

RESOURCE USE CONFLICTS RESOLUTION AND POVERTY ALLEVIATION AMONG PASTORAL COMMUNITIES IN SAMBURU COUNTY, KENYA

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This paper examines some of the issues behind frequent occurrence of conflicts over of rangeland resources. The focus is on cattle rustling and wildlife menace that have had adverse effects on food production in among pastoral communities in arid and semi-arid lands making pastoral communities more vulnerable to climatic perturbations. There is a need, therefore, to find lasting solution to these problems in order to make the inhabitants less dependent on relief supplies and objectively utilize rangeland resources sustainably. The objective of the study was to assess the impact of human – human conflict on household production and on the ability of the Samburu pastoralists to manage risks. This study was carried out in Kirisia, Lorroki and Baragoi sub-counties of Samburu district. A survey was conducted using a structured questionnaire interviews to key informants and group discussions. A total of 248 households were surveyed, 30 key informants interviewed and 7 group discussion conducted. Data analyzed involved descriptive statistics and test of relationships were done using correlation and regression analysis, using statistics Package for the Social Sciences (SPSS). Results indicated that, crop damage by wildlife was significant. Similarly displacement of people due to insecurity and had the greatest impact on households' food security. It was evidence that "top – bottom" approach was mainly adopted in attempting to resolve conflicts. The provincial administration played a leading role in decision making which had proved ineffective. The pastoralists' dependency on livestock for livelihood and low enterprises diversification had made them vulnerable to environmental and human risk. There was significant relationship between resources use conflict resolution and risk management ($r= 0.198^{**}$, $P<0.02$), also a highly significant ($r= 0.210^{**}$, $P<0.01$), relationship between asset diversification and risk management. It is recommended that participatory approach where all stakeholders are involve on conflict resolution and pastoral communities should diversify their production activities to reduce dependence on livestock to alleviate poverty and enhance risk management.

Key words: Resources, Conflict, Poverty, Pastoralists and Risk Management

INTRODUCTION

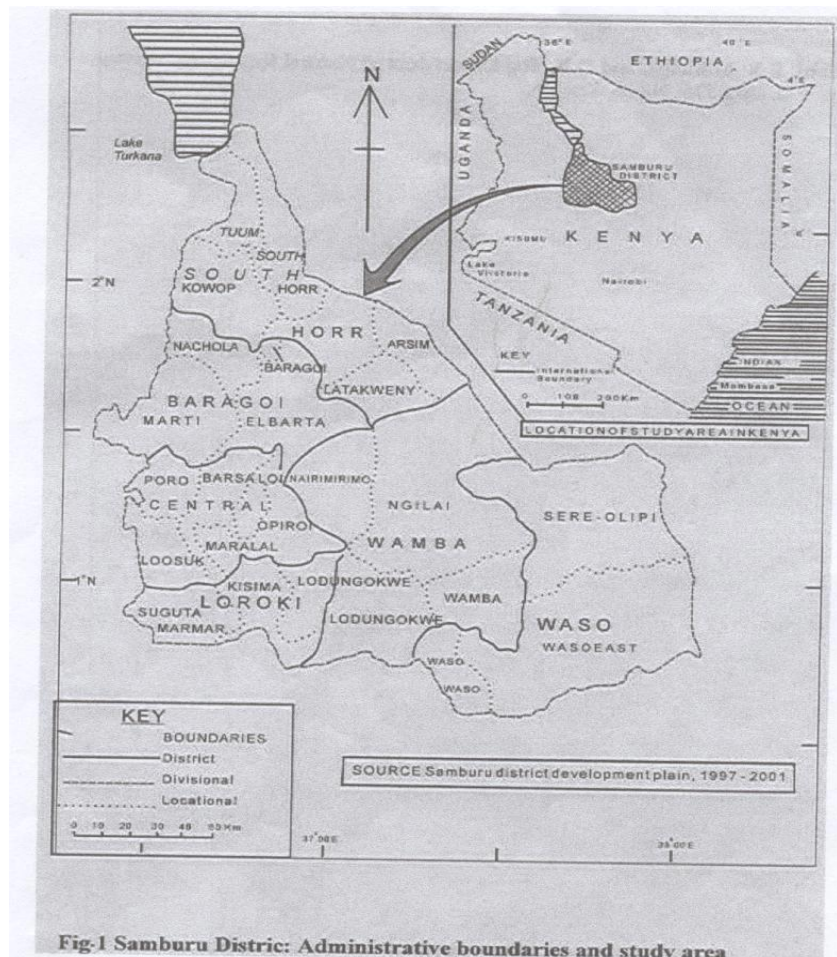
Conflicts over use of rangeland resource such as land, water, pasture and forest have for ages been widespread. Conflicts over natural resources have intensified due to increase in human population causing concomitant increase in demand for goods and services (*Child et al., 1984*). Natural resources conflicts emanates from egocentric attitudes and lack of knowledge on resources use rights. Mutiru (2000) contends that a conflict is a common feature of any resources use system. Acknowledge of this fact is a prerequisites too sustainable resources management. Conflicts have led to reduced risk coping strategies such as herd diversification, stock migration and activities including cultivation of arable land, livestock trading and food storage (*Aboud, et al., 1996*). Mobility is an essential component of risk management strategies because it enables the use of spare and widely distributed resources whose availability and quality vary in time and space (Maranga 1999). In the process, they enforce system of exchange with distant relatives and maintain access to pasture in diverse locations (Toure, 1985). Restriction of livestock mobility has resulted in conflicts as many pastoral communities feel denied the right to grazing area they formerly used (*Aboud, et al., 1996*). Irrigated agriculture has also played a role in the loss of grazing land (*Farah, 1990*).

The broad objective of this study was to investigate the impacts of cattle rustling and human – wildlife conflicts on household production, which determine the level of risk management among pastoral communities. The specifics objectives were to investigate why these conflicts are frequent, when they occur, and how they are resolved. The study determined the influence of frequent resources use conflicts with a view to developing interactions that effectively

address household production activities, which will enhancement risk management options through successful conflict resolution approaches tat are participatory in nature.

STUDY AREA

The study was carried out in Samburu County Kenya. Samburu County lie between latitudes $0^{\circ} 40'N$ and $2^{\circ} 50'N$ and longitudes $36^{\circ} 20'E$ and 36° and $38^{\circ} 10' E$ (Fig.1). The County is divided into six sub-counties (formerly divisions) namely: Wamba, Waso, Nyiro Baragoi, Kirisia and Lorroki. Three sub-counties were selected for the purpose of this study. These include: Baragoi, Kirisia and Lorroki (Republic of Kenya, 2011). Selection criteria were based upon land use and their geographical location.



Samburu County experience a bimodal rainfall regime. The long rainfall seasons begins in March and ends in May. Short rains occur between October and December. January and February are the driest months. Rainfall varied between 250 – 500 mm in the semi arid and arid areas and 700 – 1200mm on plateaus and mountains respectively. Temperature in the district vary with altitudes and are generally between $24^{\circ}C$ (mean minimum) and $33^{\circ}C$ (mean maximum). The human population of the district according to the 2009 census is approximated to be 200,000. Kirisia sub-county accounted for 27% of the district's population. Lorroki and Baragoi sub-county represented 18% and 14% of the district's population respectively.

Mixed farming is practiced in Samburu and was concentrated in Kirisia and Lorroki sub-county which receive relatively high rainfall (average of 700 mm per annum). Crops grown included Wheat, barley, maize, beans, tomatoes and vegetables. Livestock raised in the division were beef, cattle, sheep, goats, camel and indigenous poultry. Pastoralism was dominant in Baragoi, which was drier than the others. The major wildlife species in the district are elephants, buffalo, zebra and other plain antelopes. This resource is perhaps the most important with many wildlife species found in the open grassland.

Samburu Game Reserve. Mathew Ranges in the southeast, Nyiro and Kirisia Plateaus in the central part of the County constitute important wildlife niches in the district.

Diverse flora ranging from mixed tree species on the Mathew Ranges in Wamba sub-county to open and bushed grasslands in the plain occur. The Samburu Game Reserve, which occupies considerable parts in the south and Lorroki and Kirisia sub-county, reflects a rich diversity of indigenous Acacia trees and grass species. Cedar plantations occur on the Kirisia plateau and mountain ranges. Over harvesting of the cedar forest has opened the area to cultivation and livestock grazing.

DATA COLLECTION

Data was collected using a structured questionnaire with open –ended questions administered to 248 households (10% of the total number of households in the three divisions of study). Oral interviews and group discussion were carried out. The interview involved 30 key informants whereas 7 – focus group discussion were executed in seven locations of the study sub-counties. This approach was used to provide opportunity for a wider coverage of the population sampled. Elders, chiefs, councilors, church leaders and youth representative participated in – group discussion. The study sample of 248 households were selected randomly using random procedures.

DATA ANALYSIS

Sample data was analysed by mean of the Statistical Package for Social Science (SPSS) computer software. A correlation analysis was run to determine the nature of the relations among the variable shown in Fi.2, and regression analysis was also run to determine the most and the least significant factors (variables) that determine poverty (Table 4 and 5, respectively).

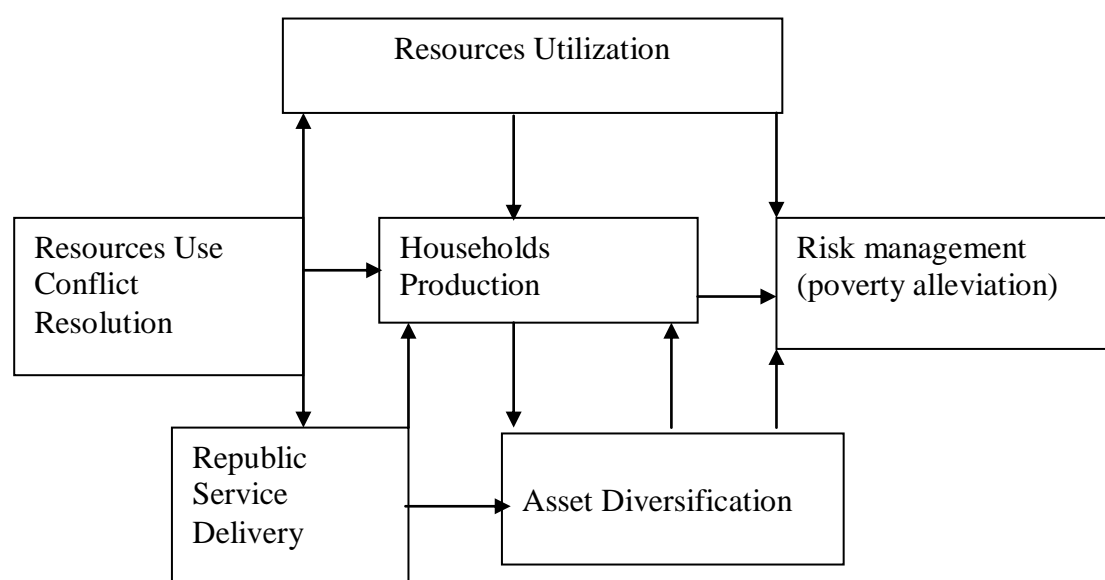


Fig.2 Conceptual framework showing the relationships among variables. The arrows indicate the effect of the independent and intervening variables to dependent variable.

RESULTS

Drought was ranked as a major environment risk, while livestock disease, particularly tick borne disease and cattle rustling were also prevalent in the three sub-counties of Kirisia, Lorroki and Baragoi (Table.1). Cattle diseases and frequent drought accounted for high livestock mortality rates on livestock in the three locations. In Kirisia sub-county, crop damage by wildlife was another risk farmers experienced. This is done mainly by elephants. The other area of resources conflict is competition between livestock and wildlife for water and pasture during times of scarcity, zebra, buffalo need the same resources during drought periods (Table .2)

Table 1: Ranking of risks

Sub-county	Risks	Rank
Kirisia	Drought	1
	Crop damage	2
	Cattle raids	3
	Livestock disease	4
Lorroki	Drought	1
	Livestock disease	2
	Crop damage	3
Baragoi	Drought	1
	Cattle raids	2
	Livestock disease	

Table 2: Ranking of resources use conflicts by division

Sub-county	Conflicts type	Rank
Kirisia	Damage by wildlife	1
	Cattle raids	2
	Pasture and water	3
Lorroki	Damage by wildlife	1
	Pasture and water	2
	Cattle raids	1
	Pasture and water	2

Cattle rustling was eminent in Baragoi and Kisiria and was one of the means of restocking livestock, particularly after serve drought when households lose high number of livestock though other factors have contributed to the increase in incidence of cattle rustling (Table 3)

Table 3: Factor contributing to cattle rustling

Cause	Frequency	Percent
Building lost herd during droughts, raids	33	13.3
Sales for cash	21	8.5
Normal practice by morans	37	14.9
Misunderstanding among communities	13	5.2
Access to guns	56	22.6
Not applicable	88	35.6
Total	248	100

Source: Field survey, 2007

Though illiteracy and unemployment (Table 4) among the youth in Samburu communities has not been indicated as a factor, but could be a major contributing factor to escalation in incidence of cattle raids. There is high number of school dropouts attributed to insecurity (caused by cattle raids), poverty, non-sedentary life-style of the pastoralists and political incitement. Majority (85.5%) of the respondents had no formal education and hence unemployed.

Table 4: Respondent's education levels and number of household members employed

Education level	Frequency	Percent	No employed	Frequency	Percent
No formal education	212	85.5	0	167	67.3
Primary 1 – 4	10	4	1	61	23.6
Primary 5 – 8	17	6.9	2	14	5.7
Secondary	5	2	3	2	0.8
Post – secondary	4	1.6	4	4	1.6
Total	248	100		248	100

Source: Field survey,, 2007

High unemployment rates would encourage the youth's involvement in other illegal activities such as cattle raids and hunting for trophies. Sixty seven percent of the sampled population had no member of the households employed outside pastoralism, 23.6% had one, 5.6% had two, 0.8% had three and 1.6% had for members of the households employed in either public or private sectors.

The Samburu communities depend on livestock for their livelihood. Considerable portion to the sampled population (85.9%) had two investment in other income generating activities and relied on the sale of livestock for all household needs such as purchase of food, payment of school fee and health services. The apparent scenario in which communities rely heavily on livestock for basic needs results in people's inability (they era poor) to manage both environmental and human risks. The top – bottom approach was the basic mode of conflict resolution with major decision being made by provincial Administration and Kenya Wildlife Services personnel on cattle rustling and human – wildlife conflicts respectively. But the results from the correlation analysis indicated that effective conflicts resolution would enhance risk management ($r = .198$, $P < .02$), that is there was significant ($P < .02$) relationship between resources use conflicts resolution and poverty alleviation (risk management) (Table 5).

The regression analysis results indicated that those resolution approaches to conflicts were ineffective as shown with a small change in R^2 of 0.007 (from 0.354 to 0.361) (Table 6).

Only 0.75 of risk management is explained by conflict resolution. This implied that methods used in conflict resolution contributed very little terms of poverty alleviation

Table 5: Correlation analyses matrix

Variable	Resources	Houpro	Reu	Pusede	Assetdiv	Riskmana
Reuscore	1.000					
Houpro 0.010	(0.874)	1.000				
Reu	0.54 (0.396)	0.026 (0.682)	1.000			
Pusede	0.198** (0.02)	0.038 (0.551)	0.055 (0.754)	1.000		
Assetdiv	0.210** (0.02)	0.061 (0.337)	0.070 (0.273)	0.258** (0.01)	1.000	
Riskmana	0.198** (0.02)	0.047 (0.466)	0.344** (0.01)	0.258** (0.01)	0.438** (0.01)	1/000

Key

Reuscore	Resources use conflict resolution
Huopro	Household production
Reu	Resources utilization
Pusede	Public services delivery
Assetdiv	Asset diversification
Riskmana	Risk management

p- values are indicated in brackets.

Correlation coefficient (r) values not in brackets

Table 6: Regression analysis

VARRIABLES	HOUPRO	PUSED	REU	ASSETDIV	REUSCORE
HUOPRO	-0.047	-0.037	-0.045	-0.024	-0.025
PUSEDE		0.257**	0.290**	0.185**	0.170**

Continuation of Table 6

REU			0.371**	0.390**	0.393**
ASSETDIV				0.415**	0.397**
REUSCORE					0.102**
R2	0.002	0.060	0.195	0.354	0.361

* P<.05 **P<.01 N= 24

DISCUSSION

Cattle rustling has escalated among the Samburu in recent years. It was estimated that over 80 major cattle raids had taken place between 1987 and 2000 between the Samburu and Turkana ethnic groups. Insecurity among the Samburu is thought to be brought about by easy access to firearms (guns) from the war torn neighbouring countries of Sudan, Somalia and Ethiopia as well as the arming of Kenya Police Reservist. This has contributed a great deal to cattle raids among the Samburu pastoralist (23% of the causes of cattle raids was attributed to increase of firearms in the area). This was confirmed from group discussion that ranked firearms as a major contributor to cattle raids. While 15% indicated that cattle rustling occurred because the morans took cattle raiding as a prestige and as a means of restocking herds (Table 3).

Morans carry out cattle raids as means of accumulating livestock as wealth or for prestige. One group would take revenge for a previous raid on their community or clan. This was common in Baragoi and Marti areas between the Turkana and Samburu communities in the northwest and between Samburu and Borana and the Somali communities in the southwest. These raids results in loss of human life. For example, the 1997 raids 'in Marti location resulted in 50 people dead, 27 lives were lost in 2000 and 50 died in 2005 in Baragoi, whereas many people were rendered homeless.

Political utterance enhanced the animosity among ethnic group living in Samburu. Cattle raids were used as means of impoverishing other communities and economically weaken them. When a community is deprived of livestock it becomes more aggressive and will use all means including the use of guns to cover the lost stock. This was evident particularly between the Turkana and Samburu ethnic groups where raids and counter raids were frequent. There was also evidence of long standing hostility between certain pastoral communities, particularly between the Turkana and Samburu, and Samburu and Borana communities, who are always engaged in cattle raiding.

Turkana community, for example, complained that their Samburu counterparts had taken them as aliens in the district contemplated relocating back to Lodwar in Turkana County. The concentration of development projects in areas occupied by the Samburu was a misgiving of the Turkana. Similarly holding of political and administrative power by the Samburu, for example, was a thorn in the flesh of the Turkana. The study established that incidences of hostility were less among communities that shared a language or had intermarriages, for example, there was good relationship between the Samburu, Arian and Rendile ethnic groups.

Recurrent of natural disasters such as drought has over the years led to loss of livelihoods among pastoralists. Many a times they resort to raids as a means of rebuilding their herds. This is exacerbated by the sale of livestock as a mean of getting income. Continued sale of livestock by households eventually increase their vulnerability and risk to drought, livestock diseases and raids. Prominent people have taken advantages of the increase in poverty among the people and use the morans in cattle raids for cash payments as are part of the stolen herd. Unlike earlier case where raiding was done by the morans using bows and arrow and spears use sophisticated weapons such guns.

The use of gun is thought to cause fear among the victims in order for large herds of livestock are stolen and sold to fetch higher income to be shared among the riders. Scarcity of grazing resources was another contributor to cattle raids. Each community searched for pasture and water for their livestock, particularly during dry periods. This necessitated their movements from one area to another and often disagreement resulted over the use of these resources. Said (1992) observed that ethnic conflicts occur as result of a competition for the scarce resources especially when clan territories are violated.

Frequent cattle raids among the Samburu pastoral communities had displaced many families concentrating them in areas with security, which led to uneven utilized of pastures and reduced crop production on arable land. Destruction of trees and shrubs for fuel wood and overgrazing around these camps has led to environmental degradation reducing

Carrying capacity of the Samburu rangelands. In the deserted areas, there was evidence of bush encroachment, which if not checked will be a serious problem in future.

If participatory approaches of resolving conflicts were used, conflicts would be minimized creating conducive environment for asset and enterprise diversification alleviating poverty among the households. To avoid the pitfalls of top-bottom approaches to wildlife conservation and cattle rustling, local communities should be involved in all stages of conflicts resolution including making decision on the management of the wildlife areas (Matenga, 1999). As argued by Western and Wright (1994), community – based conservation is an approach that reverses the top-bottom centre – driven conservation policies by focusing on the people who bear the costs of conservation in decision making. This empowers the people to mobilize their own resources, become social actors rather than passive subjects, manage their resources make decision, and control the activities that affect their live (Cernea, 1985). Resources ownership is a fundamental issues in addressing conflicts resolution, because a disenfranchised community is prone to act irresponsibly, when it comes to resources management. Top –down approaches disenfranchised communities.

The measure of household production was based on the income from livestock, crops and employment. This was an indicator of how well households could cushion the risk and uncertainties. The results from this study indicated that 91% of the sampled households had income of less than Ksh. 20,000 per year. This income is how compared to the household needs (food, school fee, clothes and medical services). Our investigation also indicated that 61% of the sampled population had livestock numbers below minimum survival requirement (had <24 for cattle and <100 sheep and goats). Each household required a minimum of 24 – 42 cattle or 100- 462 small stocks for subsistence or 12 – 30 camels (Dahl and Hjort, 1976). By this standard, it can be said that majority of the households among pastoral communities living in Samburu district can be considered poor.

The Correlation analysis (Table 5) indicated that there is no significant relationship between household production and risk management (poverty alleviation), which implied that the household production activities did not have an influence on risk management. The results of regression analysis (Table 6) indicated that coefficient of determination (R^2) for household production was 0.002, that is, only 0.2% of household production contributed to risk management (poverty alleviation).

Resources utilization had an influence of risk management ($r=0.344$, $p<.01$). This emphasized the fact that combination of various livestock species would lead to high production arising from optimum use of forage resources available, bringing about enhanced risk management. This finding strengthens the case for multi – species use, where wildlife products incorporated in livestock production would enhance risk management. Such enterprises as community wildlife reserves, restricted hunting based on quota system, would broaden the economic base thereby cushioning the risk during droughts.

Poor public service delivery (such as schools, poor and network, health facilities, poor livestock marketing facilities etc) in the study area had contributed greatly to low livestock off –take. Lack of poor information on market situation to herds by extension officers also contributed to low livestock off – take, thus increasing livestock mortality during drought and outbreak of livestock disease. The correlation analysis results indicated that there was a highly significant ($r=0.258$, $p<.01$) relationship between public service delivery and risk management, which implied that formal education was important to pastoral communities. High literacy levels would enhance employment of the household members increasing income and improving their ability to manage risk.

Limited asset diversification (only 20% had investment in income generating activities) was as a result of dependence on income from sale of livestock (86%). They very high significant ($r=0.438$, $p<.01$) relationship between asset diversification and risk management meant that asset diversification would improve risk management. Total dependence on livestock as a mean of livelihood had contributed very little in terms of risk management since very few people engaged in other income generating activities. This put pastoral communities in difficult situation especially during prolonged drought. The regression analysis results emphasized the fact that the pastoralist cannot manage risk by depending solely on livestock as a mean of livelihood. There is need, therefore, to put in place strategies which will enhance effective resource utilization, better public service delivery, increase household production and asset diversification to enable the pastoral communities' in Samburu County manage the environmental and human risks and alleviate poverty.

CONCLUSION AND WAY FORWARD

Low household production reduced pastoralist's ability to manage environmental and human risk. Human – human and human – wildlife conflict experienced by Samburu pastoral communities contributed to low livestock and crop production. Frequent occurrences of cattle raids led to the displacement of families' from their homes and concentrate them to more secure areas near urban or two centres. This concentration of human led to depletion of trees to high demand of fuelwood and livestock population increased the degradation of grazing resources leading to environmental degradation.

The insecurity had an impact on enrolment of children in schools and ultimate future employment opportunities. Low asset diversification among the pastoral communities was an indicator of the community's total dependence on income

from sale livestock and, therefore, ability to manage risk is reduced. Pastoral communities should diversify in their production activities which would reduce the dependence on livestock as mean of livelihood, thus diversify household income, which in turn could enable them to cushion the adverse effects of droughts in the district. Gainful employment rate was slow leading to low household income diversification and limited investment in income generating activities. This had an impact on household's capacity to cushion the effects of droughts and livestock diseases. Crop production was minimal possibly as a result of frequent drought or crop damage by wildlife, insecurity in some areas and leasing of group ranches to large – scale farmers.

It was apparent from the study that the Provincial Administration was directly involved in making decision in conflict resolution through public meetings or 'Barazas'. Other stakeholders did not participate fully in the conflict resolution process. It was also evident that conflicts have been on their increase irrespective of attempts to resolve them using "top –bottom" approach. Pastoralists should be involved in conflict resolution process and decision – making or sustainable resources utilization. The findings also endorse the efficacy of incorporating traditional resources management strategies in resolving conflicts among stakeholders in pastoral communities.

Emphasis should be put on education so that the culture of moranism that prompts cattle rustling could be minimized and needy children given necessary assistance to reduce school dropouts due to lack of fees. The negative impacts of cattle rustling on livelihoods on pastoral communities should be taught in school through the same approach the government has taken on the issues of creating HIV/AIDS awareness, to reduce the misuse of Morans in cattle raiding. Recruitment of Police reservists should be stopped, as residents believe that some of the police reservists are involved in raid instead of protecting the communities from the same.

The Government should revisit the compensation laws on wildlife damage so that communities living near conservation areas are well compensated from crop destruction by wildlife, injuries or loss of human life. Community Wildlife Service's Project should be extended to the dispersal areas of Samburu County so that the pastoral communities benefit directly from conservation of wildlife within the locality as way of enterprise diversification. This will not only increase revenue to the residents, but also create employment to household members. The morans could be fully engaged in the entertainment of tourists in these tourist centres.

Free movement and mixing of communities should be encouraged to enable members of different communities to interact and raise the level of co-operation and mutual trust. This will enhance even utilization of pasture. Confinement of community to specific grazing land and water points should be discouraged as this raises suspicion among the marginalized groups. Water development and even distraction of livestock watering points should be given priority. Group ranches in high potential areas in Lorroki and Kirisia divisions should be subdivided to enable individuals to venture into dairy farming to meet the increase in demand for fresh milk in expanding urban centres.

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