benefits were not adequate while 25% of the respondents indicated that the benefits were adequate. This implies that there is still much that can be done to benefit the Maasai community within the Amboseli Ecosystem.

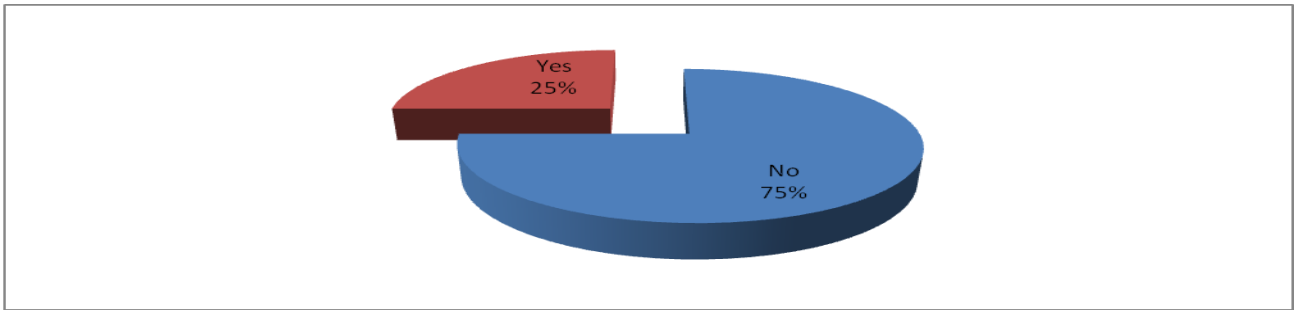

Figure 3: Adequacy

Results in Figure 4 show the respondents suggestions of what can be done to improve on the benefits. A majority of 36.7% suggested that KWS should increase their revenue sharing, 35% suggested that KWS should improve their transparency, 16.7% suggested that the KWS should increase employment while 11.7% suggested that there should be increased sanitary establishment.

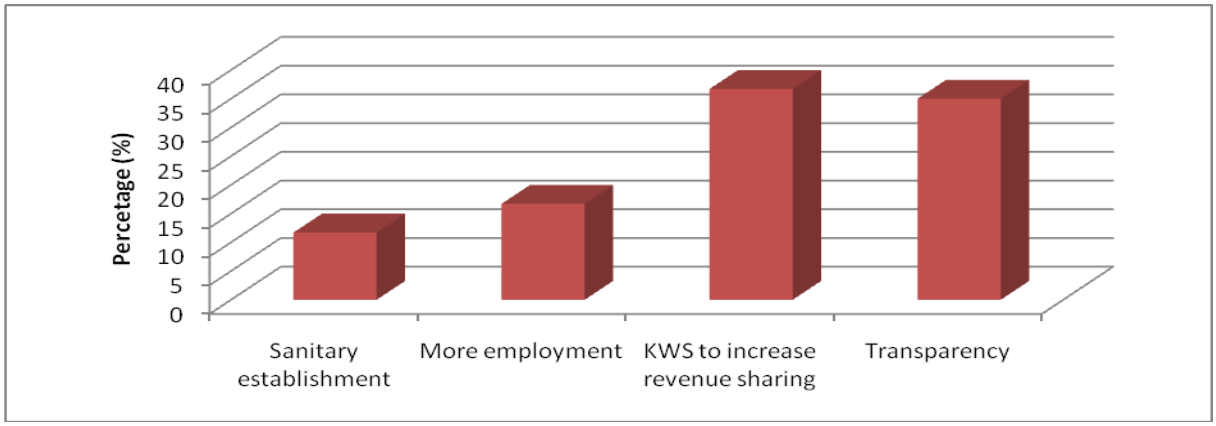

Figure 4: Suggestion of Benefits

Results in Figure 5 show that a majority of the respondents (45%) indicated that the benefits were decreasing, 33.33% indicated that the benefits were increasing while 21.67% of the respondents indicated that the benefits were the same (had not changed).

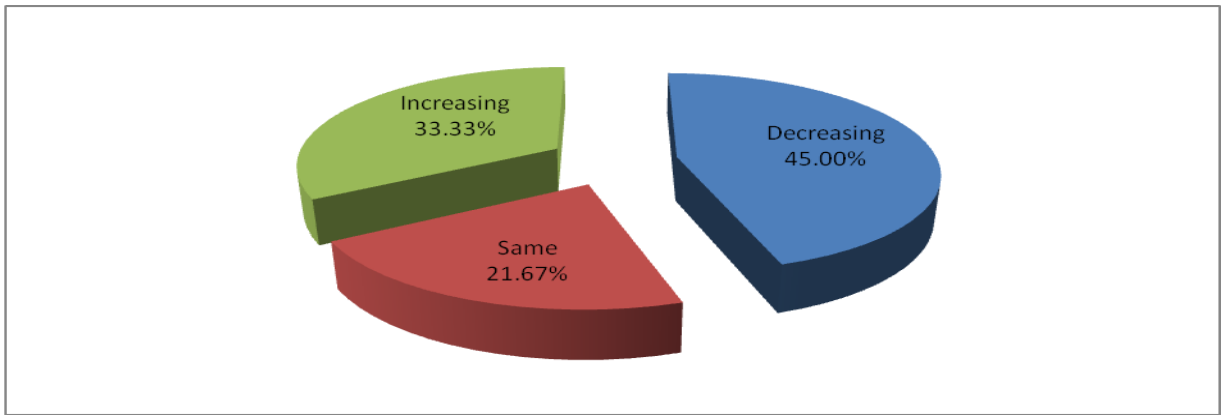

Figure 5: Nature of Benefits

Human Wildlife Conflict and Animal Species

The respondents were asked to the local types of human-wildlife conflicts and the species of wildlife involved. Results in Figure 6 show that a majority of the respondents (66.7%) indicated that human wildlife conflicts are frequent while 33.33 % indicated that human wildlife conflicts are infrequent.

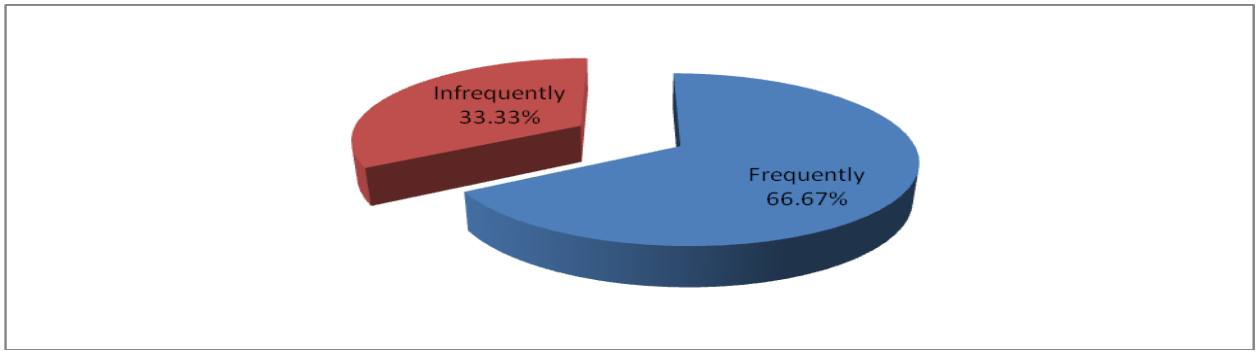

Figure 6: Human-Wildlife Conflict

Results in Figure 7 show the types of conflicts that exist. A majority of 76.67% indicated that the human wildlife conflict was as a result of crop damage, 66.67% as a result of wild animals preying on the domestic animals, 43.33% as a result of pasture competition, 36.67% as a result of poaching, 36.67% as a result of wild animals killing human beings and 23.33% as a result of property destruction.

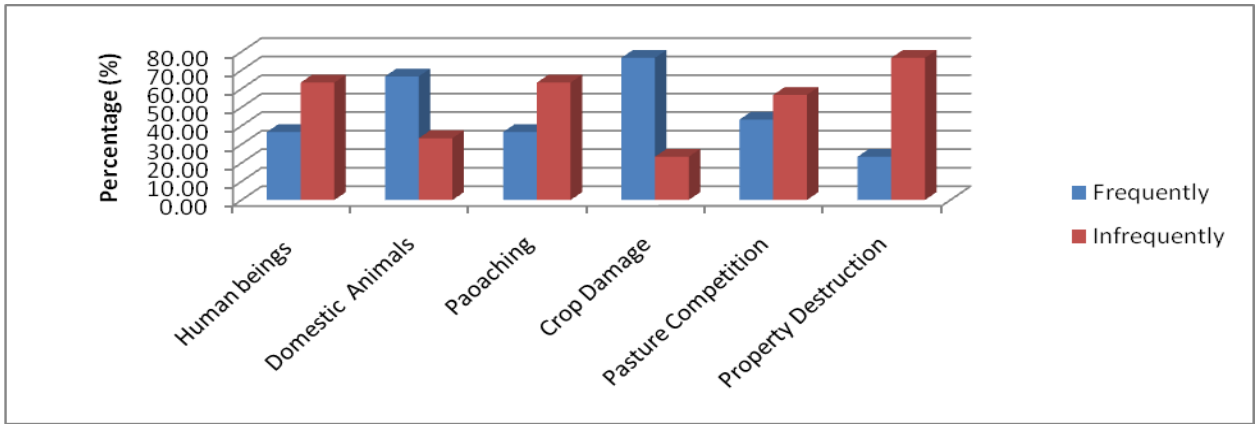

Figure 7: Type of Human-Wildlife Conflict

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www.iprjb.org Results in Figure 8 show the species of animals that destruct the Maasai community in Amboseli ecosystem. A majority of 20% respondents indicated that other animals such as monkeys and squirrels, 18.3% 0f the respondents indicated that cheetahs were the most problematic, 15% indicated that elephants and leopards were the most problematic, 13.3% indicated that lions were the most problematic, 10% indicated that hyenas were the most problematic while 8.3% indicated that buffalos were the most problematic.

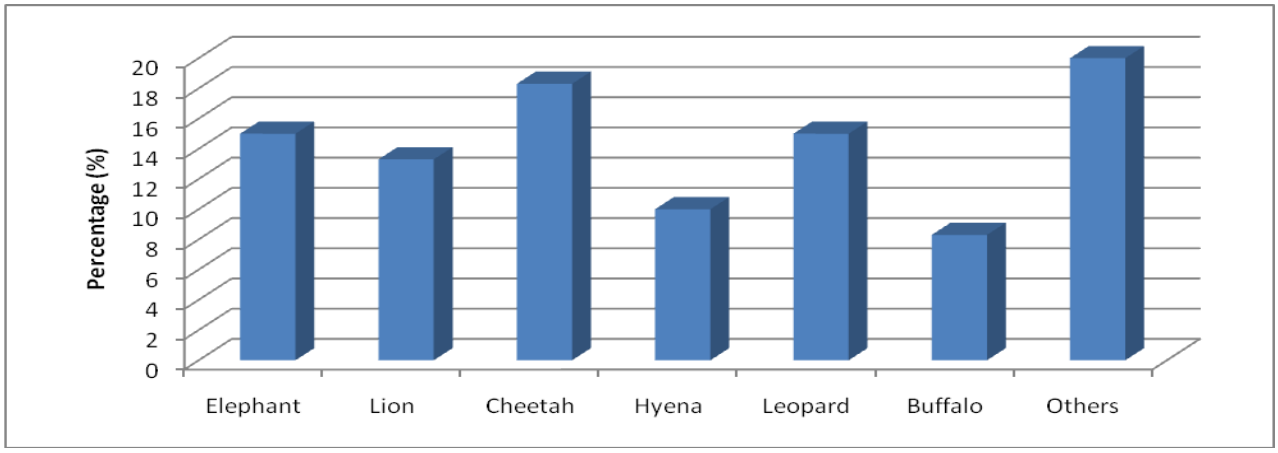

Figure 8: Type of Animal Species

Economic and Non-economic Costs

The respondents were asked to describe the perceived economic and non-economic costs of living with wildlife. Results in Figure 9 showed that a majority of 46.67% of the economic cost was a result of loss of livestock, 36.67% of the economic cost was a result of crop destruction while 16.67% of the economic cost was a result of loss of breadwinners.

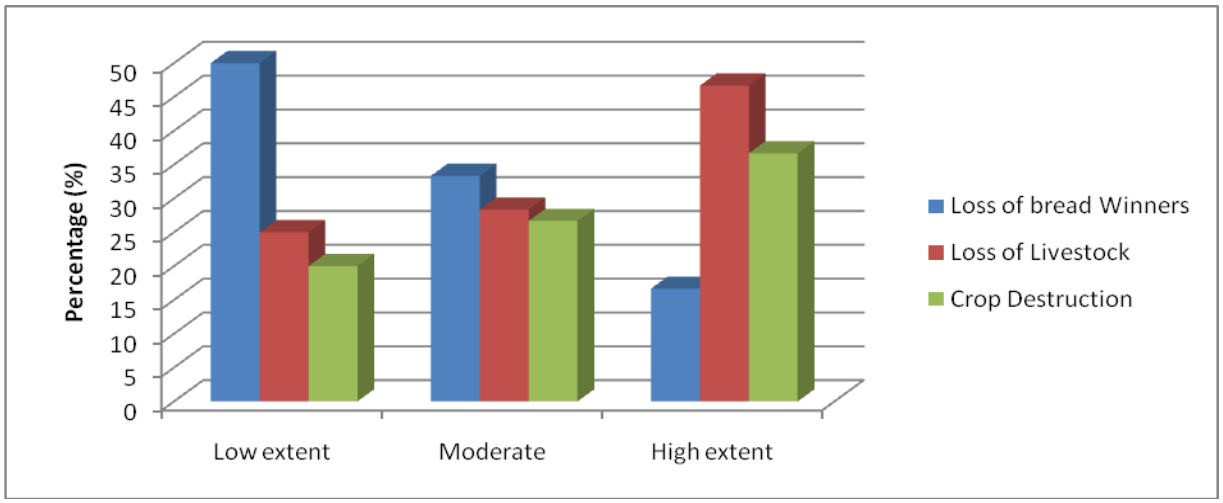

Figure 9: Economic Costs

Results in Figure 10 show that a majority of the non-economic costs were very minimal. This is supported by the fact that only 16.67% of the respondents indicated that they had severe injuries while 8.33% of the respondents indicated that they had instances of loss of lives.

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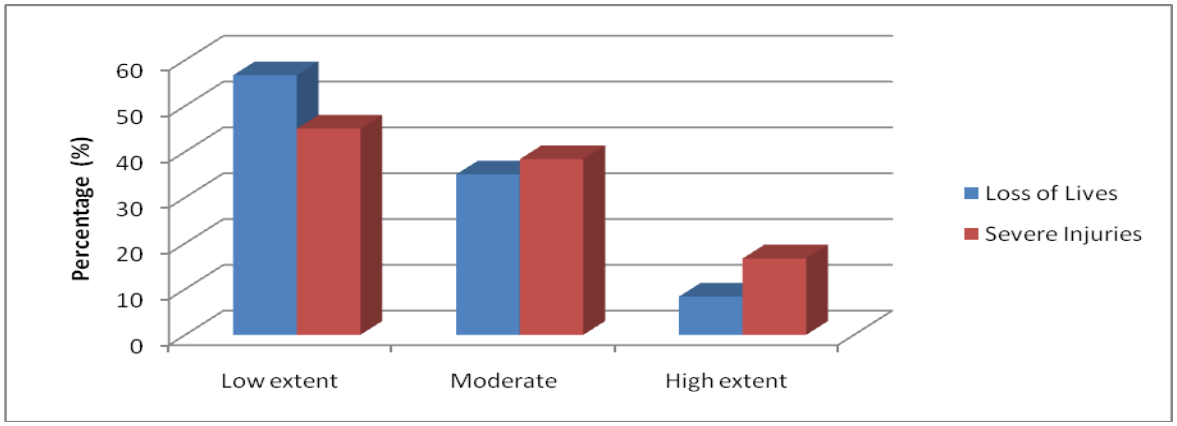

Figure 10: Non-Economic Costs

Peoples Attitude towards Wildlife and Land Use Activities

The respondents were asked to characterize the local people‟s attitudes towards wildlife and wildlife conservation across the different land tenure and land use activities. Results in Figure 11 indicate that a majority of the respondents (55%) were pastoralist, 26.67% were agro pastoralist, 11.67% were practicing agriculture while 6.67% were, businessmen, hunters, charcoal burners and beekeepers.

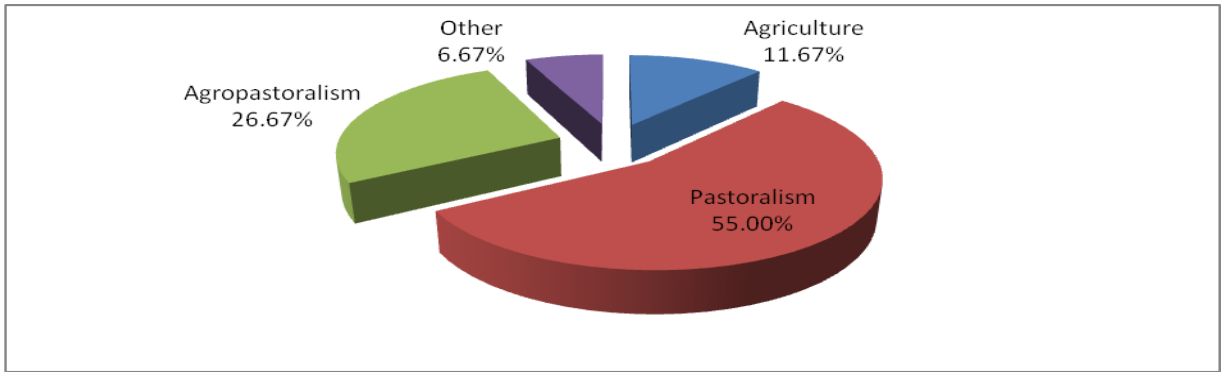

Figure 11: Livelihood

Results in Figure 12 show that a majority of 51.67% of the respondents agreed that their livelihoods affected the wildlife while 48.33% of the respondents indicated that their livelihoods did not affect the wildlife in any way.

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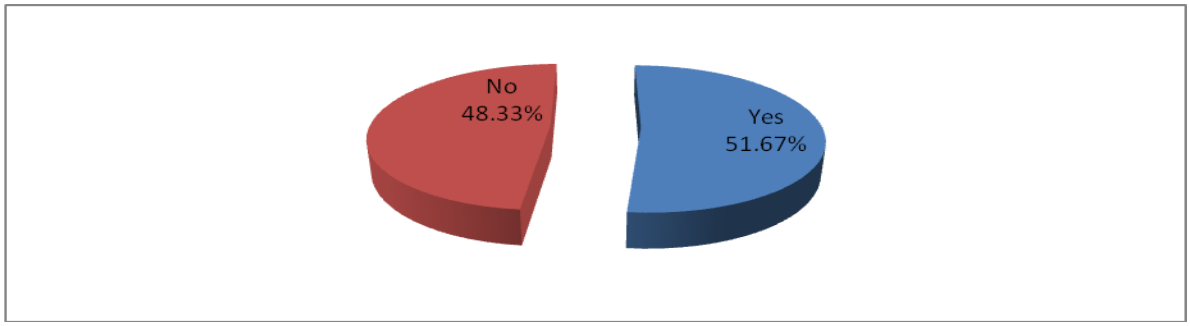

Figure 12: Effect on Wildlife

Results in Table 2 show that a majority of 70% were affecting the wildlife by affecting their habitat, 25% by blocking corridors while only 5% were affecting the wildlife by other ways such as hunters who killed the wildlife for food.

Table 2: Effect on Wildlife

Effect	Frequency	Percent
Destroying wildlife habitat	42	70
Blocking corridors	15	25
Other	3	5
Total	**60**	**100**

elihoods, 10% were not

Results in Table 3 show that a majority of 86.7% were reliant on their liv
very reliant while only 3.3% were not reliant at all.

Table 3: Reliance on Livelihood

Reliance	Frequency	Percent
Not Reliant at all	2	3.3
Not Very Reliant	6	10
Reliant	24	40
Very Reliant	28	46.7
Total	**60**	**100**

Results in Table 4 shows that a majority of 50% of the respondents got water from streams, 30% from rivers, 11.7% from boreholes while 8.3% got water from swamps.

Table 4: Source of Water

Water Source	Frequency	Percent
Rivers	18	30
Streams	30	50
Swamp	5	8.3
Borehole	7	11.7
Total	**60**	**100**

Results in Table 5 show that a majority of 51.7% indicated that the water sources were decreasing, 35% indicated that the water sources were the same while 13.3% of the respondents indicate that the water sources were increasing.

Table 5: Nature of Water Source

Nature of Water	Frequency	Percent
Decreased	31	51.7
Same	21	35
Increased	8	13.3
Total	**60**	**100**

Results in Table 6 show that a majority of 40% indicated that they obtained pasture from ranges with the wet and dry season, 35% indicated that they obtained pasture from the park, 16.7% indicated that they obtained pasture from swamps while only 8.3% of the respondents who indicated that they obtained pasture from irrigated swamps.

Table 6: Source of Pasture

Pasture Source	Frequency	Percent
Ranges with the wet and dry season	24	40
Swamps	10	16.7
Park	21	35
Irrigated swamps	5	8.3
Total	**60**	**100**

Results in Table 7 show that all the respondents agreed that the pastures levels are decreasing.

Table 7: Nature of Pasture (Is it increasing?)

Nature of Pasture	Frequency	Percent
No	60	100

Results in Table 8 show that a majority of 38.3% indicated that the decrease was as a result of change in land use, 31.7% indicated that the decrease was as a result of competition from wildlife, 18.3% indicated that the decrease was as a result of increase in livestock populations while 11.7% indicated that the decrease was as a result of unreliable rainfall. **Table 8: Cause of Decrease in Pasture**

Cause of Decrease	Frequency	Percent
Changes in land use	23	38.3
Unreliable rainfall	7	11.7
Competition from the wildlife	19	31.7
Increase livestock populations	11	18.3
Total	**60**	**100**

Results in Table 9 shows that a majority of 81.6% of the respondents would feel good if the wildlife was to be confined in the parks while 18.3% of the respondents would feel bad if the wildlife was to be confined in the parks.

Table 9: Feeling

Feeling	Frequency	Percent
Very bad	5	8.3
Bad	6	10
Good	29	48.3
Very good	20	33.3
Total	**60**	**100**

Results in Table 10 show that 36.7% of the respondents indicated that the government/KWS can solve the problem of human-wildlife conflict by compensating those affected, 33.3% of the respondents indicated that the government/KWS can solve the problem of human-wildlife conflict by protecting them from the wildlife while 30% of the respondents indicated that the government/KWS can solve the problem of human-wildlife conflict by putting an electric fence. **Table 10: Government/KWS Solution**

Government/KWS Solution	Frequency	Percent
Electric Fence	18	30
Defense from wildlife	20	33.3
Compensation	22	36.7
Total	**60**	**100**

Results in Table 11 show that 40% of the respondents indicated that the individuals can solve the problem of human-wildlife conflict by cooperating with KWS, 38.3% of the respondents indicated

that the individuals can solve the problem of human-wildlife conflict by practicing compatible land use activity while 21.7% of the respondents indicated that the individuals can solve the problem of human-wildlife conflict by assisting in moating.

Table 11: Community Solution

Individual Solution	Frequency	Percent
Cooperate with KWS	24	40
Moat	13	21.7
Compatible land use activity	23	38.3
Total	**60**	**100**

CONCLUSIONS

The study concluded that the economic costs associated with human wildlife conflict were loss of livestock, crop destruction and loss of breadwinners. The non-economic costs were very minimal which included severe injuries and loss of lives. Further the study concluded that the sources of livelihood among the Maasai community in Amboseli ecosystem included pastoralism, agro-pastoralism, agriculture and others such business, hunting, charcoal burning and beekeeping. The Maasai community was very reliant on their sources of livelihood and they also interfered with the wildlife in various ways such as destroying their habitat, blocking corridors and other ways such as hunters who killed the wildlife for food. The study concluded that the sources of water among the Maasai community included streams, rivers, boreholes and swamps which were decreasing with time. The study concluded that the sources of pastures were ranges with the wet and dry season, park, swamps and irrigated swamps whose levels were also decreasing over time. Reasons for this decrease were change in land use; competition from wildlife, increase in livestock populations and unreliable rainfall. Finally, the study concluded that there is need for the government/KWS and also the Maasai community to intervene and confide the wildlife in parks so as to curb the problem of human-wildlife conflict. This could be done through compensating those affected, protecting the community from the wildlife, putting an electric fence, cooperating with KWS, practicing compatible land use activity and assisting in moating.

RECOMMENDATIONS

The study recommends that the government, the KWS and other conservation organizations needs to re-evaluate their strategies since human wildlife conflict is still present in the Amboseli ecosystem. This can include a land policy to move residents from some areas. Electric fences should also be erected. Specifically, the KWS should allocate more officers to the protection of residents of Imbirikani South, Kuku, Kimana and loolarash area. In addition, it is recommended that KWS officers should respond quickly when a problem/dangerous animal is on the loose. Furthermore, the KWS and the government should ensure that they increase the compensation amount per person attacked by a wild animal. In addition, the KWS should ensure that there is timelines and fairness when conducting verification of claims (transparency). KWS and other conservation organization should ensure that the revenue schemes address the most vulnerable in the society by focusing on food security, education and health and security.

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