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# Impacts of natural resource conflicts on agricultural activities of the aror community in Baringo North Sub-County

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## ABSTRACT

This study used descriptive survey design using both qualitative and quantitative approaches because it intended to avail useful detailed information on impacts of natural resource conflicts on agricultural activities of the Aror community in Baringo North Sub-County. The study was carried out in Baringo North Sub County, Baringo County. The sub-county has been a setting of numerous resources use conflicts. Baringo North Sub-County has a total population of 93,789 but only 19,734 household heads were targeted, 14 local administrations (chiefs), 1 National Environmental Management Authority (NEMA) representative. The research instruments that were employed in collection of data in this study were structured questionnaires and interview schedules. The data were analysed using descriptive statistics; frequencies and percentages. The results revealed that conflict on resources have affected agricultural activities. Some of these conflicts include cattle rustling, water related conflicts, and land based conflicts and human wildlife conflict. These conflicts have resulted to burning of plants, closure of Agro vet shops and eventually reduced agricultural production. In the case of cattle rustling, there is restricted movement of animals hence only a few of the cows can be reared. Animals are therefore sold at a loss due to cattle rustling. Further, conflict on water resources has made the respondents to buy water as well as dig boreholes that are costly. As evidenced in the findings, natural resource conflicts have a negative effect on agricultural activities. It leads to reduced agricultural production and restricted movement of animals.

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## 1.0 Introduction

Globally, increase in population and environmental changes have led to high demand for resources. The demand for resources has seen community competing to access and control resources which are limited resulting to conflicts. Environmental changes related to climates have been identified as major predictors for the conflicts (Sterzel, 2012). Meier (2007) findings indicate that Environmental change in the Greater Horn of Africa (GHA) has been prove by expanding recurrence of dry seasons from one in the clockwork to one in at regular intervals. In Ethiopia, for instance, dry season recurrence has expanded from 6-8 years to below 1-2 years (Meier, 2007). Kok, Lotze and Jaarsveld (2009) identified that misuse of natural resources and other related ecological burdens are critical in all periods of the conflicts, from episode and propagation of violence to undermining prospects for peace. They noticed that no less than 40% of the intrastate clashes in the most recent sixty years are connected with natural resources. In Sudan, for example, clashes have strengthened because of lessening resources brought about by serious dry spells (United Nations Development Program Sudan, 2010).

Pastoralism is a noteworthy economic creation strategy in which individuals raise many animals, for the most part in arid and semi-arid lands (ASALs). ASALs cover 80% of Kenya's landmass and patronage around 33% of the nation's human populace and 70% of the national animals group. An expected 13 million steers, 25 million goats, 14.9 million sheep, 1.7

million jackasses and 2.9 million camels are found in Kenya's ASALs (KNBS, 2010). The most noteworthy domesticated animals populaces are held by the Aror and Pokot pastoralists of north-western Kenya (GoK, 2010). Pastoralism contributes around 12% to the nation's GDP (FAO, 2005), with the domesticated animals giving an expected 90% of all work open doors and more than 95% of family unit salaries in ASALs (Kaimba, Njehia and Guliye, 2011).

Pastoralism practiced by the greater part of Aror and Pokot ethnic communities is majorly nomadic transhumance. This is portrayed by danger spreading and adaptable components, for example, large and diverse herd size, communal land ownership, mobility, and herd splitting and separation (Opiyo, 2011). The domesticated animals sort kept by the Aror and Pokot to oversee and spread danger incorporate cows (zebu), camels, goats, sheep and jackasses. Domesticated animal ownership plays various social, cultural, financial and religious parts in peaceful vocations, for example, giving a general wellspring of nourishment as milk, meat and blood for family individuals, money wage to pay for grains, training, human services and different administrations. In peaceful pastoral societies, domesticated animals are additionally vital for installment of share, remuneration of harmed gatherings amid assaults, image of thriving and esteem, store of riches and security against dry season, infection and different catastrophes. Animals is subsequently an essential type of peaceful capital, other than working as a

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method for generation, stockpiling, transport and exchange of nourishment and riches (Behnke, 2008).

Baringo County, one of the arid and semi-arid county areas in the former Rift Valley Province of Kenya covers a zone of 10,949 km<sup>2</sup> (Kaimba, 2011) with a populace of 328,070 and is continually influenced by dry sessions (WCF Report). The County constitutes 6 constituencies to be specific Baringo Central, Tiaty, Eldama Ravine, Baringo North, Baringo South and Mogotio. The region is hot and dry all throughout the year and precipitation is very variable, with a yearly mean of 635 mm. Water deficiencies are a lasting issue, particularly in the dry low lying regions of the region. The accessibility of water is constrained amid the dry season yet normally increments with the onset of downpours. Nonetheless, precipitation in the region is sporadic and has just 50 percent unwavering quality (WCF Report). This is portrayed by exposed ground and free sandy top soil. It is occupied by the Pokot, Tugen and Njemps group of people whose real occupation is domesticated animals keeping (Kaimba, 2011). Only 10 percent of the area has high horticulture potential, for the most part in the south west and the Tugen hills is good agriculturally. In alternate ranges the fundamental action is pastoral nomads (WCF Report, 2012).

Baringo North Sub-County has been the setting of various clashes between improving governments and leaders set on saving the area and making it more gainful furthermore headstrong agriculturists and pastoralists (Anderson, 2005). Grazing conflicts between ethnic communities has expanded unreliability with limits and land residency approaches stay badly characterized (raetrust.org). Baringo North pastoralists are primarily transhumance pastoralists reliant on domesticated animals for their occupation. Generally, they move regularly from their home bases and drive their herds to places with pasture and water and return to their residences in different seasons when field pasture rejuvenate. There is an inclination to gather steers even under unfavorable natural conditions, regularly applying a great deal of weight on the pitiful ranch assets. Unavoidably, there is rivalry amongst pastoralists in the area for the accessible ranch assets, requiring continuous animals' developments and looking for grazing fields and water (Kaimba, 2011). The multiplication of current programmed weapons is all around reported as having negatively affected the scale and effect of furnished viciousness in peaceful groups (Mkutu, 2006).

In addition, commercialized raiding of livestock in which traders, politicians, rich businessmen and local people as they thrive for economic goals has influenced intensely the livelihoods of pastoralist and contributed to conflicts among pastoral communities (Eaton, 2010). Although violent conflict is one of the greatest challenges that the Arror, Samor, Njemps and Pokot communities in Baringo County have to deal with, its influence on their livelihoods in north-western Kenya has not been adequately documented. There have been studies by Kaimba, (2011) and Mkutu, (2010) to evaluate the drivers and alleviation system for the resource based clashes in pastoral regions, however it has scarcely been conceivable to break down the difficulties postured by rough clashes on account of the multifaceted nature and multidimensional character of the contentions in the locale under study. This study thus sought to provide a useful case to examine in depth the natural resource conflicts and its impact on household socio-economic activities of the Arror community in Baringo North Sub-County.

## Statement of the problem

The arid and semi-arid regions of Kenya are renowned for resource use conflicts that have severely impacted on livelihoods. In the Arror Community, natural resource conflicts are more frequent after the dry spells, cultural rites and also as a result of political competition. The increased frequency of conflicts has led to disruption of means of livelihood, deaths and displacement of the household members. In most cases, adverse impacts have been felt in agricultural production, settlement. This study impacts of natural resource conflicts on agricultural activities of Arror Community in Baringo North Sub County.

## 2.0 Methodology

### Study Design

A research design refers to the procedures used by the researcher to explore the relationship between variables from subjects into groups, administer measures in relation to the groups and analyze the data. According to Orodho (2004), descriptive survey design is a technique in which detailed information concerning a social phenomenon is gathered by posing questions to respondents. This study used descriptive survey design using both qualitative and quantitative approaches because it intended to avail useful detailed information on impacts of natural resource conflicts on agricultural activities of the Arror community in Baringo North Sub-County. Qualitative approach deals with synthesizing the collected information while quantitative approach deals with analyzing numerical values, charts and tables.

### Study area

The study was carried out in Baringo North Sub County, Baringo County. The sub-county has been a setting of numerous resources use conflicts.

### Target Population

Mugenda and Mugenda (2003), assert that target population is the population to which the researcher wants to generalize about the universe population of a study. The study was conducted in Baringo North Sub County. Baringo North Sub-County has a total population of 93,789 but only 19,734 household heads were targeted (KNBS, 2009). The study targeted 14 local administrations (chiefs), 1 National Environmental Management Authority (NEMA) representative and 4 Education Officers.

### Sample size and Sampling technique

A sample is a smaller group obtained from the accessible population. Each member in a sample is referred to as a subject. Mugenda and Mugenda (2009) assert that sampling is a process of selecting a number of individuals for study in such a way that the individuals selected represent the large group from which they were selected. Non-probability sampling technique and in particular purposive sampling was used to sample the NEMA official, area chiefs and education officers. Purposive sampling is used when a sample was quite small and for making generalization in quantitative research design (statistical inference) therefore it provided in depth information. It also helped in focusing a particular characteristic of population that was of interest which enabled the researcher answer the research questions. Stratified sampling (probability sampling) was used to select a sample from the categories of the total population in the area. Simple random sampling was used to select house hold heads. According to Kombo and Tromp (2006), stratified random sampling involves dividing the population into homogeneous subgroups and then taking a simple random sample in each

subgroup. It groups a population into separate homogenous subsets that share similar characteristics so as to ensure equitable representation of the population in the sample. The household heads sample was determined by Naissuma's formula recommended by Reid and Bore (1991).

$$n = 1 + N(e)^2$$

Where;

n is the sample size

N - the target population

e- the level of precision (0.05)

Substituting this value for strata;

$$n = 19,734$$

$$1 + 19,734 (0.05)^2$$

$$n = 392$$

392 are household heads and 2 key informants summing up to 394

With stratified proportional allocation, the Sample size was equally distributed among the respondents as shown in Table 1 below:

**Table 1. Sample Size.**

Strata	Target population	Sample size
Area Chief	14	1
NEMA	1	1
Household heads	19,734	392
Total	19753	394

#### Data Collection Instruments

The research instruments that were employed in collection of data in this study were structured questionnaires and interview schedules. Mugenda and Mugenda (2003), states that questionnaires are commonly used to obtain important information about the population. The questionnaires contained background information of the respondents and question items that sought to analyze them. The questionnaire carried both open ended and closed ended items which were distributed to household heads selected using simple random sampling. The interview on the other hand gave an opportunity to capture some key issues that were not provided for in the questionnaire by having leading or guiding questions. The interview was scheduled prior to commencement of study and administered to chiefs and village elders of the sample. The interviews were meant to gather information on the impact of resource conflicts in the area under study; it was administered to a small sample size selected from purposive sampling. Generally, interviews were used in this study because they also afforded the researcher chance to gather in depth first-hand information on face-to-face interaction with the respondents.

#### Piloting

Pilot study was conducted to determine the validity of the research instrument the relevance and the clarity to show any inappropriate questions so that the questions were rephrased. It was given to areas not selected in the study but with similar characteristics to those selected in the study sample. The pilot study was done in Baringo central which was not involved in the study.

#### Instrument Validity and Reliability

According to researchers, there are two forms of validity, namely, content and face validity. According to Mugenda and Mugenda (2012), content validity is a measure of the degree to which data collected using a particular tool represents a specific domain of indicators or content of a particular concept. They also define face validity as the degree to which an instrument is judged to be relevant in obtaining accurate and meaningful data on the variables of interest. Further, Borg and Gall (1989) explains that content validity is the degree to

which the sample test or instrument items represent the content that the instrument is designed for while face validity is the degree to which an instrument appears to measure what it is supposed to measure. To ensure that the research instruments collected the expected data, different measures were taken to ensure both content and face validity.

#### Reliability

Reliability refers to the degree to which an instrument shows the same results on replicated trials (Orodho, 2009). It is therefore the degree of constancy to produce the same results when used in two or more attempts to measure theoretical concepts. It is not a must that the reliable measuring tool be applicable (Kothari, 2014). Cronbach Alpha was used to determine a reliability index Santos & Reynold (1999). The piloting of the questionnaire was used to identify faults leading to its reliability. Data was analyzed by use of SPSS software. The test re-test technique was used to estimate the reliability of the instruments. This involved administering the same test twice to the same group of respondents who had been identified for this purpose.

The research instruments were given to the supervisors, colleagues, and other experts in research from Kisii University who checked and further interrogated them on content and face validity and reliability. The expertise judgments helped in making necessary adjustments that were identified.

#### Data Collection Procedure

The researcher obtained a permit from the National Council for Science and through an introduction letter from the Kisii University. The researcher visited the affected areas in Baringo North as per appointed times, created rapport with local administration and community members and then issued the questionnaires. The respondents were assured of confidentiality would be maintained.

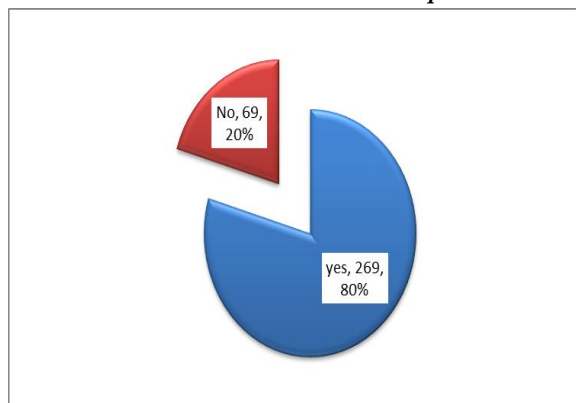
#### Data Analysis Technique

The data gathered by use of questionnaires were examined to ascertain their accuracy, competence and to identify those items wrongly responded to. The data was validated, edited and then coded. The validation process was to enable the searcher to determine the return date of questionnaire. Data from interviews and open ended items in the questionnaire constituting qualitative data in form of words and phrases was transcribed and then arranged as per emerging themes. Some data however were quantified where possible and with quantitative data from the structured questionnaire items. All quantitative data were coded, classified, recorded and prepared on a sheet as per the objectives of the study. They were subjected to descriptive statistics by use of the Statistical Package for Social Sciences (SPSS). Frequencies and percentages were used as tools of analysis in order to answer research questions.

#### 3.0 Findings

##### Natural Resource Conflicts and Agricultural Activities

The respondents were asked whether they have experienced conflicts on resources. The results are as presented in figure seven. From the findings in figure six, 80% (269) of the respondents have experienced conflicts on resources while 20% (69) of the respondents have not experienced conflicts on resources.



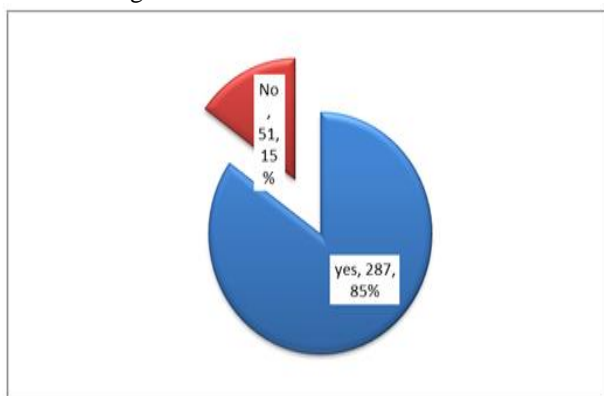
**Figure 1. Conflicts on Resources**

Table 2 indicate that majority 73.4% (248) of the respondents have experienced cattle rustling. Further, 29.9% (101) of the respondents have experienced water related conflicts, 26.6% (90) of them have experienced land based conflicts and 22.2% (75) of the respondents have experienced human wildlife conflict.

**Table 2. Natural Conflict Experienced.**

		Yes	No	Total
Land Based Conflicts	Frequency	90	248	338
	Percent	26.6	73.4	100
Water Related Conflicts	Frequency	101	237	338
	Percent	29.9	70.1	100
Cattle Rustling	Frequency	248	90	338
	Percent	73.4	26.6	100
Human Wildlife Conflict	Frequency	75	263	338
	Percent	22.2	77.8	100

From the figure 2 shows that 85% (287) of the respondents confirmed that conflict on natural resources has affected their agricultural activities. Only 15% (51) of the respondents noted that conflict on natural resources has not affected their agricultural activities.



**Figure 2. Natural Resources conflict and its effects on Agricultural Activities.**

#### **Conflict on Natural Resources and its effects on Agriculture**

Various conflicts that have affected agriculture are highlighted in Table 3. Most respondents 91.4% (309) said that conflict on natural resources has resulted to burning of plants, 67% (227) of the respondents confirmed that conflict on natural resources has resulted to closure of Agro vet shops. Further, 65.4% (221) of the respondents confirmed that production has gone down. However, 91.4% (309) of the respondents denied that natural resources are underutilized, 85.2% (288) of them disagreed that cattle rustling has affected agriculture and 92% (311) of them disagreed that there is no market for farm product due to insecurity.

**Table 3. Various conflict on Natural Resources have Affected Agriculture.**

		Yes	No	Total
Production goes down/wild animal attacks	Frequency	221	117	338
	Percent	65.4	34.6	100
Natural resources is under utilized	Frequency	29	309	338
	Percent	8.6	91.4	100
Cattle rustling	Frequency	50	288	338
	Percent	14.8	85.2	100
Burning of plants	Frequency	309	29	338
	Percent	91.4	8.6	100
No market for farm product due to insecurity	Frequency	27	311	338
	Percent	8	92	100
Agro vet shops closed	Frequency	227	111	338
	Percent	67	33	100

The researcher sought to establish natural resource conflicts that affect agricultural activities the most. The results are presented in table 3. Out of the 338 respondents, 46.4% (157) of them noted that cattle rustling has affected agriculture activities though 53.6% (181) of them disagreed. Further, 57.4% (194) of the respondents denied that human wildlife conflict has affected agriculture activities while 42.6% (144) of them were in agreement. In addition, 60.1% (203) of the respondents disagreed that water related conflicts have affected agriculture activities whereas 39.9% (135) of them were in agreement. Finally, 68.6% (232) of the respondents agreed that land based conflicts have not affected agriculture activities yet 31.4% (106) of them agreed that land based conflicts have affected agriculture activities.

**Table 4. Natural Resources conflicts which Affect Agriculture Activities Most.**

		Yes	No	Total
Cattle rustling	Frequency	157	181	338
	Percent	46.4	53.6	100
Human wildlife conflict	Frequency	144	194	338
	Percent	42.6	57.4	100
Water related conflicts	Frequency	135	203	338
	Percent	39.9	60.1	100
Land based conflicts	Frequency	106	232	338
	Percent	31.4	68.6	100

#### **Effect of Natural Resources Conflict on Agriculture Activities**

The researcher sought to establish the effect of natural resources conflict on agriculture activities. The results are as presented in table 5. The study sought to find out whether crop production has been affected by conflict on land. The results were such that 40.8% (138) of the respondents agreed, 27.2% (92) strongly agreed, 15.7% (53) disagreed, 12.7% (43) strongly disagreed and 3.6% (12) were not sure. The mean value of 3.54 was a confirmation that conflict on land has affected crop production.

In a bid to establish whether conflict on agricultural lands has made it difficult to produce enough food for selling and consumption, the respondents were asked to respond accordingly. 41.4% (140) of the respondents agreed, 25.4% (86) strongly agreed, 7.4% (25) strongly disagreed while 25.7% (87) of the respondents were undecided. The mean value was 3.78 and the standard deviation 1.063. This implies that conflict on agricultural land has made it difficult to produce enough food for both consumption and selling.

To establish whether conflict has forced the respondents to lease their land, respondents were requested for their opinion and the results were such that, 22.8% (77) of them agreed, 9.2% (31) strongly agreed, 33.1% (112) disagreed, 18.6% (63) strongly disagreed while 16.3% (55) of the

**Table 5. Effect of Natural Resources Conflict on Agriculture Activities.**

		SD	D	UD	A	SA	M	S Dev
My crops production have been affected by conflict on land	F	43	53	12	138	92	3.54	1.369
	%	12.7	15.7	3.6	40.8	27.2		
I cannot be able to produce enough food for selling and consumption	F	25	0	87	140	86	3.78	1.063
	%	7.4	0	25.7	41.4	25.4		
Due to conflict am now forced to lease my land	F	63	112	55	77	31	2.71	1.261
	%	18.6	33.1	16.3	22.8	9.2		
I can only rear few cows since cattle rustling has restricted movement of animals to grazing	F	25	75	43	136	59	3.38	1.215
	%	7.4	22.2	12.7	40.2	17.5		
Most of the time I sell my animal at loss for fear of cattle rustling	F	0	116	36	87	99	3.5	1.236
	%	s	34.3	10.7	25.7	29.3		
Cattle rustling force me to sell my cows	F	25	114	61	101	37	3.03	1.172
	%	7.4	33.7	18	29.9	10.9		
conflicts on water resources have made me to search for more	F	128	75	30	50	55	2.49	1.512
	%	37.9	22.2	8.9	14.8	16.3		
I now buy my own water from outside due to conflict of water resources	F	75	146	32	49	36	2.48	1.276
	%	22.2	43.2	9.5	14.5	10.7		
I am forced to cultivate crops as opposed to keeping livestock	F.	9	80	47	120	82	3.55	1.17
	%	2.7	23.7	13.9	35.5	24.3		

respondents were neutral. The mean for the item was 2.71 and the standard deviation 1.26. This is an indication of uncertainty in regards to whether conflict has forced the residents to lease their land.

In order to ascertain whether the respondents can only rear few cows since cattle rustling has restricted movement of animals to grazing, results revealed that 40.2% (136) of the respondents agreed, 17.5% (59) strongly agreed, 22.2% (75) disagreed, 7.4% (25) strongly disagreed while 12.7% (43) of the respondents were neutral. The mean for this item was 3.38 and the standard deviation 1.218. This indicates that there is doubt whether respondents can only rear few cows since cattle rustling has restricted movement of animals to grazing. The researcher also sought to establish whether cattle rustling is the reason why the respondents sell their animals at a loss. The results were such that 25.7% (87) of the respondents agreed, 29.3% (99) strongly agreed, 34.3% (116) disagreed while 10.7% (36) of them were not sure. The mean for this item was 3.5 and the standard deviation 1.236. Therefore, cattle rustling is the reason as to why cows are sold at a loss.

Further, in regards to whether cattle rustling force the respondents to sell their cows even before they mature, 29.9% (101) of them agreed, 10.9% (37) of them strongly agreed, 33.7% (114) disagreed, 7.4% (25) of them strongly disagreed whereas 18% (61) of them were undecided. The mean was 3.03 and the standard deviation 1.172. This is an indication of uncertainty in regards to whether cattle rustling force the respondents to sell their cows even before they mature

Additionally, 14.8% (50) of the respondents agreed that conflicts on water resources have made them to search for more to dig borehole which is costly, 16.3% (55) of them strongly agreed on the same, 22.2% (75) of the respondents disagreed, 37.9% (128) of the respondents strongly disagreed while 8.9% (30) of the respondents were undecided. The item had a mean of 2.49 and standard deviation of 1.512. Also, 14.5% (49) of the respondents agreed that they can now buy their own water from outside due to conflict of water resources, 10.7% (36) of them strongly agreed, 43.2% (146) of them disagreed, 22.2% (75) strongly disagreed while 14.5% (49) of the respondents were undecided.

The results summed up to a mean of 2.48 and standard deviation of 1.276. Finally, 35.5% (120) of the respondents agreed that they are forced to cultivate crops as opposed to keeping livestock, 24.3% (82) of them strongly agreed, 23.7% (80) of them disagreed, and 2.7% (9) strongly disagreed while 13.9% (47) of the respondents were undecided. The item had a mean of 3.55 and standard deviation of 1.17 affirming that conflict forced the respondents to cultivate crops rather than keep livestock.

### Conclusions

The results have revealed that conflict on resources have affected agricultural activities. Some of these conflicts include cattle rustling, water related conflicts, and land based conflicts and human wildlife conflict. These conflicts have resulted to burning of plants, closure of Agro vet shops and eventually reduced agricultural production. In the case of cattle rustling, there is restricted movement of animals hence only a few of the cows can be reared. Animals are therefore sold at a loss due to cattle rustling. Further, conflict on water resources has made the respondents to buy water as well as dig boreholes that are costly. As evidenced in the findings, natural resource conflicts have a negative effect on agricultural activities. It leads to reduced agricultural production and restricted movement of animals.

### Reference

- Behnke, S.R.H (2008). The economic contribution of pastoralism: case studies from the horn of Africa and Southern Africa. *Nomadic People* 12(1):45-79.
- Borg, R & Gall, D. (1989). *Education and Research*. 6th Edition. New York: Longman Inc
- Eaton, D. (2010). The rise of the 'traider': the commercialization of raiding in Karamoja. *Nomadic*
- FAO. (2005). *The State of Food Insecurity in the World. Addressing food insecurity in protracted crises*. Rome
- Kaimba, G, B Njehia and A. Guliye, (2011). Effects of cattle rustling and household characteristics on migration decisions and herd size amongst pastoralists in Baringo District
- Kenya National Bureau of Statistics (KNBS) (2009) *National Economic Survey 2009*, Nairobi, Kenya.
- Kok A., Lotze W. and Jaarsveld S. V. (2009) *Natural Resource, the environment and conflicts*.

- African Center for the Constructive Resolution of Disputes (ACCORD) [www.accord.org.za] (Accessed April, 2015)
- Kombo, D. L. & Tromp L. A. (2006). Proposal and Theses writing: An Introduction. Pauline Publications Africa (2nd ed) Don Bosco Printing Press, Makuyu: (Kenya).
- KWS (Kenya Wildlife Service) (2002). Lake OlBolosat Basin Integrated Management Plan 2003-2008. Planning Unit. Government Printer, Nairobi, Kenya.
- Meier, P., Bond, D. and Bond, J. (2007). Environmental influences on pastoral conflict in the Horn of Africa. In *Political Geography* (26), pp.716 -735.
- Mkutu, K. (2000), Cattle rustling and proliferation of small arms, Nairobi, Kenya.
- Mkutu, K. (2006) Small arms and light weapons among pastoralists groups in Kenya, Uganda border. Oxford University Press
- Mugenda O.M. & Mugenda A.G. (2003). Research Methods Quantitative and qualitative approaches. Nairobi: Acts Press
- Mugenda, O.M & Mugenda, A. G. (2009). Research Methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press.
- NEMA (National Environment Management Authority) (2007). Lake OL” Bolossat Management plan 2008- 2013. Kenya Westlands Forum. Nairobi, Kenya.
- Opiyo, FEO, SM Mureithi, and RK Ngugi. (2011). The influence of water availability on pastoralists resources use in Kitui and Mwingi districts of Kenya *journal of Human Ecology* 35(1): 43- 52.
- Orodho, A.J. (2004). Techniques of writing research proposals and reports in education and social Sciences. Nairobi: KANE 2 J.A
- Reid N, G, BooreJ,P (1991). Research Methods and Statistics in Health Care. London: Edwards Arnold.
- Sterzel,T.,Ludeke, M., Kok, M., Soysa, I., and Walther, C. (2012); Conflicts and Patterns of Vulnerability on dry lands. GROW net Workshops/dry lands conflicts- GECHS09. doc.Downloaded 4.4.2015
- UNDP. 2010. Drought and potential conflict scenarios in northern Kenya and other arid lands: a situational report. UNDP, Nairobi.