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**Title: Conflict minimizing strategies on natural resource management and use:
the case for managing and coping with conflicts between wildlife and agro-
pastoral production resources in Transmara district, Kenya**

SO Nyamwaro, GA Murilla, MOK Mochabo and KB Wanjala
KARI-TRC, P.O. Box 362, KIKUYU 00902, Kenya
Email: nyamwaro2005@yahoo.com , Nyamwaro@kari-trc.org

Summary

It is now well known that a large proportion (up to 90%) of the wildlife population is not contained within the designated areas (the national parks and game reserves) in Kenya. The wildlife thus coexists and interacts with humans and livestock. Research was initiated in Transmara district of Kenya to identify and document factors contributing to competition for and conflicts over management and use of wildlife interactions with agro-pastoral production resources. The research was aimed at finding out: (a) causes leading to competition for and conflicts over multiple land uses, (b) whether the policy on Wildlife Compensation Schemes¹ is necessary and sufficient, (c) extent of losses incurred and benefits received by local communities due to wildlife interactions, and (d) how the conflicts are managed. Informal and formal socio-economic surveys were undertaken to collect both secondary and primary information on perceptions of communities about the stated issues.

About 97% of the respondents indicated that wildlife is the major cause of conflicts affecting local human communities. Elephants, baboons and leopards were the most destructive and dreadful wild animals. Losses that were incurred by the local communities in the past one year were in the form of human deaths (9%) and injuries (7%), cattle deaths (35%) and injuries (15%), and sheep and goats' deaths (80%) and injuries (23%). The most affected gender groups were the school-going children (56%) and male adults (21%). Some of the local people (32%)

¹ Compensation Schemes are Acts of Parliament first enacted in 1976 and amended in 1989 stating the rules, regulations and procedures of getting compensated either in monetary terms or in kind by the government when land owners and their livestock are killed or injured and their properties destroyed.

indicated that they used to receive indirect benefits in terms of social amenities that are no longer being received. Most respondents (65%) pointed to a unanimous view that wild animals provided little benefits but destruction to people. Majority of the respondents (72%) appeared to be aware that Wildlife Compensation Schemes were in existence but on the other hand most of them (73%) did not necessarily know why the schemes are there for or how they operated. The most cited solutions to minimize and manage such conflicts were putting up a perimeter fence around Mara National Game Reserve, getting rid of wildlife using every means possible, and increasing and expanding wildlife compensation rates. Respondents also proposed that equitable sharing of earnings from wildlife resources be initiated and implemented in an acceptable and amicable manner. The respondents further suggested that for the new proposals to be actualized they should be incorporated into a reviewed broad-based wildlife policy. This would go a long way in contributing to poverty alleviation for the Maasai pastoralists and agropastoralists.

1. Introduction

Although it is well known that wildlife is supposed to be confined in designated and protected areas (the national parks and game reserves) in Kenya, a large proportion (up to 90%) of the wildlife live outside the designated areas (Parker, 2003; Mwanjala, 2005). Therefore wildlife coexists and interacts with humans and their livestock on daily basis; competing for pastures and water, preying on livestock and damaging crops and plants, killing humans, destroying infrastructure, and enhancing spread of disease-causing organisms (such as tsetse flies and trypanosomes) to livestock (Kwayera, 2003). Transmara district is an epicenter of such areas given that it is directly adjacent to the great Maasai Mara National Game Reserve (MNGR).

Although controversial, wildlife is a beneficial major renewable natural resource that has formed a firm basis of today's vibrant tourist industry in Kenya. For this reason, among others (like aesthetic, scientific and heritage), wildlife is protected by all means by the Government of Kenya (GOK) through its legal agency, the Kenya Wildlife Services (KWS) [Parker, 2003; Chiemelu, 2004]. And because tourism is a thriving industry in

In Kenya, Compensation Schemes have been very contentious given that the actual compensations have been marginal, belated, erratic and sometimes not forthcoming.

Kenya, there are many interest and lobby groups² interested in wildlife and its related resources. Hence, there exist real and potential conflicts over the management and use of wildlife as natural resource

In particular, it is acknowledged that the GOK earns substantial amounts of foreign exchange from tourism and local county councils earn cess, but the Maasai people who live with the wildlife in their group ranches only benefit marginally and indirectly through community structures (e.g. minor infrastructural improvements such as roads, dispensaries and schools). While it is observed that on average about 80% of the wildlife lives outside the national parks and reserves, less than 1% of the revenues collected as wildlife earnings trickles down to local communities. The Maasai MNGR that normally attracts 60% of the nature tourists who come to Kenya annually earned US\$50 million in 1997.

But the Narok County Council that received a proportion (about 19%) of the wildlife earnings on behalf of the community, spent less than US\$30 000/= (less than ½%) on infrastructural improvements, schools and health facilities in Transmara district. This is in spite of the fact that more than 80% of the wild animals in Transmara district live outside the restricted areas – where they cause nearly one human death per week in addition to destruction of crops and property and preying on livestock (Kwayera, 2003). Increasing competition for forage and water and disease risk, particularly from wildebeest and buffaloes have been rampant among the Maasai pastoralists (Stelfox *et al*, 1980). The foregoing prevailing scenarios have not satisfied the optimal utility of the Maasai people; and over time dissatisfaction has created lots of competitions and conflicts between the Maasais and the official owners of the wildlife (KWS and the local County Council).

² These are interest groups that lobby for wildlife protection for various reasons. The groups include but not limited to local, national and international economic and non-economic interests – ranch owners, non-governmental organisations interested in conservation and research, central and local governments, and hotel, catering and transport industries.

In fact, recent conspicuous cases in point have clearly pointed out that natural resource-based conflicts involving land, water, pastures and forests are quite prevalent in Kenya in general and Transmara district in particular (Manundu, 1997; Kimani, 2001). For example, stiff competition over scarce pastures and water is claimed to be the major cause of conflicts in other parts of Kenya especially in the North Rift districts of Kenya (Kaino, 2001). At the same time, battles unfolded pitting groups of prominent ranchers in Kenya's Laikipia district against local communities angered by little benefits they derive from wildlife that they host on their land. Many from the Maasai ethnic groups are crying out that they receive little or no benefits, suffer from human and livestock losses by wildlife, continue to be marginalized by KWS and unclear land tenure policies (Opala, 2001).

The most recent and classic conflict between man and wildlife owners in Kenya was the so called '*Kitengela Massacre*', where the Maasai local community killed over 10 lions – because the lions killed and preyed on 100 of their cattle, goats and sheep.

Immediately, the government initiated a manhunt for the lion killers using over 50 armed security personnel and a police helicopter to protect the lions (Teyie and Karuri, 2003; Ng'ang'a and Mwangi, 2003)). In Sitoka sub-location of Transmara district, elephants have killed people and destroyed crops and property. Elands are competing with livestock for pastures. The people claim that they are never compensated for loss of their livestock, pastures and property.

Notwithstanding, the current Kenyan policy is that there is no compensation for property destruction including livestock losses due to wildlife. Without consultations, KWS scrapped sections of the compensation scheme dealing with all forms of property damage caused by wildlife about 10 years ago in favour of community service (Chiemelu, 2004). But for loss of human life from wildlife, there is a modest compensation allowance of KES³30,000/= (equivalent to US\$375/= at an exchange rate of US\$1/= to KES80/=). The processes of this compensation are also very bureaucratic and cumbersome. The Compensation Scheme has been slow and inefficient. Although

³ KES = Kenya shillings, the Kenyan currency in use

the scheme was changed in 1989 into a new policy called the Community Wildlife Service and implemented for indirect benefits (schools, health centers and other social infrastructure) as compensation for damages (KWS, 1990), villagers around Maasai Mara National Reserve rejected the new policy in 1992, threatening to kill all wildlife around them. The communities demanded direct benefits (Hecox, 2000).

In addition, it has been observed that some Kenya researchers and many conservationists have most often assumed that people bordering wildlife conservation areas hold negative attitudes towards wildlife. The observation lacks empirical evidence given that these researchers and conservationists have ignored the fact that those people have lived with and conserved wildlife harmoniously for hundreds of years (Chiemelu, 2004).

Therefore a study motivated to empirically identify and document factors contributing to the competition for and conflicts over natural resource management and use (NRMU) was initiated. The study concentrated on factors accruing from wildlife interactions with the Maasai agro-pastoral production resources using Transmara district as case study in Kenya. Coping mechanisms / mitigation strategies on the prevailing human-wildlife conflicts in Transmara district were proposed. It is expected that derived recommendations from the study would be used to influence reviewing processes of broad-based wildlife policy for conflict resolutions. In addition, findings of this study will give insights into greater understanding on ways of managing and coping with conflicts over natural resources. Finally, it is anticipated that the overall outcomes of this study will also enhance improved benefits for all wildlife stakeholders; and thus improve pastoral rural development. The improved rural development will, in turn, improve rural incomes thus contributing to reduction of poverty afflicting pastoralists who live with wildlife.

2. Objectives

The general objective of this study was to investigate, identify and document factors that would be used for minimizing and managing of conflicts arising from common use of wildlife and agro-pastoral production resources and contribute to poverty reduction in Transmara district, Kenya. To achieve the overall objectives, the following specific objectives were identified, ascertained and documented:

- (a) Causes/sources leading to competition for and conflicts over multiple land use practices, and their extent and effects
- (b) Suggestions for reviewing current Wildlife Compensation Schemes (WCS) – established in 1976 and amended in 1989; and try to understand how the schemes work; and whether they are necessary
- (c) Extent of losses incurred and benefits received by local communities
- (d) Suggestions from stakeholders on practical and workable ways / solutions to manage and use natural resources equitably; and minimize conflicts over multiple resource uses.

- 3. Guiding Core Hypotheses**
- (a) There are few causes for conflicts over multiple sharing of natural resources in Transmara district.
 - (b) The feelings, attitudes and perceptions of pastoralists / agropastoralists, the government and various wildlife stakeholders towards direct and equal sharing of wildlife benefits and the current WCS are superb.
 - (c) There are no direct benefits and costs for the pastoralists / agropastoralists in Transmara district accruing from the wildlife / livestock / agropastoral resource interfaces.

4. Materials and Methods

4.1 Study area

The study was carried out in Kirindoni and Lolgoriani administrative divisions of Transmara district that is located in the southern rangelands of Kenya (Figure 1). As a result of the great Maasai Mara National Game Reserve being part of the Transmara district, some of the most conspicuous wildlife / livestock and other agro-pastoral interfaces are experienced here, resulting in great conflicts in the management and use of

natural resources. Kirindoni and Lolgorian divisions of Transmara district are thus part of the major wildlife dispersal areas (that form the extension of the Mara – Serengeti ecosystem [KWS, 1990])

Most of the southern rangelands of Kenya, particularly the Transmara district, where the study was conducted fall under ecological zones (ecozones) IV and V. Ecozone IV has low and erratic bimodal rainfall ranging from 700-750mm per annum. The bimodal rainfall pattern falls during the long rains from March to May and short rains from October to November. The livestock carrying capacity for this ecozone is 4ha/AU⁴. Ecozone V has even lower and more erratic bimodal rainfall than ecozone IV, less than 600mm per annum. The bimodal rainfall is similar to that of ecozone IV. The potential carrying capacity for this ecozone is 12ha/AU (Senga, 1976; Pratt and Gwynne, 1977). In general, the study area is suited for intensive livestock production with high wildlife intensity roaming from the Mara/Serengeti ecosystem.

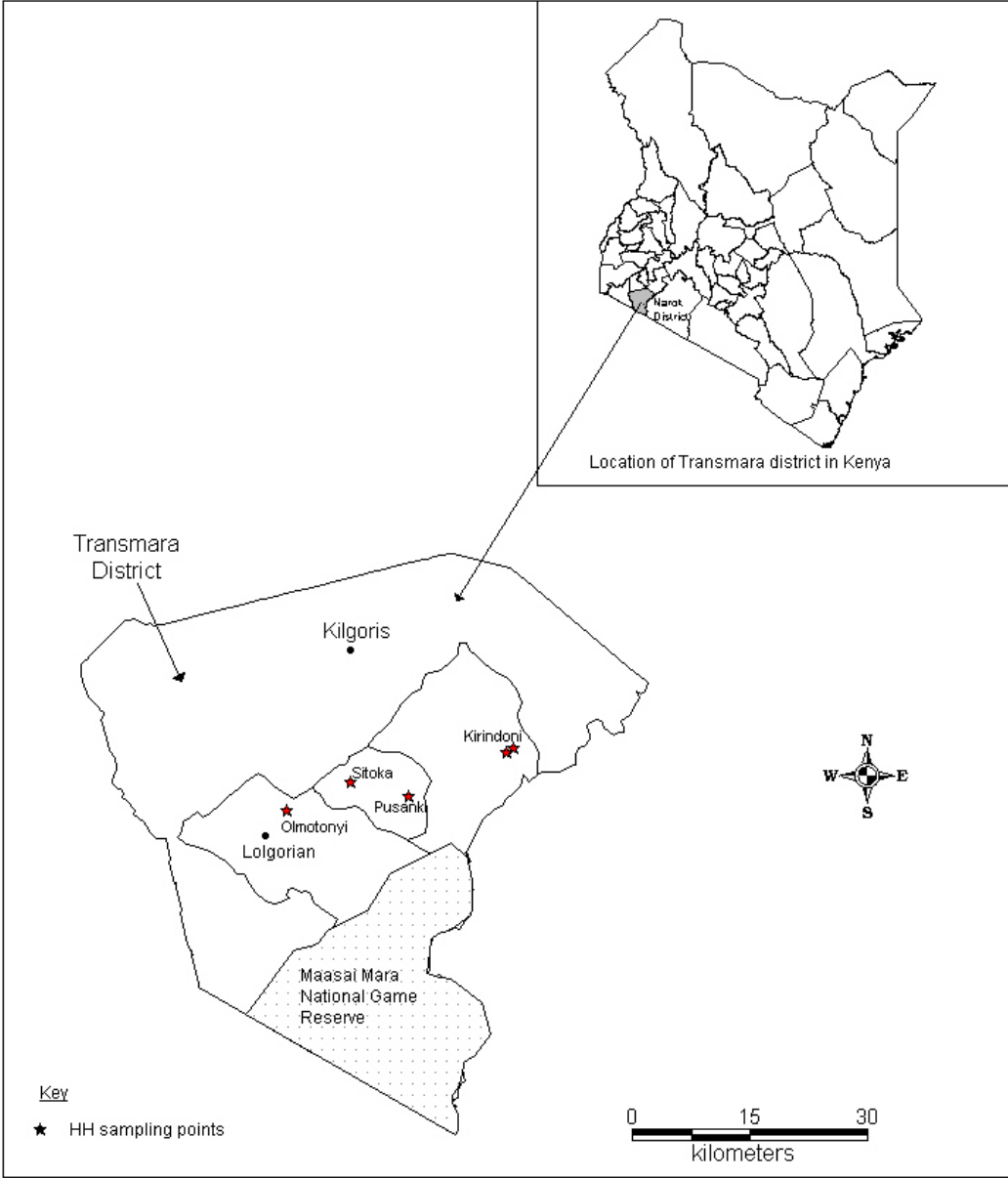
4.2 Methods of data collection and analysis

Both informal and formal survey methods were used to collect both secondary and primary data sets. In particular, literature reviews were of major importance in the collection of secondary data and information gathering.

Collection of primary data necessitated that both the informal and formal surveys are employed especially for purposes of data verification and triangulation. Informal surveys involved exploratory surveys for selection of study sites, key stakeholder / informant interviews and participatory rural appraisals (PRAs). A total of 17 focus group discussions (FGDs) were surveyed during the implementation of the research. To support the PRAs, formal surveys, using a structured questionnaire, were undertaken. A total of 158 house holds (HHs) or *bomas* were formally surveyed. Preliminary analysis of the collected data sets was carried out through descriptive statistics by use of SPSS software.

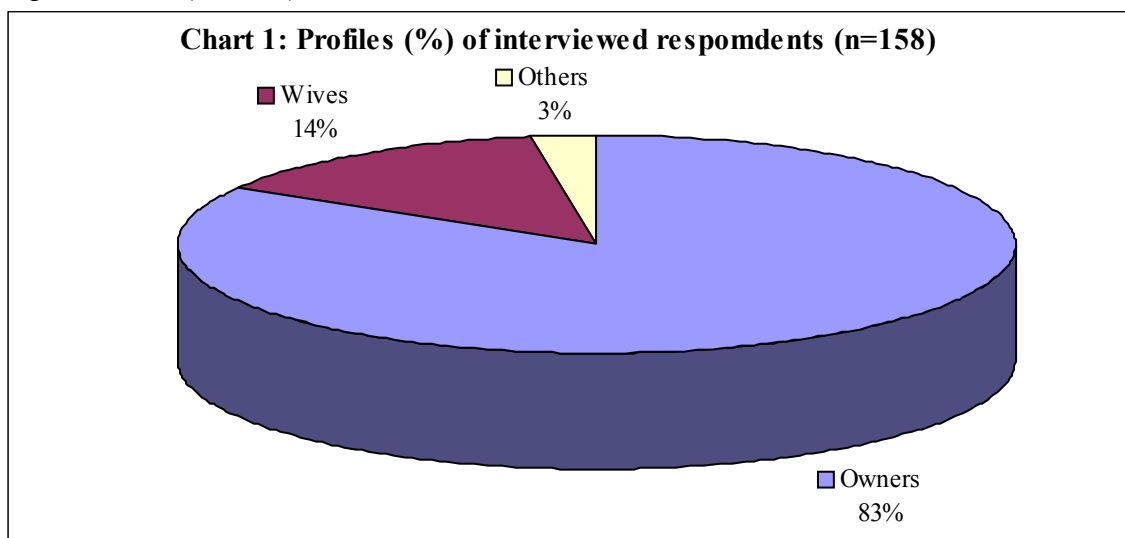
⁴ 1 AU = 450 kg of live weight

Figure 1: Study Area - Map showing HH survey areas in Transmara district

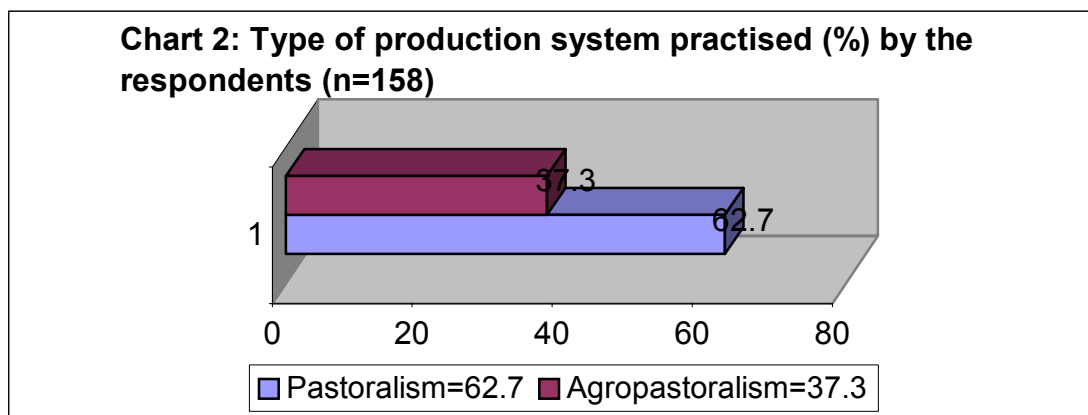


5. Some Findings 5.1 Respondents' socio-economic profiles

Some results from both informal and formal socio-economic surveys are alighted. During the informal surveys 17 focus group discussions (FGDs) were surveyed while 158 households (HHs) or *bomas* were interviewed during the formal surveys. The profiles of the interviewed respondents indicate that about 83% of the interviewees were the owners of the *bomas*, who were all male adults (Chart 1). At the same time about 63% of the respondents practiced pastoral production system while 37% were agropastoralists (Chart 2).



Notes: Owners=Male adults; Others=sons, herdsmen, etc; Source: HH Survey, October 2005

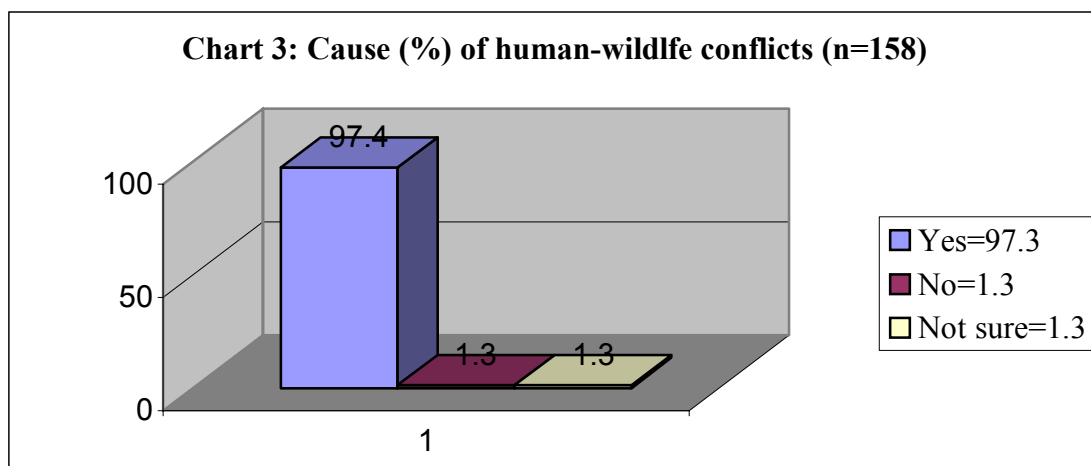


Source: HH Survey, October 2005

5.2 Wildlife interactions, constraints and extent of problems

The majority of those interviewed (97%) consented that wild animals were the main cause or source of wildlife-human conflicts in the Kirindoni division of Transmara district (Chart 3). Notwithstanding no reasons were given as to why the wild animals were the causes of conflicts and not the humans themselves. Through observations and probing however it appeared that the humans had actually and were still encroaching into the wildlife territories or migration corridors.

Chart 3: Cause / source of human-wildlife conflicts (%)



Source: HH Survey, October 2005

Over 14 different wildlife species were found loitering and residing in Kirindoni division of Transmara district. Of the 14 wildlife species listed in Table 1, elephants, followed by baboons, leopards, hippos, lions, hyenas, buffaloes, wild pigs and zebras, in that order, were the most destructive and dreaded wild animals in the study area. These wild animals were associated with different types of destruction depending on whether they are carnivores, herbivores or both.

For example, it was learnt that elephants destroy property, kill people and livestock and also scare and prevent people from carrying out economic and social activities. The

elephants also scare children thus making them unable to attend and return from school regularly. Hyenas and leopards were also mentioned for their destructiveness in that they preyed on small ruminants and other domestic animals. The wild pigs are omnivores and thus destroyed people's crops and preyed on small ruminants. The grazers, notably, zebras and members of the gazelle family were not blamed much for property destruction but for posing an undue competition with livestock for pastures.

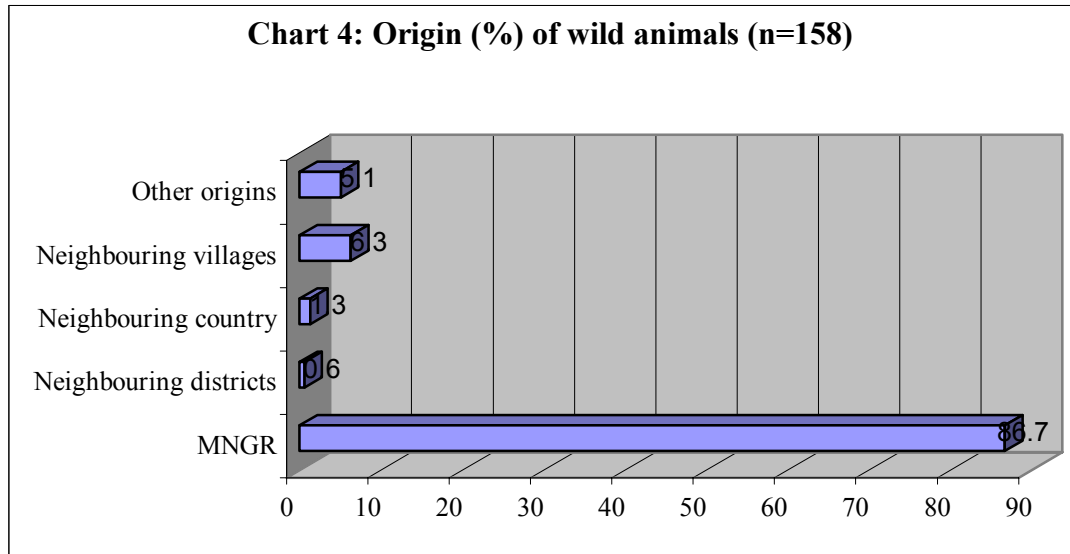
Table 1: Most destructive and dreadful wildlife species in Transmara (Kirindoni division), 2005

Wildlife species	# of FGDs	Min	Max	Mean	SD
Elephants	17	18.00	70.00	34.8824	14.1328
Baboons	16	4.00	30.00	15.3125	6.5393
Leopards	17	1.00	25.00	13.3529	6.2644
Hyenas	16	2.00	17.00	10.4375	3.5957
Jackals / foxes	6	1.00	8.00	4.1667	2.9269
Zebras	10	1.00	15.00	5.4000	4.1687
Bush bucks	6	2.00	6.00	3.5000	1.7607
Warthogs	2	3.00	7.00	5.0000	2.8284
Wild pigs	11	2.00	10.00	5.5455	2.4234
Monkeys	1	2.00	2.00	2.0000	0.0000
Buffaloes	9	2.00	10.00	6.1111	3.0185
Lions	7	5.00	25.00	13.1429	7.0102
Hippos	3	3.00	19.00	13.3333	8.9629
Porcupines	10	1.00	9.00	5.4000	2.3190
Other wildlife spp.	6	2.00	13.00	6.0000	4.4721

Notes: FGDs = Focus group discussions, SD = Standard deviation. Source: PRA Surveys, May 2005

Majority of the respondents (87%) indicated that the origin of the wildlife that resided at their environment was the Maasai Mara National Game Reserve (Chart 4). Further it was noted that the study area is actually not separated from the Mara Game Reserve by either any artificial or natural barriers. The result was, therefore, constant interactions between the local human populations and wildlife that ultimately lead to increased human-wildlife conflicts.

Chart 4: Origin of wild animals (%)



Notes: MNGR=Mara National Game Reserve, Source: HH Survey, October 2005

Abundance of wild game in Kirindoni division of Transmara district was represented by over 15 different wildlife species (Table 2). These animals ranged from grazers to herbivores and the most abundant ones include elephants, baboons, zebras, impalas, monkeys, buffaloes, leopards, hyenas, wild pigs, and topis respectively. It was also indicated that these wild animals preferred to live in different habitats ranging from bushes, to forests, bush-forests, open savannahs and riparian vegetation. These wild animals usually come out of their habitats towards evening (about 6.00PM) and into the night to look for their food and water, and return back to their habitats in the mornings (latest about 7.00AM).

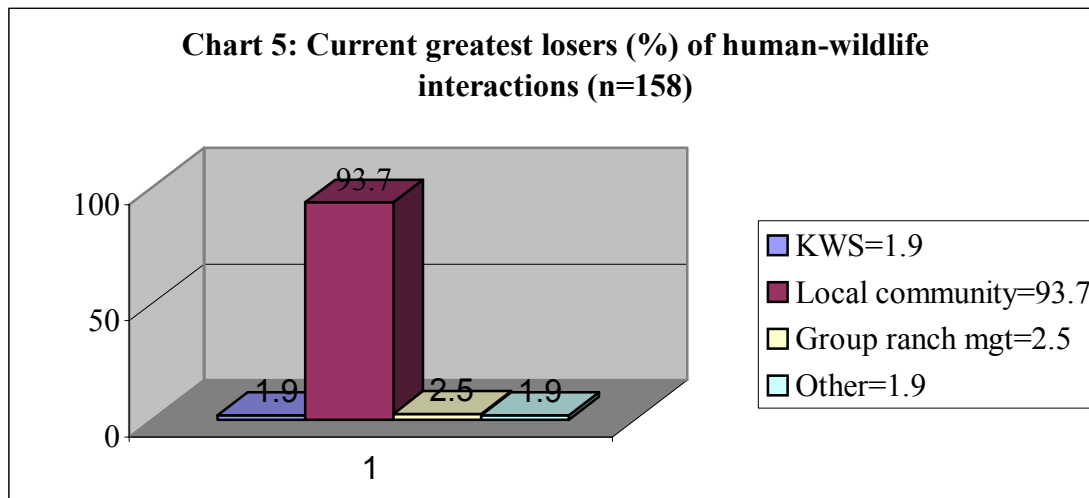
Table 2: Abundance of wildlife species in Transmara (Kirindoni division), 2005

Wildlife species	# of FGDs	Min	Max	Mean	SD
Elephants	17	10.00	28.00	20.5294	4.9638
Leopards	13	1.00	20.00	8.0769	6.26456
Jackals	8	1.00	6.00	2.8750	1.9594
Buffaloes	11	2.00	22.00	8.3636	5.9376
Baboons	15	5.00	40.00	17.2000	8.2045
Topis	9	1.00	15.00	7.0000	4.5000
Zebras	16	7.00	30.00	15.9375	6.6680
Wild pigs	12	2.00	15.00	7.0833	3.4761
Impalas	13	3.00	25.00	9.9231	5.2672
Warthogs	6	3.00	5.00	4.1667	0.9832
Hyenas	16	2.00	18.00	7.9375	4.4493
Bush bucks	6	2.00	5.00	3.8333	1.1690
Water bucks	3	1.00	8.00	3.6667	3.7859
Porcupines	4	1.00	2.00	1.2500	0.5000
Monkeys	4	7.00	11.00	9.5000	1.7321
Other wildlife spp.	4	11.00	21.00	15.2500	4.6458

Notes: FGDs = Focus group discussions, SD = Standard deviation. Source: PRA Surveys, May 2005

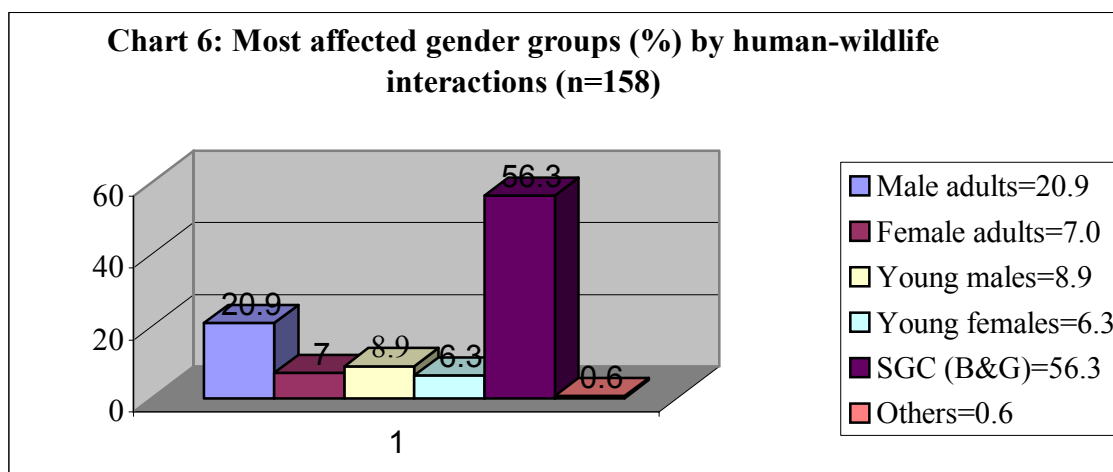
The costs incurred by the property owners were in kind (mostly in terms of property destruction), diverse and insurmountable. As observed in Chart 5, respondents (94%) were in consensus that the most affected losers as a result of wildlife interactions were the local communities. It was also agreed by the majority of the interviewees that the school-going children [both boys and girls] (56%) followed by the male adults (21%) were the most affected gender groups by wildlife (Chart 6). The effects were occasioned by the wildlife interactions with the humans as the groups carried out their normal daily activities.

Chart 5: Current greatest losers (%) as a result of human-wildlife interactions



Notes: ^a Group ranches = Management Committee; ^b Other = NGOs, Ministry of Wildlife and Natural Resources, Mara County Council, Local politicians, etc; Source: HH Survey, October 2005

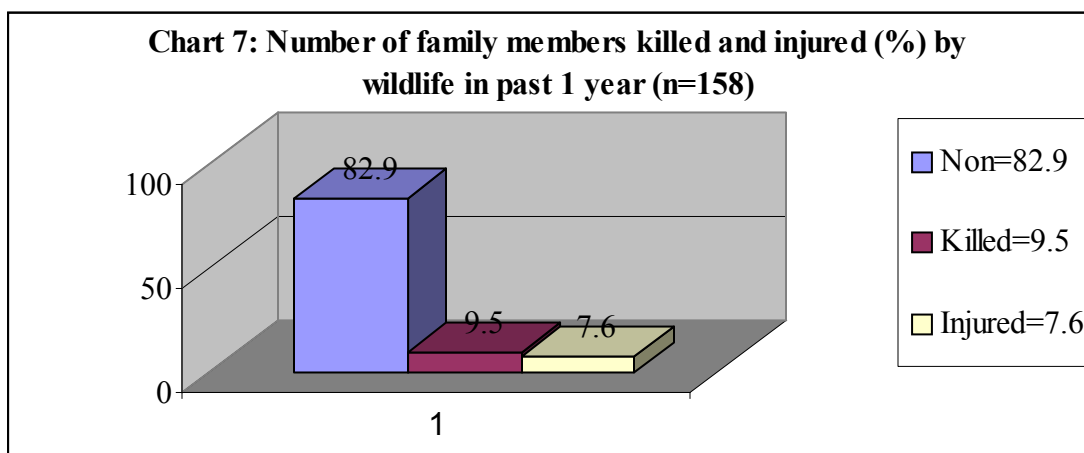
Chart 6: Most affected gender groups (%) from human-wildlife interactions



Notes: SGC (B&G)=School-going children (boys & girls); Other = Non school-going children; Source: HH Survey, October 2005

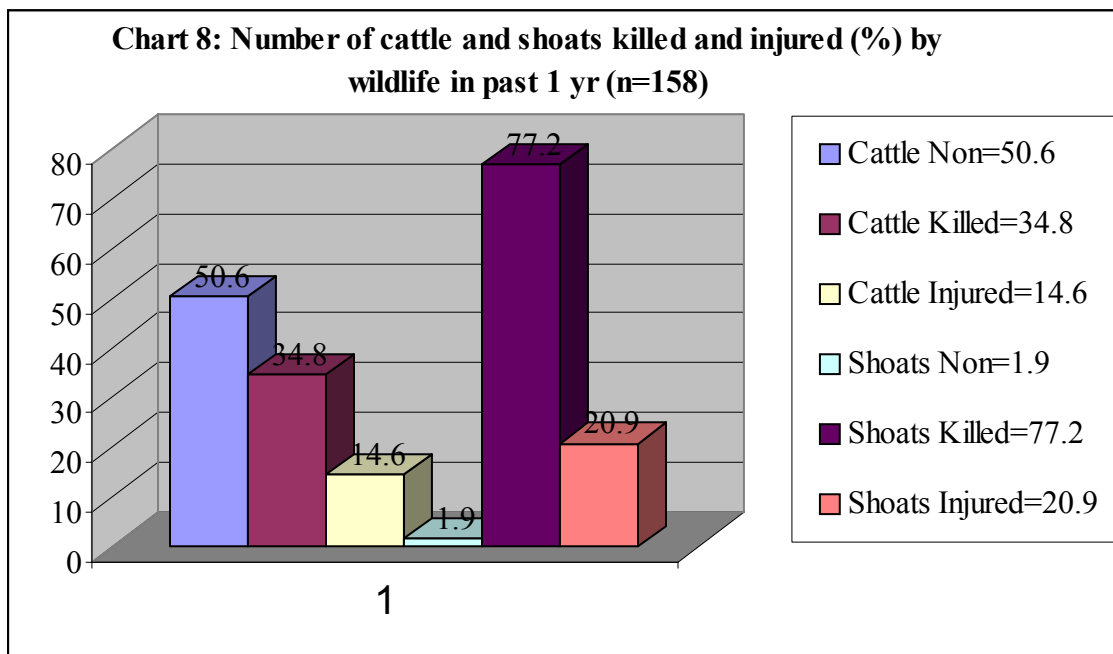
As already mentioned, the costs incurred were in kind. For purposes of demonstration, Charts 7 and 8 show what kinds of losses that were incurred by the respondents during the past one-year preceding the survey (undertaken in October 2005). The losses were in form of human deaths and injuries, and livestock deaths and injuries. During the stated one year, about 9% of the respondents indicated that they lost at least one family member through death caused by marauding wildlife, while about 8% indicated that at least one family member was injured by the wild animals (Chart 7). In the same token, about 35 and 77% of the respondents reported that their cattle, and sheep and goats (shoats) respectively were killed by wild animals within a period of one year.

Chart 7: Number of family members killed and injured (%) by wildlife in past 1 year



Source: HH Survey, October 2005

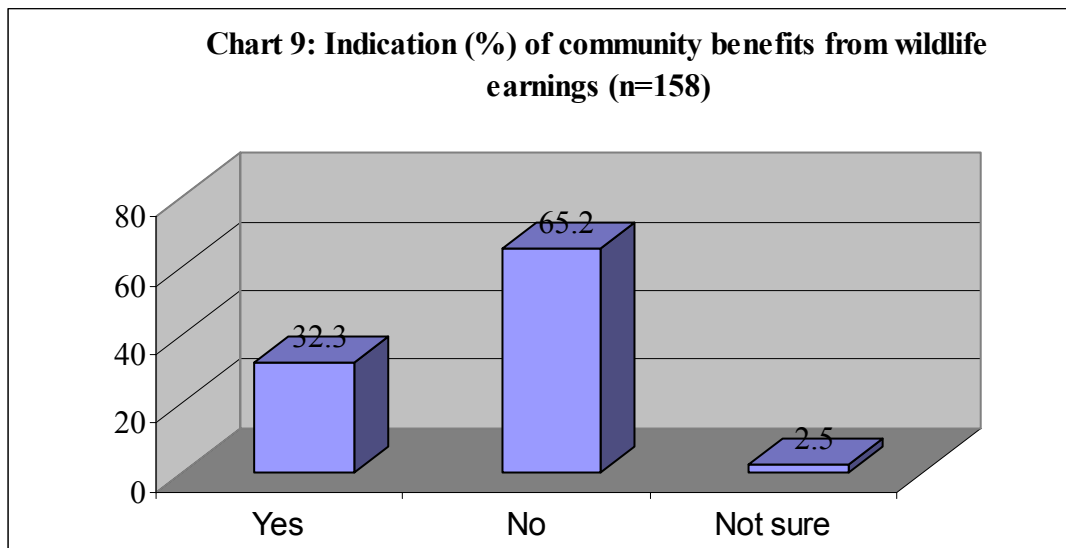
Chart 8: Number of cattle, and sheep and goats (shoats) killed and injured by wildlife in past 1 year



Source: HH Survey, October 2005

Respondents gave mixed reactions as to whether they have been receiving and continue to receive benefits from wildlife earnings (Chart 9). Almost two-thirds majority (65%) indicated that they have benefited but another one-third majority (32%) denied receiving any benefits at any given time. Those who admitted receiving of benefits indicated that initially they were receiving some benefits in cash but most of the benefits were used to initiate infrastructural development such as roads and bridges, and social services (building of dispensaries and schools) as well providing bursaries for school children and payment of medical bills for the poor households.

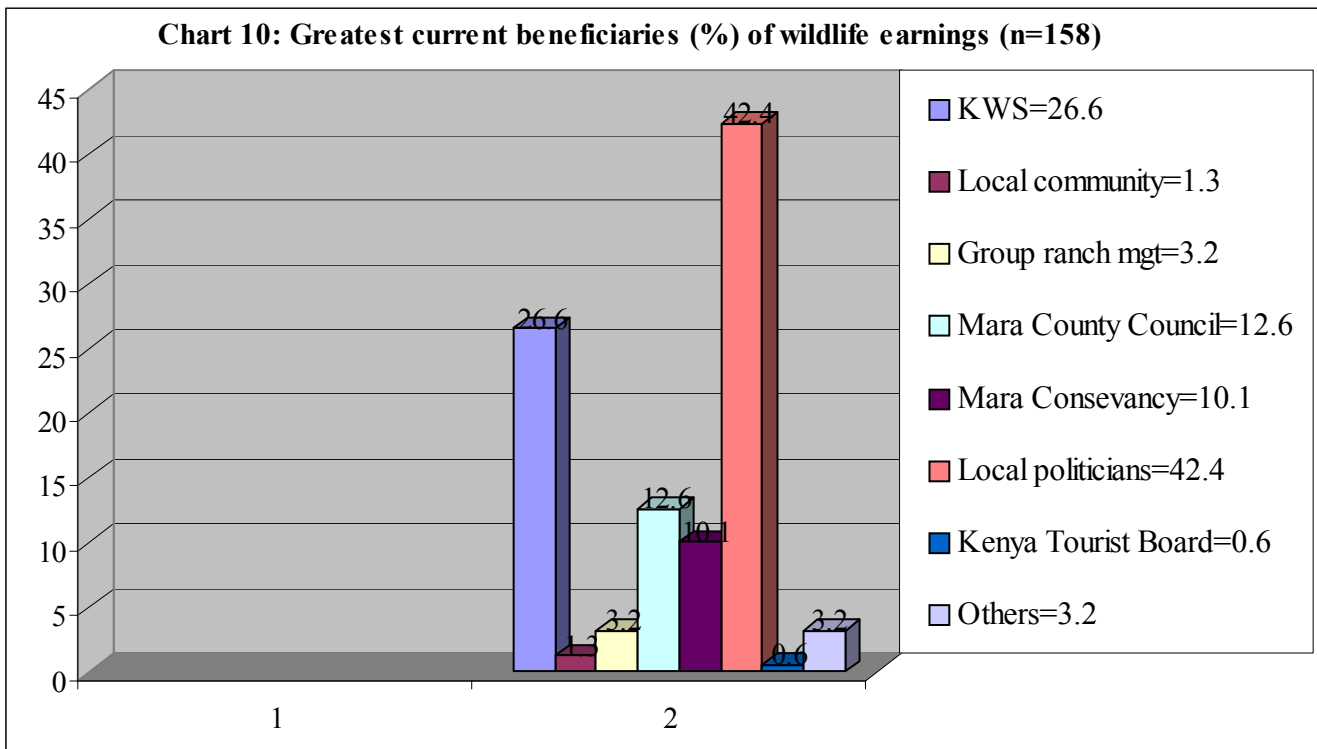
5.3 Potential gains and benefits from wildlife interactions



Source: HH Survey, October 2005

Given that many of the respondents claimed that community benefits from wildlife proceeds had stopped, respondents were asked to give their perceptions as to what had happened with the wildlife earnings meant for local communities. It was indicated that the benefits intended for local development were now benefiting other institutions and local politicians. According to 42% of the respondents (Chart 10), the current greatest beneficiaries from the wildlife proceeds were the local politicians (the local councilors and the Member of Parliament). Kenya Wildlife Service (27%) and Mara County Council (13%) followed the local politicians as the greatest beneficiaries. The local community, who interacts with wildlife on daily basis, was the least beneficiaries.

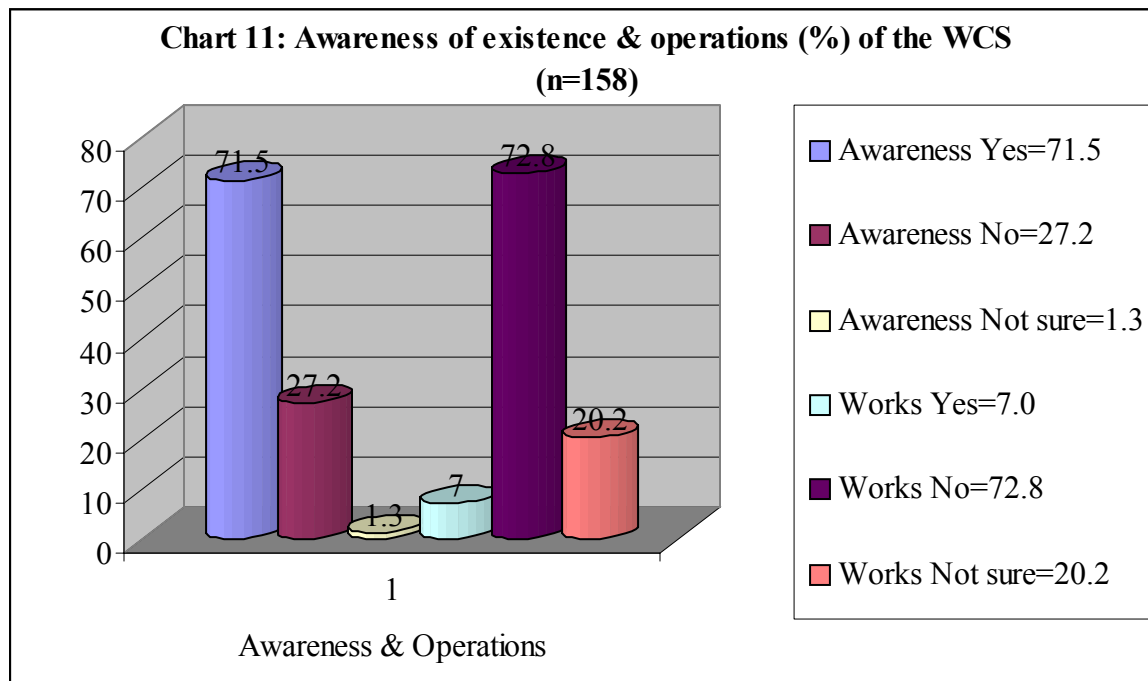
Chart 10: Greatest current beneficiaries (%) from wildlife earnings (n=158)



Note: Group ranches = Management Committee; Other = NGOs, Ministry of Wildlife and Natural Resources, Curio and Tour operators, Hotels & Lodges, etc; Source: HH Survey, October 2005

5.4 Wildlife compensation schemes (Acts)

Chart 11: Awareness of existence and operations of the Wildlife Compensation Schemes (WCS) [n=158]

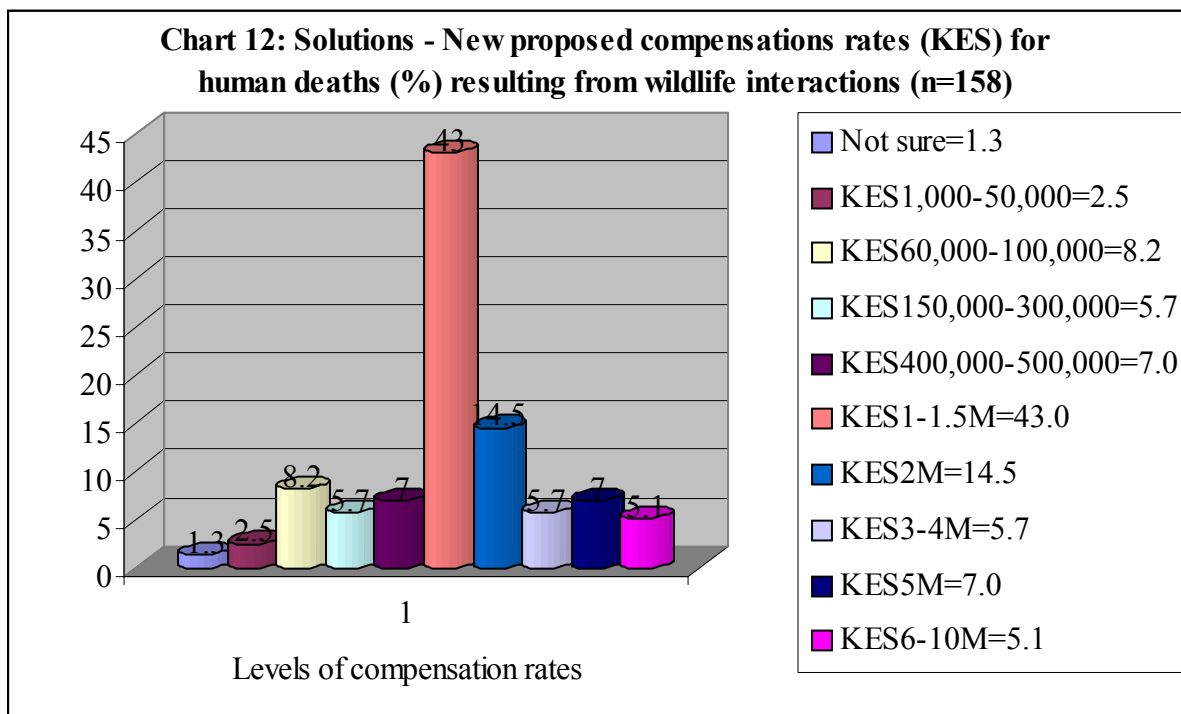


Source: HH Survey, October 2005

Respondents were asked whether they were aware of the existence of the Wildlife Compensation Schemes and whether they knew how the schemes operated. Whereas majority of the respondents (72%) were aware of the existence of the WCS, another big number of respondents (73%) did not know how the schemes are operated (Chart 11). Neither did the respondents know why the schemes were there for and what items were covered for compensation. The respondents thought that the WCS just existed on paper. However in many cases, respondents have heard that human deaths could be compensated for a maximum of KES30,000/=(or equivalent to US\$375 at US\$1 to KES80/=). Further, the compensation is realized after long, tedious and unfriendly processes, which only discouraged the affected victims from putting in a claim.

5.5 Potential new proposals (solutions) and way forward

In spite of the foregoing, the local respondents indicated that they were prepared to have the WCS continue *al beit* with modifications. The respondents were clearly dissatisfied with the current going compensation rates and the few items covered under the compensation scheme. As one of the solutions to minimize the on-going human-wildlife conflicts, the respondents indicated that they would like to see the compensation rates increased and the list of items covered for compensation extended. The expanded list should cover human deaths and injuries, cattle deaths and injuries, sheep and goat deaths and injuries, and crop and other property destruction. The suggested increased compensation rates for human deaths as a result of wildlife killings are shown in Chart 12. It is clearly indicated that 43% of the respondents would want to see human death compensated for KES1-1.5M, while 15% of those interviewed wanted compensation increased to KES2M for human killing by wildlife.



Source: HH Survey, October 2005

In addition to increased compensation rates and expansions of items covered for compensation, respondents listed various strategies (Table 3) they wish to be undertaken to minimize the conflicts. One of the most important strategy is to put up a perimeter fence (40%) around the Maasai Mara National Game Reserve to ensure that the wild animal are contained in their designated territories. This should be combined with getting rid (28%) of wildlife using various ways and increasing of wild life compensation rates (27%).

Table 3: Suggested conflict minimizing strategies, 2005

Strategy	# of FGDs	Min	Max	Mean	SD
Get rid of wildlife	13	5.00	65.00	27.6923	19.8552
Put perimeter fence	15	5.00	100.00	39.9333	32.5170
Increase direct compensation	12	7.00	65.00	27.5000	18.3179
Increase social amenities	2	3.00	22.00	12.5000	13.4350
Guard against destructive wildlife, including killing	10	4.00	31.00	16.3000	8.5251
Initiate eco-tourism activities	5	4.00	17.00	11.0000	5.4314
Other solutions	8	4.00	60.00	21.0000	18.2365

Notes: FGDs = Focus group discussions, SD = Standard deviation; Source = PRA Surveys, May 2005

The respondents also went ahead and suggested means of actualizing the new proposals (Table 4). First and foremost, respondents (55%) indicted that for the new proposals to work; they must be incorporated into policy. This obviously implies that the current wildlife policy has to be reviewed to take up the suggested views. Some of the views to be incorporated include making direct cash payments (37%) to the ranch management and local communities, increasing and expanding activities for social amenities (27%), and removing unnecessary middlemen such as the politicians (25%) from the processes of delivering wildlife earnings to the grass root levels.

Table 4: Suggested means of actualising that new proposals are implementable, 2005

Means of implementing proposals	# of FGDs	Min	Max	Mean	SD
Review policy	14	10	90	54.71	25.29
Develop eco-tourism activities	10	10	85	24.90	24.32
Increase social amenities	6	4	100	27.00	36.16
Direct payment to ranches and communities	6	6.00	90.00	37.1667	28.1170
Remove Mara Conservancy	1	9.00	9.00	9.0000	0.00
Remove politicians	1	25	25	25.00	0.00
Other solutions	10	7	90	26.60	24.81

Notes: WCS = Wildlife Compensation Schemes, FGDs = Focus group discussions, KWS = Kenya Wildlife Service, MOIT = Ministry of Information and Tourism, SD = Standard deviation; Source = PRA Surveys, May 2005

6. Discussion and Conclusions

From some of the results of the research that was carried out, it is established that the main cause of the prevailing conflicts in Transmara district is wildlife as well as humans. According to the researchers' observations, humans have actually encroached into the traditional wildlife habitats. The Maasai people of Transmara appear to have experienced cultural transformation. Complaints of crop damage in the wildlife dispersal areas surrounding the MNGR is actually a reflection of the changes in socio-economic activities of the Maasai people who were previously associated with pastoralism (Chiemelu, 2004).

The source of the wildlife was found to originate from the Maasai Mara National Game Reserve. The findings of this research tend to confirm the previous assertions. For example, it has been shown that some of the greatest conflicts for food and space between livestock and wild herbivores have been observed to occur on the grasslands and shrub lands of the southwest and southeast regions of Kenya. The competition has been serious especially among cattle, shoats, wildebeest, buffalo, kongoni, burchell's zebra, impala, grant's and Thomson's gazelle (Andere *et al*, 1981). Direct conflicts between wildlife and agropastoralists have manifested themselves in damage to structures (e.g. fences, watering points, and homesteads), and in human or livestock injuries or deaths (Peperkamp, 1986; Manundu, 1997). The damages and deaths caused

and injuries inflicted by wildlife represent major costs and losses incurred by local communities.

Among the various wildlife stakeholders, it was the local communities (mainly the Maasai people) who had been observed to be the people mostly on the receiving end. In fact, the observation pointed out that the local communities received the least benefits when it came to benefits accruing from wildlife earnings trickling down to the grass root levels. For the communities to get the wildlife benefits, they had to wait for windfall handouts from the local county councils that manage wildlife on their behalf.

It was also observed that although many people were aware of the existence of the Wildlife Compensation Schemes, they did not know how the schemes worked or operated. Respondents thought that the schemes were just rules on paper that never helped the affected communities. Despite the stated facts, many respondents were for the continuation of the compensations schemes but comprehensive reviews of the schemes were required. The reviews would include but not limited to increased compensation rates, expanding items covered under compensation and making the schemes more workable and transparent. Residents neighbouring conservation areas have often expected relief from costs associated with living with wildlife through adequate and prompt compensation (Chiemelu, 2004).

Essentially, the WCS have been one major method through which the benefits could reach the grass-root communities. The Schemes were established in 1976 by the GOK, whereby affected people could claim monetary compensation for crop damage, human and livestock injury / death, and damage to infrastructure such as buildings and fences. Although some sections of the Compensation Schemes were abolished by an Amendment Act of 1989 without consultations, it has not been clear how the remaining parts of the scheme operated. Even before the amendment, compensation due to indirect damage, e.g. loss of livestock from parasites and diseases transmitted by wildlife and loss of grazing and water by wildlife were rarely considered. The functioning of the Compensation Schemes is unknown to many given that the only compensation

remaining is that of human injury or death. Besides, the compensations involve lots of bureaucratic procedures and they are not well publicised. These and related problems result in many agropastoralists not reporting damages, injuries, and deaths caused by wildlife. However, once the claims are filed and accepted, the compensations are usually delayed and are much less than had been claimed, if payments follow at all. So even if the schemes may be considered necessary, it may not be a sufficient solution to damages and other related conflicts caused by the wildlife (Peperkamp, 1986; KWS, 1990; Nduta, 2003). Essentially, the local people were not oblivious to the value of wildlife. Hence, the problems posed by wildlife tended to obscure related benefits to the communities in the study area. This suggested to an almost unanimous view from respondents that wild animals provided no benefits but destruction to the people.

In fact within the bigger picture, one of the statutes in the current version of the Wildlife Act indicates that 'wildlife is managed and conserved so as to yield to the nation in general and to individual areas in particular, optimum returns in terms of cultural, aesthetic and scientific gains as well as such economic gains as are incidental to proper management and conservation'. Within the limits of the Act, it is implied that KWS's roles include, but not limited to, initiating government policy on wildlife conservation, managing national parks and reserves on behalf of the society as a whole, advising other arms of government (central and local) and landowners on how to manage and conserve wildlife, and helping farmers and ranchers protect crops and livestock from large mammals. But in reality this has not been practiced. Instead, relationships between landowners and KWS have been very sour over the past 25 years. The only remedy to such conflicts is to bring stakeholders together and determine away forward to review and formulate a new policy which recognizes reality and integrates wildlife into the economy of the local communities and other landowners with which the wildlife shares the land (Mbaria, 2003; Parker, 2003; Chiemelu, 2004).

Nevertheless, in addition to suggested ways of mitigating conflicts (Manundu, 1997), many suggestions have been raised in the past on how to resolve human-wildlife conflicts. For example, Maina (1994) suggested that in order to avoid unnecessary

conflicts from competition over natural resources, multiple land uses have to be identified and harmonised. Wildlife-related activities (e.g. tourism, ecotourism, controlled hunting, culling and marketing of wildlife products) should become accepted land use practices (Okech, 2005). If wildlife is to continue having smooth access to the future rangelands, which are now being brought under direct private ownership and management (through land tenure reforms and access rights), the game animals must yield returns commensurate to returns from livestock and other agropastoral activities. Agropastoralists should be rewarded properly for coexisting with wildlife and adequately compensated for damage, stock losses, loss of human life or injury and loss of grazing and water attributed to wildlife. Some of the far reaching solutions to conflict resolutions provided by the respondents included getting rid of wildlife by every means possible. This suggestion appears to concur with Chiemelu (2004) that current consensus among most communities living around conservation areas is that both people and wildlife would be better off if wildlife has its own separate area, away from human settlement and activities.

But, the local communities (represented by the surveyed FGDs and HHs) have come into realisation that they are on a clear transition path – moving from the nomadic pastoralism to somewhat sedentary agro-pastoralism. They have also recognised the fact that wildlife was and will still form an integral part of their ecosystem. They have, therefore, accepted to live with the problems (conflicts) caused by wildlife. But, on condition that there will be harmonious and equitable sharing of wildlife resources. This has to be actualised through policy review (Acts of parliament). Other researchers (Chiemelu, 2004; Okech, 2005) have also advocated for formulation and implementation of community friendly policies to revert conflicts to cooperation.

Meanwhile it is proposed that in order to contribute to poverty reduction amongst the Maasais of Transmara, the GOK, KWS, Mara County Council and other wildlife stakeholders should converge and assist the local communities in mediating human-wildlife conflicts. At the same time, the stakeholders should assist the local communities in stimulating and initiating both foreign and domestic private as well as

public investments in the study area. This will include but not limited to income generation activities such as ecotourism. Some of these types of activities (ecotourism, perimeter fencing, employment of locals, community managed game sanctuaries, etc) involving local communities have already been started (in other areas like Shimba Hills of Kwale district, Mpunguti Marine Reserve in South of Mombasa, Ilangwesi Tourist *Bandas* in the escarpment of Laikipia district, Amboseli and Mt. Kenya National Parks) and are succeeding (Chiemelu, 2004; Okech, 2005).

7. Relevance of the Research to Contemporary Policymaking

This research is intended to provide empirical evidence to support a broad-based wildlife policy review. The research is supposed to show empirically the conflicts emanating from the wildlife and human interfaces or wildlife interactions with the agropastoralists. For example, the research has identified the major losers and beneficiaries of the wildlife earnings as a result of the interactions; the strengths, weaknesses, opportunities and threats of the prevailing WCS; the suggested solutions for mitigation of the conflicts and the way forward towards wildlife policy review. Contemporary policymaking entails, among other things, to make consultations with relevant stakeholders to gather views for incorporation into policy. Hence, findings of this research will contribute towards the gathering of the required views.

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