

Early Warning System and Preventive Diplomacy in Land-Based Conflicts among Pastoralist Communities in Samburu County

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Abstract

The use of preventive diplomacy in conflict prevention can be traced back to various human civilizations where treaties were concluded, alliances formed, inter-ethnic marriages solemnized and various forms of traditional and scientific knowledge employed to prevent inter-state and intra-state conflicts. However, localizing this strategy at community level remains a challenge due to lack of institutional structures and resources to advance capacity of preventive diplomacy in land-based conflicts. The study examines the influence of early warning system on land-based conflicts among the pastoralist communities in Samburu County. The study was guided by conflict prevention theory, and the target population comprised 424 individuals from different institutions involved in peace and security discourses in Samburu County, Kenya. Using Yamane formula to calculate the sample size, stratified random sampling technique was applied to select 206 respondents. Primary data was collected using a questionnaire, and it was processed using descriptive, inferential, and thematic content analysis techniques. Analyzed data was presented using tables, figures, and narratives. Findings indicated that early warning system is used by both the state and the non-state actors to predict trends of violent conflicts from open source information, inter alia, NDMA which publishes early warning system in a monthly bulletin; smart-phone applications that monitor rangeland conditions, and disseminating threats alerts. Complementing scientific methods with traditional knowledge to forecast the future is indispensable, and so are the District Task Forces which work closely with Samburu district peace committees to monitor livestock migratory routes and conduct night watch on herders to prevent them from rearming. The study concluded that the early warning system tool has been applied to predict trends on land-based conflicts in Samburu, but there is need to increase resources in order to increase its capacity. Synergy between multiple actors is recommended to avoid a confused response.

Key words: *Land-based conflict, early warning system, preventive diplomacy, pastoralist communities*

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1.0 Introduction

Whether at individual, domestic or systemic levels of analysis, conflict is a generic phenomenon which has been linked to various structural causes. From a generic lens, conflict entails disagreements between two or more antagonistic parties driven by incompatible interests (Gavin, 2014). Causes of conflicts among pastoral communities are becoming increasingly intricate. Fighting over scarce pastures and water is a chronic experience among pastoralist communities globally, Kenya included (Batmanglich, 2017).

According to Reid et al. (2014) the ravages of climate change continue to exacerbate dwindling grazing land and water points, thus sparking violent conflicts among pastoralist communities as they scramble for these land-based resources. Proliferation of small and light weapons further escalates conflict, as pastoral groups use them to forcefully access newly discovered aquifers and grazing lands. However, Reid et al. (2014) focused on isolated aspects of climate change and possession of illegal firearms as causes of land-based conflicts at community level, yet there could be other influencers.

Samburu County is inhabited by pastoralist communities who mainly depend on livestock for their livelihood, although tourism is also an important activity. Most land is trust land and public land, there are also several group ranches that are not subdivided, as well as private individual ranches. Besides the Samburu community who are the majority, there are other demographic populations of pastoralist

communities; namely, the Rendille, Turkana, Pokot, and Borana (Galaty, 2013). Additionally, other communities live in the urban centers of the county, but do not necessarily practice pastoralism. Persistent land-based confrontations in Samburu and the larger northern Kenya region continue to hinder development within Samburu County in various sectors, such as education, agriculture, and infrastructural development. Lund (2009) affirms that overt conflicts are preventable and that the success of prevention of conflicts depend on available of mechanisms for preventive responses at the latent phase of conflict.



“Early warning systems significantly influence forecasting trends in land-based conflicts for early response among the pastoralist communities.”

However, without formalized early warning system structures, it may be challenging to predict trends, avert land-based conflicts and realize sustainable peace and security among pastoralist communities in Samburu County. Various studies have assessed the utility of early warning system in forecasting human rights violations, political instability, state fragility, natural disasters, calamities and averting violent conflicts through early response. Odote (2016) assessed the implications of early warning system on conflict prevention in Africa, and

underscored how early warning as a tool of preventive diplomacy has been successfully applied in South Sudan and Kenya to avert election conflicts.

Notably, early warning system was employed in a more structured system, unlike in the current context where local pastoralist communities in Samburu County may not have formalized structures for predicting trends in land-based conflicts. The study therefore justifies the use of early warning system in different social environments beyond political disputes and governance. The study will provide new knowledge and a roadmap to the policy makers towards localizing preventive diplomacy for purposes of forecasting trends on land-based conflicts with the aim of proactively maintaining peace and security in Samburu County.

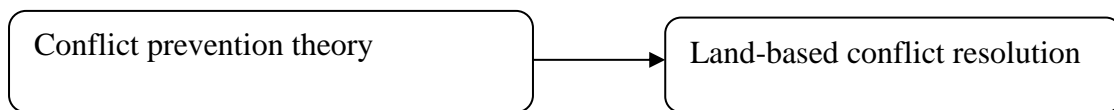
Further, the study will serve as a reference point for future studies.

Theoretical Review: Conflict Prevention Theory

This study was guided by conflict prevention theory whose proponent is Michael Lund (1996). The theory elucidates that conflicts are preventable and the strategy adopted for resolution should be guided by the context and stage of the conflict. Further the theory suggests synergy between all actors in conflict prevention as well as institutional structures. (Lund, 2002). Within the context of early warning system, synergy between decision makers and all stakeholders, rather than a reactive response that is incoherence and fragmented is commendable.

Figure 1

Theoretical Framework



Empirical Literature Review

Early Warning System and Land-Based Conflicts

Early warning system is a tool through which decision-makers are alerted of the impending conflict or disaster so that tension can be prevented from escalating into a violent conflict (Greiner, 2013). A number of past studies have viewed early

warning system as key in analyzing the nature and dynamics of situations, and therefore apt at government, intergovernmental and nongovernmental organization levels (Schilling et al., 2012).

As a tool of preventive diplomacy, early warning system has been employed by organizations such as the National Disaster Management Authority (NDMA), the Intergovernmental Authority on

Development (IGAD), African Union (AU), and United Nations (UN), among others, to help in predicting trends of violent conflicts, and prevent escalation of the same at domestic and international levels. Early warning system discourse can be viewed from political, economic and social environments: Early warning system is used to predict and prevent violent conflicts, war, military intervention, genocide, human rights abuses, political instability and state fragility, natural disasters, famine and influx of refugees. This study, however, focusses on early warning system as a tool that address violent land-based conflicts among pastoralist communities in Samburu County, Kenya (Sheri et al., 2015).

Early warning system has been successfully used in other jurisdictions, thus cementing the argument that if applied in tandem with institutional structures and adequate resources, then this tool can be clearly instrumental in preventing conflicts and other disasters. For instance, in 2015, Blue Line conflict involving Lebanon and Israel deescalated because of the overt presence of United Nations Interim forces in Lebanon (UNIFIL), who predicted conflicts trends that could escalate to intense violent conflicts between the two

states. Similarly, in Kenya, communities have used traditional knowledge, such as blowing horns, smoke signals, and drums as means of alerting others about a disaster or a conflict. However, absence of early response is attributed to poor early warning system in land-based conflicts and other causes of conflict that interlink with land-based resources (Mosley & Watson, 2016).

2.0 Materials and Methods

This study used cross sectional survey research design to address the research question. This study design allows accurate and systematic description of a population, and the situation or phenomenon as the study strives to answer the what, where, when, and how questions (Kothari, 2013). The study was conducted in Samburu County in northern part of Kenya. The county is inhabited by the Samburu, Turkana, Rendille, Somali, Borana and Meru communities, among other smaller ethnic groups. Samburu County provided an ideal target population because of the protracted conflicts caused by resources scarcity and a nexus of other structural and proximate causes that exacerbate land-based conflicts in the region. The target population was 424 as indicated below.

Table 1
Target Population

Category	Target Population (N)	Percentage (%)
Deputy county commissioner	2	0.5
Area chiefs/assistant chiefs	94	22.2
Community elders	134	31.6
Religious leaders	165	38.9
Civil society organizations	29	6.8
Total	424	100.0

Sampling was carried out using stratified sampling technique where respondents were proportionately selected from various categories or strata (Yamane, 1967); where,

$$n = \frac{N}{1 + N(e)^2}$$

was applied to sample 206 respondents, where n was the sample size, N is the target population (population size), and e was the level of precision or margin of error. In this case, N=424, hence, the sample size was:

$$n = \frac{424}{1 + 424(.05)^2} = 206$$

Table 2
Sample Size

Category	Target Population (N)	Sample Size (n)
Deputy county commissioner	2	1
Area chiefs/assistant chiefs	94	46
Community elders	134	65
Religious leaders	165	80
Civil society organizations	29	14
Total	424	206

A questionnaire was used to collect primary data for the study. Kuada (2012) avers that questionnaire is suitable for collecting descriptive data, saves time, and makes data coding easier. Validity of the tool was verified through peer reviews and expert opinions from other researchers in land-based conflict (Kothari, 2013). The questionnaire was also tested for reliability by using split-half method, where Cronbach’s alpha was generated to test internal consistency of the tool. Through this process, a range of 0.7-1.0 was considered to represent the standard for internal consistency of the questionnaire.

The study applied mixed method approach, and triangulation of quantitative and qualitative data was used. Mixed method

approach allows collection of rich data. Narrative data complemented statistical data (Zikmund et al., 2013). Drop-and-pick (self-administered questionnaires) method was mainly used, but with a number of face-to-face administration of the questionnaires, depending on some respondents’ availability or preference. This involved dropping blank questionnaires to be filled by the respondents and picked after completion. Two research assistants were engaged after being properly trained on data collection processes.

Quantitative data was analyzed descriptively and inferentially using SPSS version 25 software. Qualitative data was analyzed according to emerging themes and

documented using narratives. Regression analysis was used for quantitative data to establish the relationship between early warning system and land-based conflicts, and. presented using tables, figures, and narratives.

3.0 Results and Discussion

The respondents were categorized as deputy county commissioner, area chiefs/assistant chiefs, community elders, religious leaders, and civil society organizations. See Table 3.

Table 3
Response Rate

Category	Sample Size		Response Rate	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Deputy county commissioner	1	0	1	100
Area chiefs/assistant chiefs	46	22	33	72
Community elders	65	32	53	82
Religious leaders	80	39	57	71
Civil society organizations	14	7	9	64
Total	206	100	153	74

As summarized on table 3, 153 of the 206 respondents were able to successfully participate in the study. This amounted to 74% response rate, with each category of the respondents recording at least 64%.

Respondents' Demographic Characteristics

The respondents' demographic details were documented in terms of gender and level of

education. Out of 153 respondents that participated in the study, 61% (93) of them were male, while 39% (60) of them were female. In terms of level of education, which was an important variable in determining the kind of decisions made on important issues of public interest, the responses are captured in Table 4.

Table 4

Respondents' Level of Education

Level	Frequency (n)	Percentage (%)
Primary	21	14
Secondary	51	33
College	43	28
University	33	22
Other (specify)	5	3
Total	153	100

Based on the findings on table 4, 33% (51) of the respondents had attained secondary education, 28% (43) had college education, 22% (33) had reached university, 14% (21) had primary school level education, while only 3% (5) of the respondents indicated they had other education qualifications, which included the Islamic Madrassa and those that did not complete any form of formal level of education. Overall, more than 50% of the research participants had obtained at least college and university education qualifications, while the rest had primary, secondary, or ‘other’ education attainments. Based on the distribution of education qualifications of the respondents, the respondents are highly likely to have

given sufficiently reliable data. The respondents were clearly sensitized on the need to provide true information

Descriptive Analysis of Early Warning System and Land-Based Conflicts in Samburu

The study examined early warning system as a tool of preventive diplomacy on land-based conflicts among pastoralist communities in Samburu County. There were different views regarding the influence of early warning system on land-based conflicts among the pastoralist communities in Samburu County. Table 5 provides a summary of these responses.

Table 5

Influence of Early Warning System on Land-based Conflicts

Statement	1=strongly disagree	2=disagree	3=neutral	4=agree	5=strongly agree	Total
	<i>n</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)
There are clear mechanisms for alerting different key players about potential outbreaks	35 (23)	42 (27)	21 (14)	29 (19)	26 (17)	153 (100)
The communities have effective structures for preventing escalation of violent conflicts	32 (21)	41 (27)	19 (12)	31 (20)	30 (20)	153 (100)
There is interdependent relationship among all key players on preventive measures	16 (10)	28 (18)	29 (19)	42 (27)	38 (25)	153 (100)
There are means of screening and identifying potential troublemakers with the aim of scuttling their criminal activities	13 (8)	23 (15)	54 (35)	32 (21)	31 (20)	153 (100)

The findings on table 5 indicates that there were different views regarding the assertion that there are clear mechanisms for alerting different key players about potential outbreaks of conflicts within the Samburu community. 27% (42) of the respondents disagreed, 23% (35) strongly disagreed, 19% (29) agreed, 17% (26) strongly agreed, while 14% (21) had neutral views regarding this proposition. Further, 27% (41) of the respondents disagreed, 21% (32) strongly disagreed, 20% (31) agreed, 20% (20) strongly agreed, whereas 12% (19) of them had neutral views regarding the assertion that the communities in Samburu County have effective structures for preventing escalation of violent conflicts.

There were also different views regarding the proposition that there is interdependent relationship among all key players on conflict preventive measures, with 27% (42) and 25% (38) of the respondents agreeing and strongly agreeing with this assertion respectively; 16% (10) strongly disagreed, 28% (18) disagreed, while 29% (19) remained neutral. Similarly, the respondents reacted differently to the view that there are means of screening and identifying potential troublemakers with the aim of scuttling their criminal activities, where 35% (54) of the respondents were ambivalent, while 21% (32) agreed, 20% (31) strongly agreed, 15% (23) disagreed and 8% (13) strongly disagreed with this view.

The current study revealed that early warning system significantly influence forecasting trends in land-based conflicts for early response among the pastoralist communities. Mixed reactions regarding whether there are clear mechanisms for

alerting different key players about potential conflicts can be attributed to lack of a formalized and structured early warning system that is often required for early response, to avert escalation of violent land-based conflicts as well as incoherence and fragmentation due to multiple actors. This view is corroborated by Cowan et al. (2014) study about the general consensus regarding structures of the early warning system.

Additionally, Cowan et al. (2014) elucidates that there is integration of traditional and modern conflict prevention measures and strategies; a phenomenon which has been witnessed in many African countries. Further, the outcome of this research study agrees with Cowan et al. (2014) that the most important aspect of early warning system is existence of effective structures for early response to avert escalation of violent conflicts. The author also noted that success and efficacy of early warning system is dependent on synergy within the existing structures for ensuring that information is channeled and understood by the right recipients in time for quick response.

This study further noted that there is interdependent relationship among all key actors in early warning system at community level through NDMA early warning bulletins, uptake of mobile technology to disseminate threat alerts, and also the use of traditional knowledge to forecast the future. This concurs with the study by Greiner (2013) which revealed that early warning system served to alert communities and other actors in peace and security discourse about impending conflicts so as to proactively avert them and

or prevent further escalation of such conflicts.

Further findings indicated that there are means of screening and identifying potential troublemakers at community level with the aim of scuttling their criminal intentions. This is attributed to the District Task Forces (DTF) that works closely with Samburu district peace committees to monitor certain activities that would culminate to existential threats to peace and security if unpacked. Such activities include monitoring livestock migratory routes; supervising disarmament efforts by conducting night watch on the herders to prevent them from rearming themselves; reliable and effective relay of information, as well as quick response system. The

Table 6

Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.066	153	.201	.975	153	.53*
Standardized Residual	.066	153	.201	.975	153	.53*

Table 6 illustrates distribution of the standardized and unstandardized residuals of the study. Based on the Kolmogorov-Smirnov and Shapiro-Wilk tests, if the p-value is less than 0.05, the data is not normally distributed. As illustrated in table 6, the p-values for both standardized and unstandardized residuals for Kolmogorov-Smirnov test is (p=0.201) and Shapiro-Wilk

revelation aligns with Rahman et al. (2018) study that early warning system is often instrumental in helping communities predict trends and avert impending violent conflicts and other social, economic and political threats through a proactive early response that is aimed at mitigating negative consequences on human lives and people’s livelihoods.

Inferential Analysis of Independent Variables

Kolmogorov-Smirnov test was undertaken to establish if there was any violation of assumptions of normal distribution of data (Naaman, 2021). Table 6 summarizes the findings

test (p=0.53) were greater than 0.05, implying that distribution of the residuals were normally distributed.

Model Summary

Model summary was performed to establish the strength of the correlation between the model and the dependent variable, as illustrated in Table 7

Table 7

Model Summary for early warning system and land-based conflicts

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.603 ^a	.486	.482	.6131

a. Predictor: early warning system
Source: Author (2022)

Based on the model summary above, the coefficient of correlation R is .603, implying that there is a strong relationship between the independent (predictor) variable and the dependent variable (land-based conflict), or the outcome of the study. The coefficient of determination R square (R^2) was 0.482%, meaning that 48.2% changes in land-based conflict was

explained by early warning system, the independent variable.

Analysis of Variance (ANOVA)

Analysis of variance (ANOVA) of the regression model was performed to test the good of fit (the significance of the correlation between the independent and dependent variables) of the model of the study. See Table 8.

Table 8

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	14.697	1	14.70	27.72	.000 ^b
	Residual	79.515	150	0.53		
	Total	94.212	151			

a. Dependent Variable: land-based conflict
b. Predictor: early warning system

Based on the ANOVA findings in table 8, the P-value was 0.000. The statistics further showed that the *F* statistic (1, 150) at 95% level of significance (0.53) was less than *F* (27.72). This therefore meant that the regression model was significant in predicting the influence of independent variable (early warning system) on land-based conflicts among pastoralist communities in Samburu County

Linear regression of the influence of early warning system on land-based conflicts

Linear regression was carried out to understand the level of influence of early warning system on land-based conflicts, with statistics for the regression coefficients summarized in Table 9

Table 9

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Regression Coefficients for Early Warning System

Predictor	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	3.121	0.041		1.531	0.000
X ₁ Early warning system	0.332	0.109	0.4121	3.312	0.001

a. Land-based conflict

Based on the regression analysis on table 9, when all factors were held at zero, the constant was 3.121. This meant that at ceteris paribus (all other factors remaining the same), the level of prevention of land-based conflict among pastoralist communities in Samburu would be 3.121. But a unit increase in early warning system when all other factors were maintained at zero, would result to an increase in resolution of land-based conflict by 0.332. Furthermore, at 5% level of significance; where $P=0.001 < 0.05$, meant that early warning system positively influenced land-based conflict among pastoralist communities.

4.0 Conclusion

The findings indicated that early warning system has been used by pastoral communities in Samburu county to predict trends of inter community and intra community violent conflicts during dry seasons. The study further concluded that early warning system was employed, but

was not proactive at the community level due to lack of formalized structures of risk knowledge, monitoring and warning service, dissemination and communication, and response capability.

5.0 Recommendations

There is need by the government of Kenya and other non-state actors to strengthen the early warning system tools through allocation of more resources in order to increase its capacity. To check the tool against sensationalism, the civil society needs to advocate for policy frameworks that ensure stakeholders adhere to the purpose of the tool in presenting feasible responses early. Policymakers need to support early warning system through legislation, regulation and policies. The national and county governments should also create synergy between multiple non-state actors that employ early warning system for conflict prevention, as well as averting incoherence and fragmentation.

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