

Gender, social capital and adaptive capacity to climate variability

A case of pastoralists in arid and semi-arid regions in Kenya

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Abstract

Purpose – The purpose of this paper is to investigate the relationship between gender and social capital in adapting to climate variability in the arid and semi-arid regions in Turkana in Kenya.

Design/methodology/approach – This paper undertook literature review of secondary data sources, conducted focus group discussions (FGDs) and key informant interviews (KIIs). The statistical package for the social sciences (SPSS) was used to analyze data for the quantitative part of the paper.

Findings – Vulnerability is influenced by age, gender, education and disability. Elderly women are considered to be the most vulnerable to climate variability and change because they are the poorest in the community, followed by elderly men, the disabled, female-headed households, married women, men and, finally, the youth. Less than 30 per cent of women and men in both Katilu and Loima are able to read and write. The cross-tabulation results show that there is a statistical significant relationship between gender, age and education level and climate change vulnerability. This implies that gender, age and education level have a significant effect on climate change vulnerability.

Research limitations/implications – The research coverage was limited to only two regions in Turkana because of time and economic constraints.

Practical implications – The lack of attention to gender in the climate change literature has time and again resulted in an oversimplification of women's and men's experience of climate risks. Improved development assistance, investments and enhanced targeting of the truly vulnerable within pastoral societies demand an acceptance of underdevelopment in arid and semi-arid regions in Kenya because of historical imbalances in investment; the recognition that vulnerability of pastoralists is neither uniform nor universal and the need to consider differences like age, gender and education. Policy-makers should understand that pastoralists in the past have used indigenous knowledge to cope with and adapt to climate change. The current-recurrent and intensity droughts require investment in modern technology, equipping pastoralists with relevant information and skills to make them resilient to climate change and implementing existing and relevant policies for northern Kenya.

Social implications – This paper draws from several other efforts to show the critical relationships between gender, social capital and climate change. They are tracking adaptation and measuring development framework; ending drought emergencies common programme framework; and feminist evaluation approach.

Originality/value – This paper is important in identifying the link between gender, social capital and adaptation to climate change.

Keywords Gender, Adaptation, Climate variability, Pastoralists, Turkana

Paper type Research paper



1. Introduction

Africa's vulnerability to climate change largely depends on its current and future adaptive capacities. Climate change will interact with non-climate-related drivers and stressors to increase the vulnerability of Africa's arid and semi-arid regions ([Intergovernmental Panel on Climate Change, 2014](#)). Kenya is extremely vulnerable to changing climate because most livelihoods and economic activities are reliant on climate-sensitive natural resources. Rising temperatures, drought and floods in particular have devastating consequences for the environment, society and economy. Climate projections indicate that Kenya will experience a 20 per cent decrease in rainfall by the year 2030, which will translate to losses in agricultural production leading to human and animals' deaths ([Gosling *et al.*, 2011](#)).

In Kenya, the arid and semi-arid lands (ASALs) occupy 89 per cent of the country and are home to at least 70 per cent of the national livestock herd. The livestock sector in Kenya is very sensitive to climate change. It employs 50 per cent of the agricultural labor force and is the mainstay for over 10 million Kenyans living in the ASALs. It contributes approximately 5 per cent of agriculture's gross domestic product (GDP) ([Republic of Kenya, 2015](#)).

Strengthening local adaptive capacity is a critical aspect of adapting to climate change. [Eriksen and Lind \(2009\)](#) state that the national, political and economic structures and processes affect local adaptive capacity in various ways, such as through the unequal distribution of resources across regions, development policy biased against pastoralism and competition for elected political positions. Social capital is vital at different times to different social groups and it is a necessary bonding for economic development. Furthermore, social capital can lead to pulling together of resources for economic development; therefore, the prevalence of different types of social capital is important at different times to different social groups. [Adger \(2003\)](#) argues that collective action requires networks and flow of information between individual groups to be able to influence decision-making. This network acts as an asset to individuals and the society and can be referred to as social capital.

Pastoralists' livelihoods rely heavily on livestock rearing which plays a very important role in terms of social capital and as an insurance against climate risks (World Initiative for Sustainable Pastoralism, WISP, 2007). The ability to access, control and own productive assets such as labor, land, finance and social capital enables people to create stable and productive lives. It is evident that women's control of assets is associated with positive development outcomes at the household and individual levels.

Gender is very relevant in climate change adaptation. In addressing gender and adaptive capacity to climate change, it is important to take into consideration: sex, ethnicity, religion, literacy levels, culture, disability and age ([Denton, 2002](#); [Enarson, 2002](#)). [Van Aelst and Holvoet \(2016\)](#) argue that it is important to consider farmers' and pastoralists' marital status because it determines their access to various socio-economic resources, gendered like entitlements and material support from the family members needed for adapting to climate change. A research study by [Sonwa *et al.* \(2016\)](#) revealed that in Turkana, in northern Kenya, female-headed households lacked labor for herding and access to better pastures, which tend to be located in conflict-prone areas. Addressing gender issue is in line with the Sustainable Development Goals (SDGs) and Agenda 2063.

Women play a vital role within the pastoral production system. Though their role is often overlooked, women have been referred to as the "hidden hands" of pastoral production ([CARE 2014](#)). Pastoral women engage in cultural activities, socio-economic conservation and management of natural resources. They are responsible for household food supply, taking care of smaller, younger and sick animals around the homestead. They are also responsible for milking, milk processing and marketing.

When men migrate for longer periods to satellite camps in search for pasture or livestock markets, women are left responsible for taking care of her home, cattle and camels. [Barrow and Mogaka \(2007\)](#) argue that the situation of women and men in pastoral communities is not static because of climate risks which have led to transformation in the socio-cultural and socio-economic organization of pastoral societies. Generally, the lack of attention to gender in the climate change literature has time and again resulted in an oversimplification of women's and men's experience of climate risks ([McKune et al., 2015](#)).

2. Materials and methods

2.1 Background of the study area

Turkana County in northern Kenya borders Ethiopia, South Sudan to the north and Uganda to the west ([Rall and Horne, 2018](#)). Turkana County experiences long rainfall which is usually erratic and unreliable between the months of April and July, while short rains are experienced between the months of October and November. The rainfall ranges from 52 mm to 480 mm annually with mean of 200 mm. The temperature ranges between 20°C and 30.5° C (Reference). Turkana County has poverty index of 94 per cent and is one of the poorest regions in Kenya (Turkana County Integrated Development Plan – CIDP, 2013).

2.2 Study locations: Katilu and Namoruputh

The two study sites are Namoruputh in Loima division in Turkana Central (primary pastoral zone) and Katilu in Katilu division in Turkana South in Turkana County (agropastoralist zone) in the northern Kenya. The study sites were selected to demonstrate the varied livelihood activities within the ASAL region. [Figures 1 and 2](#) show the map of Katilu in Katilu Division and Namoruputh in Loima Division in Turkana, respectively.

2.2.1 Katilu location. Katilu location has a total area of 1,212.1 km². It lies 37° 27' East and has an altitude of 3,979. The district receives an average of 120-500 mm per annum of rainfall. Katilu division has a population of 12,548 (GoK, 2008). It only has 30 per cent of arable land located around the Turkwel and Kerio rivers. The land dedicated to irrigation in the district is 1,100 ha which provides livelihood to approximately 5,400 households.

2.2.2 Namoruputh location. Namoruputh location is in Loima division in Turkana. Loima covers an area of 3,475.4 km². Loima has a population of 33,979 (GoK 2008 b). The altitude of mountains of Loima and Lorengippi ranges between 1,500 and 1,800 meters above the sea level. The temperature in Turkana Central ranges between 20°C and 38°C; the mean temperature is 30°C. The short and long rains range between 52 mm and 480 mm annually, with the mean of 200 mm. The district latitude lies between 00 45' and 10 07 South, and longitude 360° and 370° 27' East (GoK, 2008 b). Pastoralism is the main economic activity in Namoruputh.

2.3 Data collection

Stratified random sampling was adopted for this study. The determination of the sample size was based on the demographic data and the clustering of households in the settlement areas using statistics from the Kenya Bureau of Statistics (KBS), Turkana County Government and Arid Lands Resource Management Project (ALRMP) in Turkana and from the public administration officers (Chiefs). The unit of analysis was the individual household, with every third household being selected for data collection. The target respondents of the closed/structured survey questionnaires were based on gender (either a woman or a man household head). The selection of the study sites in Turkana was based on the following:

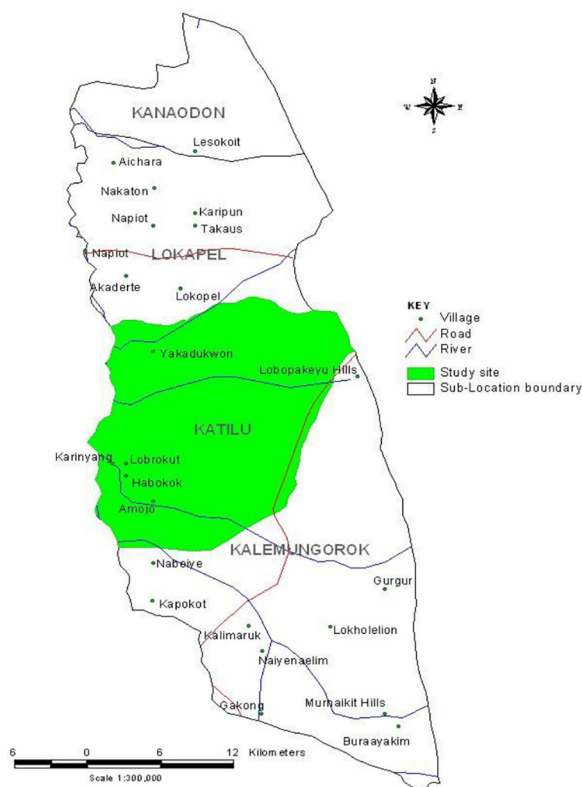


Figure 1.
Katilu division in
Turkana

- variability of socio-economic activities/types of livelihoods (that is, primary pastoralists and agro-pastoralists);
- the distance of case study areas from each other (to provide ecological, physical and livelihood differences); and
- security/access of the study site (this is because of frequent inter-ethnic and cross-border conflicts related to access to natural resources like water and pasture).

The total population of the study sites for Namoruputh and Katilu was 2,075 and 5,509, respectively. The numbers of households in Namoruputh and Katilu were 346 and 918. To enhance the statistical accuracy during data analysis, 30 per cent of the households were sampled, giving a sample size of 104 households in Namoruputh and 275 households in Katilu. Thus, a total of 379 households were interviewed ([Table I](#)).

2.4 Data analysis

This study used both quantitative and qualitative data. The study involved using literature review of secondary data sources, focus group discussions (FGDs) and key informant interviews (KIIs). [Plate 1](#) shows the FGDs in Namoruputh in Turkana. The qualitative data for various climate change themes were discussed and content analyzed in in-depth surveys.

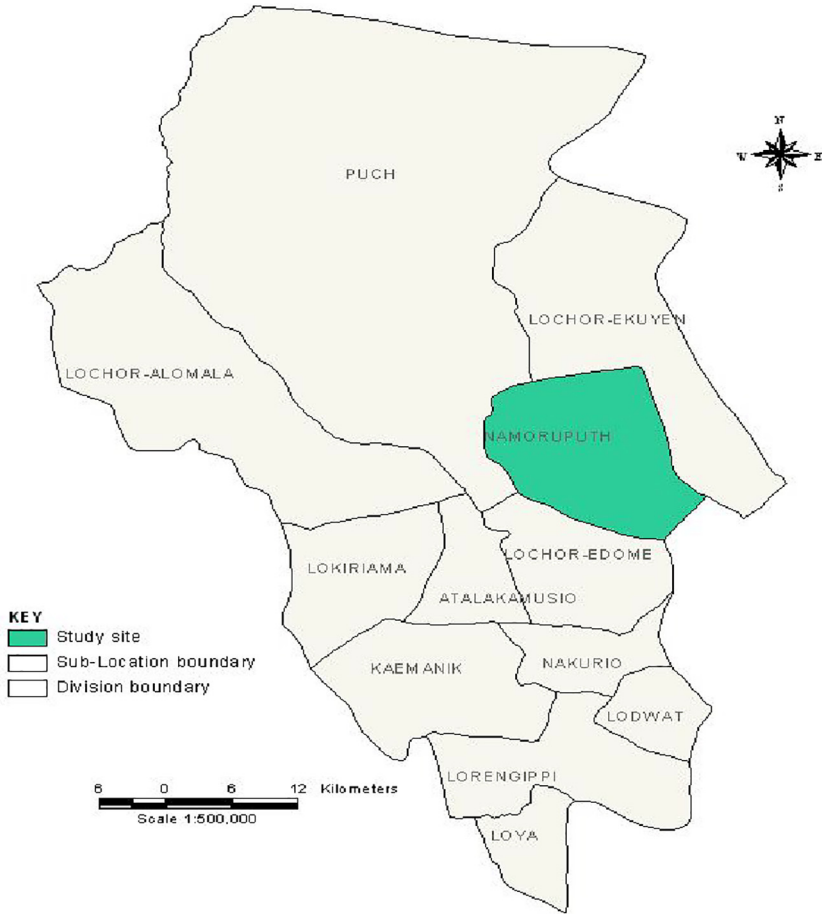


Figure 2.
Loima division in
Turkana

Study sites	Total population	Total number of households	Number of households sampled	Total number of women interviewed	Total number of men interviewed
Namoruputh	2,073	346	104	74	30
Katilu	5,509	918	275	204	78
Total	7,582	1,264	379	278	108

Plate 1.
Focus group
discussions in
Namoruputh in
Turkana



The statistical package for the social sciences (SPSS) was used to analyze the quantitative data. Statistical tests were performed for the distinct patterns that emanated from key themes. Frequencies and percentages were used to analyze the descriptive statistics. Cross-tabulation was used to determine the relationship between variables.

3. Conceptual and theoretical framework

The conceptual framework presented here draws from several other efforts to show the critical relationships between gender, social capital and climate change. They are: tracking adaptation and measuring development (TAMD) framework; ending drought emergencies common programme framework; and feminist approaches.

3.1 *Tracking adaptation and measuring development*

TAMD is a conceptual framework to monitor and evaluate climate change adaptation. TAMD evaluates adaptation success as a combination of how well countries/institutions manage climate risks (Track 1) and how successful adaptation interventions are in reducing climate vulnerability and in keeping development on course (Track 2). The TAMD's dual approach can track adaptation at all levels and from all sources, from initiatives involving several countries, various interventions in a single country and right down to local projects. It is able to assess whether climate change adaptation leads to effective development and also how development interventions can boost communities' capacity to adapt to climate change. It does this by evaluating an intervention within and across the two tracks (sources).

There have been various approaches before like *sustainable livelihood approach (SL)*. This livelihood thinking originated and is widely attributed to the work of Robert Chambers in the mid-1980s. He developed this alternative approach because the conventional development concepts did not yield the desired effects and that humankind was additionally facing an enormous population pressure (reference). The SL framework has been widely used by researchers and development organizations.

Livelihood is defined by [Chambers and Conway \(1992:7\)](#) "as comprising the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term." The DFID's SLF embraces a holistic concept of livelihood strategies which is based on human capital, physical capital, financial capital, natural capital and social capital deemed as a helpful approach in understanding the livelihoods of the poor (FAO *et al.*, 2009).

3.2 *Ending drought emergencies common programme framework*

This research uses the ending drought emergencies common programme framework, which is a new approach and recognizes that droughts cause emergencies because the foundations needed to support sustainable livelihoods in drought-prone areas are weak; therefore, there is a need to strengthen the basic foundations for growth and development, for example, security, infrastructure and human capital (education, health and nutrition). Second, there is the need to strengthen institutional and financing framework for drought risk management.

3.3 *Feminist approaches*

Feminist approaches explore why differences between women and men exist. It challenges women's subordinate position and attempts to strategically affect women's lives, as well as

the lives of marginalized persons. It acknowledges and values differences, not considering women as a homogenous category. It acknowledges that women may not want the same, that would affect criteria, conclusions, judgments and recommendations. It guides evaluators to be reflexive: evaluations are not value free, consider different ways of knowing, stress different voices and give voice to women within different contexts and advocate for marginalized groups reference.

A gender approach can also be helpful in designing and implementing policies, programmes and projects that lead to greater equity and equality. Especially, it may contribute to building more capacity to adapt to and mitigate against climate change impacts, because it gives a clearer and more complete view of the relations people have built with ecosystems (United Nations Development Programme, [UNDP, 2009](#)).

There have been many approaches to gender discourse in the past. The *women in development (WID) approach* was developed in the 1970s, with the objective of designing actions and policies to integrate women fully into development. *The gender and development (GAD) approach* was developed in the 1980s with the objective of removing disparities in social, economic and political equality between women and men as a pre-condition for achieving people-centred development.

4. Results

4.1 Composition of households head

Turkana has more male-headed households than women-headed households. During this study, 75 per cent of the participants were male-headed households, 24.17 per cent female-headed households and 0.83 per cent child-headed households.

4.2 Perceptions on vulnerability to climate change by gender and age

The respondents were requested to indicate the most vulnerable group in regard to climate variability (drought and floods). Results are presented in [Table II](#).

Results in [Table II](#) show that elderly women are considered to be the most vulnerable at 27 per cent of respondents, followed by elderly men (25 per cent) followed by the disabled (24.7 per cent), female-headed households (13.7 per cent), married women (5 per cent), men (3.6 per cent) and youth (1.8 per cent).

Elderly women and men are likely to be vulnerable because of their dependence on their families; they are weak and sometimes get no assistance from their families. The disabled on the other hand are likely to be vulnerable because they are have limited opportunities and they experience discrimination by some of the family members and the community. Female-headed households might be vulnerable if they do not have sons to assist in herding of the animals. Also, female-headed households are vulnerable because they have less income and they are not well-represented in decision-making within the community.

Married women are more vulnerable than married men because of their reproductive and communal roles. At the same time, when men migrate because of climate risk, women become the household head and also provide security for homestead. The respondents

Table II.
Composition of
households head

Household head	(%)
Male headed	75.00
Female headed	24.17
Child headed	0.83

stated that men become vulnerable as a result of the death of their livestock because of drought and cattle rustling. When men lose their livestock, they also lose status and dignity within the community.

The cross-tabulation results show that there is a statistical significant relationship between gender and climate change vulnerability ($\chi^2 = 28.665$, p -value = 0.000) and age and climate change vulnerability ($\chi^2 = 431.88$, p -value = 0.002). This implies that gender and age have a significant effect on climate change vulnerability.

4.3 Linkage between gender, education and vulnerability

The respondents were requested to indicate the level of education in terms of reading and writing skills. Results are presented in [Table III](#).

Results in [Table III](#) show that only 27.73 per cent men and 10.26 per cent women in both Katilu and Loima are able to read and write. Majority of both males and females were unable to read and write across the two regions studied. The number of men who can read and write are more than women. The cross-tabulation results show that there is a statistical significant relationship between education and climate change vulnerability ($\chi^2 = 90.575$, p -value = 0.000). This implies that education level has a significant effect on climate change vulnerability.

4.4 Adaptation strategies

The most common adaptation strategies to drought include: construction boreholes/reservoirs at 21 per cent, migration to places with water at 19 per cent and digging shallow wells at 10 per cent. The pastoralists in Turkana are dependent on both modern technologies and indigenous adaptation strategies built on social capital to cope and adapt to drought. However, the present socio-economic situation combined with climatic risks cannot support the vulnerable households who are exposed to climatic risks ([Kareithi, 2010](#)).

Research undertaken by [Baird and Gray \(2014\)](#) revealed that indigenous social networks of exchange and reciprocity are critical components of household security and well-being. The inter-household exchanges of material goods (IHE) and the association between IHE and livelihood diversification are both evolving and declining and are negatively associated with livelihood diversification. [Ojoyi and Mwenge Kahinda \(2015\)](#) state the need for laying emphasis on the advancement of both indigenous and imported technologies. It is essential for governance structures to capitalize on effective adaptive

Group	(%)
Elderly women	27.0
Elderly men	25.0
Disabled	24.7
Female-headed house hold	13.7
Married women	5.0
Married Men	3.6
Youth	1.8
<i>Cross tabulation</i>	<i>Chi Square (p-value)</i>
Gender and Vulnerability	28.665 (0.000)
Age and Vulnerability	431.88 (0.002)

Table III.
Gender, age and climate change vulnerability in Turkana

strategies and innovative solutions as a positive measure for responding to the adverse effects of climate variability.

4.4.1 *Migration as an adaptation strategy to climate change in Turkana.* The respondents were requested to indicate on the reasons for migration. Results are presented in [Table IV](#).

Results in [Table IV](#) show that pastoralists are transforming into semi-pastoralists; 46 per cent are staying where they were born, 34 per cent have lived in the same place for over 20 years and only 13.3 per cent have lived in Katilu and Namoruputh for less than five years. Mobility is the key coping strategy for pastoralists in search of water and greener pasture, conflicts, larger pieces of land, cultural practice and disease outbreak. The cross-tabulation results show that there is a statistical significant relationship between migration and climate change vulnerability ($\chi^2 = 35.454, p\text{-value} = 0.000$).

4.5 *Institutional support and capacity building*

The respondents were requested to indicate if they have attended any training regarding the adaptive capacity. Results are presented in [Table V](#).

[Table V](#) shows that majority of the respondents who were 51.2 per cent indicated that they have attended training, while 48 per cent indicated that they have not. Majority of the male at 30.47 per cent indicated that the training attended helped them to cope up with climate variability as compared to only 20.73 per cent of female. The cross-tabulation results indicated that there is a significant association between attending a training and using the information to cope/adapt to climate change ($\chi^2 = 53.98, p\text{-value} = 0.000$).

Table IV.
Education: Ability to read and write

	Ability to read and write		Total
	Yes	No	
<i>Gender of respondent</i>			
Male	38 (27.73%)	99 (72.27%)	137
Female	36 (10.26%)	315 (89.74%)	351
Total	74	414	488
<i>Cross tabulation</i>			<i>Chi Square (p-value)</i>
Education and Vulnerability			90.575 (0.000)

Table V.
Reasons for migration

	N	(%)
Search for greener pastures	177	27.4
Conflicts	143	22.1
Search for water	169	26.2
Larger pieces of land	39	6.0
Culture	13	2.0
Disease outbreak	105	16.3
Total	646	100.0
<i>Cross tabulation</i>		
Migration and Vulnerability	<i>Chi Square (p-value)</i> 35.454 (0.000)	

Further, a cross-tabulation was performed between gender and training. Results are presented in [Table VI](#) ([Table VII](#)).

5. Discussions

5.1 Perception on social vulnerability to climate change

[Opiyo et al. \(2014\)](#) state that pastoralists' perception of climate change is significantly associated with gender of the household head, whereby male-headed households are perceived to be less vulnerable than female-headed households. A study undertaken in Vietnam revealed that perceptions of climate change do not appear to be individual but rather disaggregated at the household level ([McKune et al., 2015](#)). [Shisanya and Mafongoya \(2017\)](#) argue that even within the same locality vulnerability to climate change will vary significantly. There cannot be blanket recommendations on dealing with vulnerabilities to climate change even at the household level. In addition, [Jiri et al. \(2017\)](#) study revealed that the age of the household head, gender and members' fitness for work in the household are important in the choice of an adaptation strategy. In various parts of the world, women are more vulnerable to climate variability and change, as they have less access to education and information necessary to manage climate-related risks to agriculture (including pastoralism) ([Jost et al., 2016](#)).

5.2 Adaptation strategies

5.2.1 Migration and sedentarization. The transformation of pastoral production system is occurring because of economic, political, demographic and environmental changes. Prolonged droughts, population growth, expanding crop agriculture, political insecurities including civil wars and ethnic conflicts and conservation policies have all affected the ability of mobile pastoralists to keep their large herds, move freely across the dry lands and rely on mobile pastoralism as a livelihood system ([Ekaya, 2005](#)).

	Has any of the information you received helped you to cope with floods/droughts?	
	Yes (%)	No (%)
<i>Have you attended any training?</i>		
Yes	51.2 (Male = 30.47, Female = 20.73)	48.8
No	13.2	86.8

Notes: Chi-square value = 53.98; df = 1; $p = 0.000 < 0.05$

Table VI.
Training and using information for adaptive capacity to climate change

	Have you attended any training?	
	Yes (%)	No (%)
<i>Gender of respondent</i>		
Male	33.7	66.3
Female	18.2	81.8

Notes: Table IV shows that there is a significant relationship between gender and attending training $p < 0.001$; more men than women are attending the capacity building trainings Chi-square value = 10.225; df = 1; $p = 0.001 < 0.05$

Table VII.
Difference between gender and attending training

Migration at the levels of individuals and households represents an important adaptive strategy. It can potentially contribute to poverty alleviation, by diversifying income sources of at the household's levels, provided that conditions for migrants are improved. Migration improves access to financial and social capital, reduces pressure on natural resources and makes communities less vulnerable to extreme weather events and other shocks (Birk and Rasmussen, 2014). Nonetheless, so far, migration is receiving limited attention in adaptation policy and planning.

5.2.2 Social capital. In Turkana, more women belong to social groups than men, but it has no significant correlation, as the majority of women and men do not belong to any social groups. Generally, there is a decline in social capital. Women's organizations have proven to be effective vehicles for improving food security and community-based management of natural resources. For example, self-help groups can address and improve women's access to land use and tenure, water rights, livestock production, credit and financial services, markets and transportation, agricultural extension services, participation in decision-making and community development, improved capacity-building that takes gender differences into account (IFAD, 2010).

Research undertaken by Baird and Gray (2014) revealed that traditional social networks of exchange and reciprocity are critical components of household security and well-being. The IHE and the association between IHE and livelihood diversification are both evolving and declining and are negatively associated with livelihood diversification. Ojoyi and Mwenge Kahinda (2015) state the need for laying emphasis on the advancement of both indigenous and imported technologies. It is essential for governance structures to capitalize on effective adaptive strategies and innovative solutions as a positive measure for responding to the adverse effects of climate variability.

5.3 Institutional support and capacity building

Enhanced adaptive capacity means acquiring human and social capital with the right governance structures in place (Vincent, 2007). Local institutions have the capacity to equip local communities with new knowledge on the impacts of climate change and how to manage likely future uncertainties and risks (Boko *et al.*, 2007).

The changing and unpredictable climatic patterns and extremes pose great challenge to pastoralists' livelihoods. Climate information is a valuable resource for communities, county governments and other service providers to make more informed decisions, make effective and timely risk management, develop adapted and diversified livelihoods options that will reduce vulnerability and enhance resilience (Ambani and Fiona, 2014).

Enhanced risk management and the emerging diversification in pastoral areas is a complex issue requiring better access to information. There is evidence in Ethiopia and Kenya that better access to markets and market information increased rates of livestock sales and reduced livestock losses during drought. Furthermore, it provided better opportunities to re-stock when ecological conditions improved (Eguru, 2016).

6. Conclusion

Vulnerability is influenced by age, gender and education. Elderly women are considered to be the most vulnerable to climate variability and change because they are the poorest in the community, followed by elderly men, the disabled, female-headed households, married women, men and, finally, the youth. Less than 30 per cent of women and men in both Katilu and Loima are able to read and write. The cross-tabulation results show that there is a statistical significant relationship between gender, age and education level and climate

change vulnerability. This implies that gender, age and education level have a significant effect on climate change vulnerability.

This research has shown that there is a significant correlation between capacity building trainings and gender, as more men participate in the trainings than women. There is also a significant correlation between attending a training and using the information to cope/adapt to climate change. More men than women who have attended the trainings are using the information to cope/adapt to climate change.

7. Recommendations and policy implications

It is obvious that the people in Turkana have lived with drought for many years, and understand the occurrences and impacts. Perceptions of communities to climate change should be considered by policy-makers in advancing strategies to mitigate impacts of climate change. Household-specific interventions should be considered in mitigating climate change. Age, gender and income should be considered in all interventions, as vulnerability is linked to age, gender and income. There exists a gap between the technical-scientific approaches and the community information and knowledge status. It is important to know which institutions, policies, knowledge and information gaps are needed; this will contribute to addressing the current drought-induced problems. It is important to understand why less women than men are attending trainings. It is also important to understand why fewer women than men are using the information from the training to cope and adapt to climate variability.

Vulnerability of pastoralists to climate change could be reduced by supporting pastoral women through capacity building, including direct access to markets and training to improve the quality and marketability of their work and managerial skills. It is also important to support training programmes focused on leadership, decision-making and communication to enable pastoralist women to effectively participate in negotiations, workshops and trainings in all issues affecting their ways of life. The local institutions have the capacity to equip local communities with new knowledge on the impacts of climate change and how to manage likely future uncertainties.

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