

Effect Of Drought Management Institutional Framework On Sustainable Economic Livelihood Of Pastoral Communities In Garissa County, Kenya

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ABSTRACT

Drought is the major dominant and frequent hazard affecting pastoralism, which is not only a manner of life for millions of people in the Horn of Africa but also a source of livelihood and a production system practised in the vast arid lands of the African continent. Post-drought valuations of government response to drought have confirmed that the reactive or crisis management method has led to ineffective, poorly coordinated, and untimely responses, and this triggered the current study to focus on analysing the effect of drought management institutional framework on the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya. The study sought to assess the effect of the drought management institutional framework on the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya. A descriptive design which employed Multi-stage cluster sampling was done to select a representative sample. Data was collected from the study participants using questionnaires and interviews. The target population was 623,060, consisting of 98,590 households, (KNBS, 2009). Fisher's formula was adopted to arrive at the sample size of 405. Mixed methods approaches were used to analyse the data using SPSS version 21. The study found that there is neither a clear framework for communication of expectations in early signs nor communicating early warning signs of drought to the pastoral communities and other authorities are effective. The county government has inadequate funding for curbing water and pasture scarcity challenges; drought emergency funding is ineffective as well. There is no effective mechanism to respond to and monitor disease outbreaks. The county government should establish a clear framework for communication of expectations in early signs. The county government should adequately fund drought emergency and recovery programmes. There is a need to have an effective mechanism to respond to and monitor disease outbreaks. Policies for strengthening coordination mechanisms should be well established.

Key Words: Drought management, Sustainable Economic Livelihood, Pastoral communities

BACKGROUND

Hayes & Knutson (2001) delineates that drought is a typical peril and varies from other perils for it has slow inception, develops over months as well as years, affects a large three-dimensional region, and results in little structural loss. Its inception is frequently challenging to establish, as is its harshness. Solh & Ginkel (2014) asserts that the main restraint influencing food security and people's livelihood residing in famine area is 41% of the world's population. Famine periods vary significantly, contingent on the timing of the initiation of the precipitation deficiency (UNDP-UNSO, 2000).

The livelihoods and economic wants in the Horn of Africa rely heavily on natural resources as well as agriculture which are sensitive to climatic changes (World Bank, 2010). Effective livelihood intrusions require effectual management; nevertheless, the fundamental challenge of the existing management technique is its delivery, with a distinct management structure for drought reaction and long-term development matters (Longley & Wekesa, 2008).

Longley and Wekesa (2008) assert that Kenya is a country where, crisis interventions are executed in

response to famine and are effective in respect of live-saving, nonetheless, they are not intended to tackle the protracted poverty that embodies the arid and semi-arid lands (ASALs). Subsequently, interventions towards drought in Kenya have simply attentive on saving lives but not on livelihood upgrading for instance addressing chronic poverty. Hence, the schoolwork pursues examining the effect of drought preparedness strategies on the sustainable economic livelihood of pastoral Communities in Garissa County.

A Statement of the problem

In Kenya, drought is the single most significant natural disaster which caused damages and losses of an estimated USD 12.1 billion between 2008 and 2011, (Republic of Kenya, 2012). Pastoralists are the main beneficiaries during the drought period. A case in point is the 2005–2006 droughts whose impact was extensive and severe subsequently affecting nearly 3.5 million farming people and rural pastoral in 26 districts. The primary effectual technique of relief provision in such situations is by protecting people's livelihoods (Longley & Wekesa, 2008). Supporting early warning systems, drought preparedness and management takes into deliberation seasonal to inter-annual climate predictions have been documented as critical measures to alleviate the impacts of drought (UNCCD).

Drought affects the pastoralists purchasing power and terms of trade which leads to serious livelihood implications leading some of the pastoralists to eventually fallout from the mainstream pastoralist life and are forced to move to peri-urban centres to maintain few remaining animals consisting of goats and sheep as they venture into other new alternative livelihood opportunities in the town settlements to survive (Aklilu, 2001).

Abdinoor and Asfaw (2008) assert that the intrusion to guard and uphold people's livelihoods has always otherwise habitually emerged belatedly to realize their anticipated impact. To avoid recurrent crisis, impoverished population and incapability to deal with numerous potential penury, a technique of maintaining their lives need to be initiated. There is a necessity to ascertain that the crisis does not ravage the pastoralist sustenance. In good and lamentable years these herds will increase and reduce, though they ought certainly not to be too minute to be feasible and too minute to endure a lamentable year.

Over the years there has been upgrading in drought response, but the wanted level of management has not been reached for reasons ranging from lack of responsiveness to absence of policies and tangible plans (UNDP- UNSO, 2000). Moreover, the relationship between drought management and livelihoods is commonly weak in practice and aggravated by the lack of satisfactory investigation in this field. Subsequently, this study was motivated to bridge the gap by examining the effect of drought management institutional framework on the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya.

B Research Objective

The research aimed at assessing the effect of drought management institutional framework on the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya.

C Scope of the study

The scope of the study included the pastoral Communities in Garissa County, Kenya, which includes Daarood and the corner tribes. It also involved 384 households and 10 administrators.

LITERATURE REVIEW

A Theoretical review

1 The Environmental 'Supply-side' Theory of Famine: Economic development can generally be effectively created by investing in capital as well as through decreasing obstacles in the production of goods and services (Wanniski, 1975). According to supply-side economics, clients will gain from lower prices on goods and services supplied; additionally, the business's investment and development raise the demand for employees consequently creating jobs. This approach is pertinent to the study since it considers drought and recent climate change factors in the explanation of distraction or reduction of food output. Furthermore, it focuses on environmental limitations on food output, mainly through the drought. Blaikie *et al.*, (2004) assert that the environmental supply side approach looks predominantly at hypothetical, likely reasons that decrease natural resources' capability to offer sufficient food supply. However, this approach is criticized on the basis that natural occurrences (like drought, flood and climate change) can act as triggers, rather than causing famines. Quite a lot of damages are human-related actions and relate to social vulnerability and a pre-existing, normal level of risks. Explicitly human action is accountable for the creation of peoples' susceptibility and increased level of risk (Blaikie *et al.*, 2004).

B Sustainable Economic Livelihood of Pastoral Community in Kenya:

Ouma (2011) contends that there is a link between susceptibility and climatic changes in livestock herding areas with extremely erratic and uncertain environments. The livelihoods of pastoralist communities pivot on the production of livestock. Issues that impact the progress and productivity of livestock adversely will directly construe livelihood loss and pastoralist susceptibility to severe climate measures. Conversely, Livestock productivity depends upon the size of the livestock that further relies on the existing forage, quality, quantity and water. A minor disparity in grazing land accessibility as well as water affects the economy of pastoralists' livestock. Pastoralists employ other substitute activities to supplement the deteriorating livestock support. However, environmental factors, political, cultural, and socio-economic limit the pastoralists' adaptation to climatic changes.

C Drought Management Institutional Framework on sustainable economic Livelihood of Pastoral Communities

Hussein (2015) sought to envision the effect of native drought management approaches on the living technique of pastoralists living in Mandera-West Sub County. The target populace in the take a look at were pastoralist families and key informants selected from stakeholders concerned with the development of the pastoralist groups in Mandera West Sub County in Kenya.

The stakeholders included key government departments, institutions and non-governmental organizations in the area. The study employed a descriptive survey design where data was collected, analyzed and interpreted for comparison and clarification. The study applied both qualitative and quantitative approaches using household surveys and key informant interview guides. The research established that herd diversification was an appropriate survival drought strategy adopted by pastoralist herders in Mandera West Sub County in Kenya. These drought management strategies have increased the survival of the pastoralist households, reduced the loss of livestock and increased the pastoralists' resilience to drought (Hussein, 2015).

The study established that migration was an effectual drought management approach implemented by pastoralists during the drought. 46% of the respondents migrated within their traditional grazing areas during the drought, where they moved their herds to relatively dry pastures and 33% preferred to migrate across the border into Southern Ethiopia. The study concluded that water and pasture scarcity had adverse effects on the survival of livestock during the drought and pastoralist households made timely decisions on when to move and when it was best to migrate and established surveillance and traditional early warning

systems that helped them in appropriate decision making (Lekapana, 2013).

The study recommended the exploitation and establishment of water points and facilities across the grazing land, especially underground water to ease the concentration of livestock around water points close to grazing lands which were causing degradation of the pasture land. The study also recommended the need for policy change in the management of communal grazing lands to increase pastoralists' participation in the conservation, protection and management of natural resources.

Lekapana (2013) surveyed the socioeconomic effects of the dry spell on herders, acclimatizing techniques and government intrusions in Marsabit County, Kenya. Employing both qualitative and quantitative methodologies, the studies exploited desktop surveys of significant manuscripts, semi-designed questionnaires plus interrogate agenda on significant informers and focal points. Multi-phase sample distribution techniques will be employed on families. Loiyangalani herders identified drought as rain deficiency and pigeonholed it as minor or major. Longley and Wekesa (2008) argue that Livestock deaths and weariness, human agony, clashes, food uncertainty, diminishing stock prices, in addition to escalating food prices are among the socioeconomic effects of drought occurrences.

The acclimatizing in addition to adjustment instruments utilized by the pastoralists incorporated versatility, group broadening, crowd part/combining, animals' sales, and employment enhancement among others. The study disclosed that government intrusion has been to an immense level through disaster food aid provision. The government has set up an approach and institutional structure to address the issue of dry spells. Nevertheless, scanty financing and low prioritization have slowed down the techniques of feasible practice. The study prescribes an approach process devised concerning the diversification of pastoral living and resilience promotion. This incorporates the institution of road infrastructure, livestock trade and marketing, veterinary service provision, water resources development and, improvement of water assets and public health facilities provision (Bekele *et al*, 2008).

RESEARCH METHODOLOGY

The study employed a descriptive research design which is employed in preliminary and explanatory studies that allow data collection, summary, presentation and interpretation for clarification (Orodho, 2009). The study targeted 623,060 people living in six Sub-Counties of Garissa County, and the household population is 98,590 (KNBS, 2009). The study adopted a Multistage Sampling Approach to household representation as a statistical unit. The sample size for the current study was determined using Fisher's (1983) formula to arrive at a sample size, therefore, included 384 households and 10 administrators chosen, where the researcher adopted a purposive sampling technique in selecting the respondents who were involved in the study. Qualitative and quantitative techniques were employed for data analysis.

DATA ANALYSIS AND FINDINGS

The data was analysed using descriptive and inferential statistics. The validity and reliability of the instruments was ascertained through pilot testing. Regression analysis was used as the statistical test to assess the relationship between the variables.

A The effect of drought management institutional framework

The study adopted a 5-point Likert scale of; 1= strongly disagree, 2= disagree, 3= moderately agree, 4= agree and 5= strongly agree.

The study requested the respondents to indicate their levels of agreement with questions relating to the drought management institutional framework. From the study findings, the majority of the respondents

disagreed with statements that there exists a clear framework for communication of expectations in early signs and that there exist well-established frameworks for following up disease outbreaks as shown by a mean of 1.76 in each case, the County government has well-established policies for strengthening coordination mechanisms as shown by a mean of 1.77, there exists a well-established framework for emergency funding as shown by a mean of 1.88.

The respondents further disagreed that there exist well-established frameworks for restocking in case of an emergency as shown by a mean of 1.91 and that there exists a framework for the coordination of activities regarding early warning systems as shown by a mean of 2.00. The respondents' opinions were less diverse as shown by the low standard deviations in each case.

Table 1: Statements relating to the effect of drought management institutional framework

Statement	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree	Mean	Std deviation
There exists a framework for the coordination of activities regarding early warning systems	5	12	36	196	74	2.00	0.242
There exists a clear framework for communication of expectations in early signs	0	3	16	206	98	1.76	0.274
There exists a well-established framework for emergency funding	2	8	31	189	93	1.88	0.242
There exist well-established frameworks for following up on disease outbreaks	0	3	17	201	102	1.76	0.269
There exist well-established frameworks for restocking in case of an emergency	3	10	31	189	90	1.91	0.240
The County government has well-established policies for strengthening coordination mechanisms	0	3	18	205	97	1.77	0.272

A further analysis sought the effectiveness of the drought management institutional framework in Garissa County with a 3-point rating scale of very effective, effective and not effective.

Table 2: Effectiveness of the drought management institutional framework in Garissa County

Drought management institutional framework for;	Very effective	Effective	Not effective	Mean	St deviation
Communicating early warning signs of drought to the community and other authorities	0	1	6	2.86	0.459
Drought emergency funding	0	2	5	2.71	0.360

Coordinating activities meant to support the community in case of drought	1	1	5	2.57	0.330
Responding to and monitoring disease outbreaks	0	2	5	2.71	0.360
Restocking after drought	0	1	6	2.86	0.459

The study sought to find out the effectiveness of the drought management institutional framework in Garissa County. From the study findings, the majority of the respondents indicated that Communicating early warning signs of drought to the community and restocking after the drought was not effective as shown by a mean of 2.86 in each case, Drought emergency funding and Responding to and monitoring disease outbreaks were not effective as shown by a mean of 2.71 and that coordinating activities meant to support the community in case of drought is not effective as shown by a mean of 2.57. This implies that the drought management institutional framework in Garissa County is not effective.

The study enquired from the respondents about the County government in terms of establishing drought management institutional frameworks to manage drought. Both the county and national governments have tried to establish water points and facilities across the grazing land to ease the concentration of livestock around water points however very few of the water points are effective. The study findings concur with those of Lekapana (2013) who found that government the government has set up an approach and institutional structure to address the issue of dry spell however scanty financing and low prioritization has slowed down the techniques of feasible practice.

The study further requested the respondents to explain some of the existing frameworks at both County and National governments regarding drought management. From the findings, respondents indicated that there is the management of communal grazing lands however the management is not as effective as it ought to be in making sure that pastoralists participate in the conservation and protection of natural resources.

Regression Analysis

Regression analysis was used to determine the significance of the relationship between drought management institutional framework and sustainable economic livelihood of pastoral Communities in Garissa County, Kenya.

From the findings in the model summary table 4.4, the value of adjusted R squared was 0.545 indicating that 54.5 per cent of the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya could be explained by drought management institutional framework. This shows that 45.5% of the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya can be explained by other factors, other than the drought management institutional framework.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741 ^a	.549	.545	.28001
a. Predictors: (Constant), drought management institutional framework				

Table 4: ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	42.10	1	42.104	48.92	.012b
Residual	276.29	321	0.86072		
Total	318.39	322			

From the findings, there was a significant goodness of fit of the model as the significance level was 0.01% which shows that the data is ideal for concluding the population’s parameter as the value of significance (p-value) is less than 5%. The F critical at 5% level of significance, 1 d.f, 321 d.f was 3.871 while F calculated was 48.92, since F calculated is greater than the F critical ($F_{cal} = 48.92 > F_{cr} = 3.871$), this shows that the overall model was significant.

From the regression coefficients in Table 5, holding the drought management institutional framework to a constant zero, the sustainable economic livelihood of pastoral Communities would be 1.113. The results show that the drought management institutional framework has a positive and significant effect on the sustainable economic livelihood of pastoral Communities as shown by a regression coefficient of 0.593 (p-value=0.000). A unit increase in drought management institutional framework would lead to an increase in the sustainable economic livelihood of pastoral Communities by 0.593 units. At a 5% level of significance and 95% level of confidence, the drought management institutional framework variable was significant ($p < 0.05$).

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.113	.159		7.020	.000
	Drought management institutional framework	.593	.048	.741	12.476	.000

a. Dependent Variable: the sustainable economic livelihood of pastoral Communities

CONCLUSION

The study concluded that there lacks a clear framework for communication of expectations in early signs as well as a well-established framework for following up disease outbreaks. The County government lacks well-established policies for strengthening coordination mechanisms. There lacks a well-established framework for emergency funding and a well-established framework for restocking in case of an emergency. The drought emergency funding, restocking after drought, coordinating activities meant to support the community in case of drought, monitoring disease outbreaks and communicating early warning signs of drought to the community and other authorities are ineffective.

Both the county and national governments have tried to establish water points and facilities across the

grazing land to ease the concentration of livestock around water points however very few of the water points are effective. There is the management of communal grazing lands however it is not as effective as it ought to be in making sure that pastoralists participate in the conservation and protection of natural resources.

RECOMMENDATIONS

The county government should ensure that the drought management framework has a clear communication structure of early warning signs of drought to the community and other authorities in the region. The county government should budget for drought emergency and recovery programmes. The county and national government should ensure that there is an effective mechanism to respond to and monitor disease outbreaks. Policies for strengthening coordination mechanisms should as well be established.

A Suggestions for further research

The study examined the effect of the drought management institutional framework on the sustainable economic livelihood of pastoral Communities in Garissa County, Kenya. The study suggests further research be done on the relationship between drought forecasting and drought preparedness in pastoral Communities.

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