The Political Ecology of Peasant-Herder Conflict in Myomero District, Tanzania

Msafiri Yusuph Mkonda

Department of Physical Sciences, Faculty of Science, Sokoine University of Agriculture, Box 3038, Morogoro. Tanzania

Abstract. It is worthwhile to address the peasant-herder conflict because of their rampant increase in most developing countries. Rigorous and integrative studies on this aspect can significantly contribute to the growing literature in herder-peasant interactions in most Sub-Saharan African countries, and ultimately, facilitating sustainable use of available natural resources. The arrival of pastoral societies in Morogoro Region during 1990s seemed to be unproblematic because the region had large uninhabited land. Afterwards, the increase in population of both peasants and herders, and land grabbing for large scale investments compressed the people into a small area which could not carry them comfortably and peacefully. This paper investigates the causes, impacts and resolutions of peasant-herder conflict in Mvomero District, Morogoro Region, one of the most affected area by such conflict in the Central-eastern Tanzania. The results from such a study can be of help toward the establishment of new methods of curbing the authentic and potential problems in the country. The findings from questionnaire and field interviews showed that there is an increased cases of killings and confiscation of resources and wealth among the two groups. While hundreds of people are reported to be killed, thousands of them have escaped to other areas just within the past two decades. Despite of that, each group still claims to have right over resource utilization in the area. Political and socio-cultural resolution have been used to calm the situation, however, it has not yet been fruitful. For the successful resolution, therefore, there is a need to address this acute issue in a more participatory way. The harmonized policy advocacy is among the best approach to resolutions. Others may include: the review of village land use plans, creation of awareness toward herders to abandon their traditional transhumance nature of livestock keeping and adopt the sedentary livestock keeping which is economic viable and environmental friendly.

Keywords: Crops damage, Herds confiscation, Political ecology, Peasant-header conflict, Mvomero

INTRODUCTION

The story in the bible about the conflict between Cain (farmer) and Abel (herder) which led the former to kill the latter can be stipulated as a profound originating cause of the current farmers herders conflict (Benjaminsen et al. 2009). Furthermore, Bassett (1988) explained in his study about farmer–herder conflicts in Ivory Coast, 'a weakness of human ecological analysis of peasant–herder conflicts is their failure to address

sufficiently the politics of land use'. The author (Bassett) instead "proposes to study these conflicts within a political ecology framework, which implies viewing farmer-herder conflicts as 'responses in context'.

Most pastoralists use transhumance system of livestock keeping and they are proud of the increasing number of their herd despite the

ISSN: 2395-6542

environmental impacts that may be caused. The Fulani (pastoralists) in West Africa and Maasai of East Africa are good examples of this extensive livestock keeping (Scott 1998). These pastoralists come into conflicts with farmers when competing for land resources i.e. water and pasture (Mattee and Shem 2006). In addition, Rurai (2012) and Idrissou, *et al.* (2013) added that resource-use conflicts occur when different categories of resource users have competing demands for shrinking resources, and may attach different values to the resource base according to their perspectives.

The Maasai Pastoralists of East Africa have their own case in the region (Bryant 1998). They compete for land resources with farmers (Mwambene *et al.*, 2014). Farmers perceive fertile land and water sources as for crop production while the pastoralists perceive the two land resources as favorable for their herds (ibid). These two perceptions differ and lead to conflict. This conflict has brought insecure situation especially from 1999

to date (Maganga *et al.*, 2007). The current situation is not yet solved as some farmer-herder clashes are still in place (ibid).

A decline of resources base for pastoralism is viewed as a primary cause of the land-use conflict between peasant and herders in most Sub-Saharan African countries (Bassett 1988). This occurs because the land is fixed while population increases. In this context, whoever is gain the access to land, the other person loses it.

In connection to that, impacts of climate change has subjected the environment to excessive drought, hence pastures and water become stressed and scarce. This situation necessitates the people to squeeze into a small area with some water and pasture especially wetlands and basins (Benjaminsen et al., 2009). Sometimes tension between herders and peasants comes as results of disagreed fines and compensation which herders need to pay to either farmers or governments (Bassett 1988).



Plate 1: Herds in the study area

Source: Picture taken by Msafiri Mkonda in the study area, March 2015

The herders in the study area have group of herds in thousands. They believes that the best way of material possession is to own a big number of animals especially cow. This attitude has been instilled in herders mind from long time ago.

However, because of the change in terms of technology, climate, demands in quality products and risk in managing resources, there is a need to transform from that ideology and adopt the modern system of animal husbandry (intensification) rather than transhumance (Mwambene *et al.*, 2014).

Hereunder, Figure 1 is a conceptual framework of Political Ecology. Political ecology aims to use politics, administrative principles, legal pluralism and participatory approach in order to create favorable condition for sustainable utilization of the endowed resource base (Blaikie and Brookfield 1986).

It sets and gives better guidance on the resource ownership and use for individual and national development through political economy (Blaikie 1989). Thus, there should be good relationship between the state and people as well as among the resource users themselves (ibid).

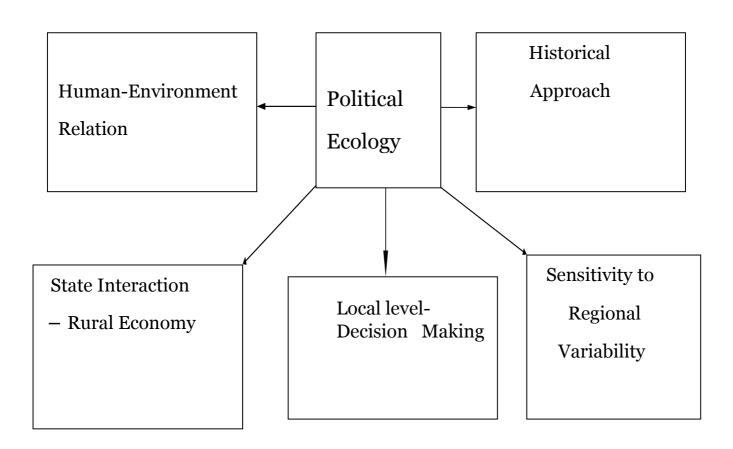


Figure 1: Conceptual Framework Showing Important Components of Political Ecology **Source:** Modified from Bassett's (1988) model of Political Ecology

Therefore, political ecology aims to solve all emerging conflicts related to the use of resource base, improve the development of all people and the nation at large. It aims to best use all component necessary for socio-economic development (Basset 1988).

Profile of the Study Area

Mvomero is one of the six districts of Morogoro region in Tanzania. It covers an area of about 14,0042km². It is located between latitudes 05° 80' and 07° 40'S and between longitudes 37°20' and 38° 05'E and lying between 300 to 400m above the sea level. The mean annual rainfall in the area is approximately 1,000 millimeters.

About 800 to 1000 millimeters of rainfall are received near the coast while in the inland areas towards Dodoma and north of the Wami sub-basin the average rainfall is between 500 to 600 millimeters per year. The drainage system of the area is mainly characterized by rivers that serve as sources of water for agriculture and domestic uses. Some of these rivers include Mvomero, Wami Sub-Basin and their tributaries. Kinyasungwe, Lumuma,

Mkondoa, Miyombo, Kisangata, Mkata, Tami, Rudewa, Lukigira, Diwale and Divue are the main tributaries to Wami River Sub-Basin (Hyera 2007).

Crop production and livestock keeping are the key economic activity in this area. The cultivation of sugarcane, rice, maize and sorghum is more predominant (Olmos 2001). Livestock keeping is mainly done by the Pastoralist societies especially the Maasai (Watts 2000).

There are number of ethnic groups living in the study area. To mention few includes: *Maasai*, *Sukuma*, *Nguu*, *Pogolo*, *Luguru*, *Vidunda and Kagulu* (Mkonda 2014). The majority of these groups are farmers. Only the Sukuma and Maasai are prominent pastoralists. The Maasai and Sukuma occupy and live in a number of villages such as Wami Dakawa, Wami Sokoine, Mvomero, Makuyu and others. In these areas, they compete for land and water with farmers

As a response of severe conflicts between the two groups (farmer-herder), some pastoralist have moved from areas with conflict in all over the country to Tanzania southern regions especially Lindi, Mtwara, Ruvuma and some parts of Mbeya especially the Usangu basin as their livelihoods option. They always move searching for pasture and water of their animals (Mwambene *et al.*, 2014).



Figure 2: A Map of Mvomero District showing **Makuyu** and **Mvomero** villages **Source**: Mkonda, 2014

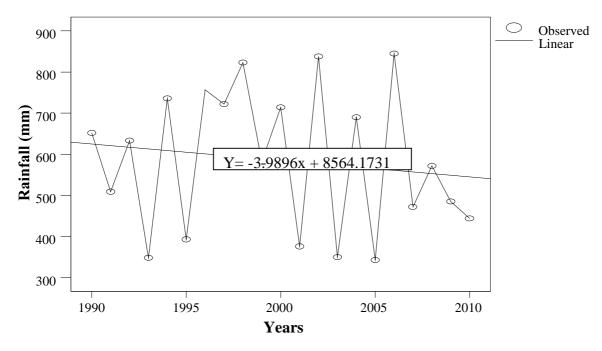


Figure 3: Mean Annual Rainfall at Kongwa Meteorological Station **Source:** Mkonda, 2014.

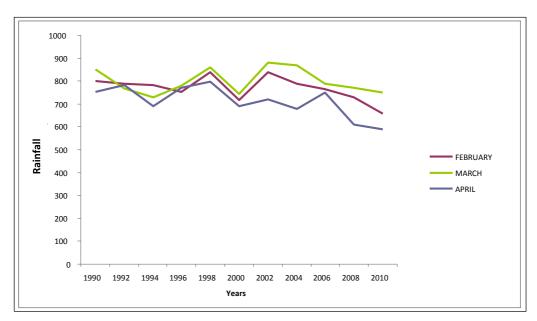


Figure 4: Rainfall Trends in the Study Area Depicting the Rainy Season **Source:** Mkonda, 2014

Recently, the study area has a fluctuating rainfall with a decreasing trend. According to the study by

Current Trend of Rainfall in the Study Area

Mkonda (2014) the mean annual rainfall patterns appear to decrease at a non-significant rate of R^2 =0.0207. Furthermore, the author's verdicts show that the mean annual rainfall has been fluctuating

overtime at a decreasing trend. Both temporal variability and decreasing rainfall pattern pose effects on the environment and affect negatively the biodiversity of the area (ibid). Figure 2 below explain about this rainfall trend.

Results in Figure 4 above show the general monthly rainfall trends for February, March and April in the study area. These month peaks the rainy season. It is

when people grow crops. The three months show temporal fluctuations of rainfall at a declining trend (Mkonda 2014). Rainfall seems to fluctuate at a decreasing trend. It is during this period when there are plenty of pasture and water in most areas (Mwambene *et al.*, 2014). However, during dry season especially July to December, there are poor vegetation on the ground and some water ponds and wells dries out (Hyera 2007).

Methodology

Sampling Design, Procedure and Sample Size This study was based on field work underataken in Mvomero District, in Morogoro region, Eastern Tanzania where Makuyu and Mvomero villages were sampled for this study and household was the sampling unit of the study.

The household was taken as a group of people who eat from a common pot, sharing the same house and may cultivate the same land (Njana 1998 in Mkonda 2014). Both random and purposive sampling was employed in selecting both the study area and/or sampling units (Mkonda 2014). Random sampling was used to select one ward out of 17 wards of Mvomero District as a preliminary stage of sampling (ibid).

Likewise, random sampling was used to select Mvomero and Makuyu villages among the villages in Mvomero ward (Kothari 2014). Furthermore, purposive sampling was used to select two sub-villages from each village so as to narrow down the study and be more focused. Geographical location, time, financial constraints, transport and communication networks were factors considered in the selection of these sub-villages (Mkonda 2014).

Purposeful sampling was also employed to undertake key informant interviews to respondents at ward and district level. The total of 250 households was sampled, 130 were peasants and 120 were pastoralists. Thus, about 125 households were randomly sampled from each of the two selected villages (Makuyu & Mvomero) to ensure that every household had equal chance to be selected for the study. Kipogolo and Mthunda sub villages were picked from Mvomero village whilst Mahange and Chanika sub villages were picked from Makuyu village.

Data Collection Procedures

We arrived at the field site early in March 2015 and introduced ourselves to the local authority. At that s few moment we discovered that the study area has experienced a lot of problems related to land conflict. Therefore, it was wealthier to show ourselves that we are researchers and we cannot take any side (herders or farmers) in our task. After that a ward executive officer gave us a go ahead. Two days later we started our work by administering questionnaire survey to households. In our research, questionnaire survey was the principle method for data collection. This was done after all procedures of sampling have been done.

Questionnaire survey was supported by PRAs tools such as key informative interview, group discussions and participant observation. We conducted three group discussions at every village and a number of informative interviews were held from village to district level. Occasionally we faced some challenges on the interview especially government leaders who sidelined with one group of the two. It was reported that some ward leaders and police officers were biased in their decision because they have been severally bribed by the rich people from either pastoralist group or farmers.

Other speculation was of more intelligence. However, we concentrated on the study. In this study key informative interviewee involved Village Executive Officer (VEO), Ward Executive Officer (WEO), District Executive Office (DEO), District Agricultural and Livestock Development Officer (DALDO), District Police Officer, Ward Police Officer, elders of both the pastoralist and farmers communities. This wide sample gave us multiple answers enough for us as researchers to evaluate. We

spent almost one month in the field area to collect. As well, during this period we consulted a number of stakeholders for the purpose of crosschecking the validity of the respondents' responses. As well, we had a direct overview of the study area to crosscheck different answers provided by our

1. Results and Discussion

Tribes Involved in the Conflict

The peasants and herders are the two main groups involved in the conflict. Herders involve Maasai and Sukuma to certain extent while peasants include; Lugulu, Pogolo, Vidunda, Nguu and Kagulu to mention few. But Maasai and Lugulu are the tribes which mainly forms the herders and peasants respectively (Table 1).

Table 1: Showing the Tribes Involved in the Land Conflict by Magnitude

Tribes	Frequency	Percent	Cum. %
Maasai	190	76	76
Lugulu	45	18	94
Sukuma	15	6	100
Total	250	100	100

Source: Field Survey Data, 2015

In this conflict there are number of reasons for why these people come into conflicts, and why they still quarrels despite the ruling and resolution of the government. According to questionnaire survey, about 90% of respondent in the study area assured that human activities such as agriculture, grazing animals and establishment of settlement cause land

respondents. Quantitative data were analyzed using Statistical Package for Social Science (SPSS) version 20 while qualitative data collected through PRAs tools were analyzed through content analysis. Then, results were mostly presented in tables.

conflict among the resource users as they compete for it (Mwambene *et al.*, 2014). It is only 10% who said that human activities cannot cause this conflict instead it is human interest and tribalism.

However, evidences from both questionnaire survey and PRAs tools show that most of these conflicts were caused by some pastoralist who graze their animals in peasant's farmer eventually destroys peasant's crops.

Another reason is the tendency of farmers/ peasant decided to kill some animals of pastoralists when they enter into their farms (Benjaminsen *et al.*, 2009). Daniel Ole Guads; One of the Maasai elder proclaimed that, "Farmers have invaded our cattle and killed them, later we were trying to rescue some of our captive animals, and that is when fighting began". This was in Myomero village.

Although political ecology is not interested in *who* is guilty and who is not guilty? But information from the field shows that each group has its mistake. According to field survey, their contribution differ in magnitude is seen in Table 2 below.

Journal of Advance in Social Science and Humanities CrossRef DOI: http://dx.doi.org/10.15520/jassh212153

Table 2: The Contribution of Each Tribe toward the Outbreak of the Land Conflict

Tribe/Ethnic Group	Frequency	Percent	Cumulative %
Peasants/Farmers	60	24	24
Pastoralist/Maasai	190	76	10
Total	250	100	100

Source: Field Survey Data, 2015

Despite of the results from Table 2 above, the summary from the three groups discussions that comprised of peasants and herders; had a results which showed each group to have been pointing the counterpart as a source of problem. In Table 3 below, these are the proposed possible solution of the problem.

Table 3: The determinants of Peasant-Herder Conflict in the Study Area

Ultimate Cause	Proximate Cause	Stressor	Counter Risk
Corruption	Insecure land rights	Political	Choose committed leaders
		Campaign/election	
Livestock Development	Transhumance	Theft of farmers'	Surveillance
Policy	pastoralist	herds e.g. cattle	
Semi-arid ecology of the	Low market value of	Crop damage	Proper compensation
area	animals		
Large scale investment in	Retaliation	Impact of Climate	Adoption of coping
the area		Change	mechanisms and
			adaptation
Herders immigration	Poor leadership	Biased judgments	Fair court judgment

Source: Field Survey Data, 2015 and as well modified from Bassett, 1988

Movement of Pastoralists/Herders

This involves the movement of thousands of herds in series from one place to another. They move with thousands of cattle. Currently, there is some emigration of cattle from the study area. However, there is some still coming in. During drought season the movement increases. They are searching for areas with pasture and water. Recently, there are some 2630 pastoralist accompanied by 272800 cows, 51160 goats and 21120 sheeps who left the study area to southern region of Tanzania (Makoye 2012).

The Rufiji District Commissioner Hon. Sauda Mtondoo estimated that around 4500 hectares of arable land have been invaded and destroyed by the immigrated cattle (Makoye 2012). Most of these immigrated herders were from Morogoro especially

Mvomero district. All these movements come as a result of a number of factors but generally stresses from the impacts of climate change. The movements of cattle from the study area can be viewed as a response or mitigation measures towards the said stress.

ISSN: 2395-6542

Crop Damage

All in all the usual influx of thousands of cattle in the peasants' farms must cause damage of high magnitude. Information on crop damage were collected in the study area from the sampled respondents. During discussion, we asked farmers if cattle have entered in their farms and destroyed crops in the past five years. We asked specific questions focusing on the location of destruction, types of crops, time of the day (whether is night or day) and the extent of crop damage (Bassett 1988). Results from group discussion show that an average of 60 cases was reported every year which means about quarter of respondents household were affected. These impacts were quantitatively estimated 500 bags of maize were destroyed. Therefore, the average of 500 bags times five years of incidences, the total loss was estimated to 2500 bags of maize. This loss has pronounced impacts to food security. For instance, according to FAO's standard; an adult person has to eat 0.65kg of starch per day; therefore, 2500bags@100kg can lead to a total of 250,000kg.

Therefore, this loss amount could help the samples respondents (250) to eat for about four years. This data on food loss shows magnitude of the destruction. Besides, some herders admitted that sometimes happens that their cattle enter in the peasants' farm arbitrarily; however they remove them before causing much effect. But they said even peasants tend to invade their cattle. They confiscate their cattle and demand a very big fine without actual quantification. If this is a case, it is not acceptable to randomly estimate the damage and subject it into fine or compensation for crop destruction. They said, sometimes this estimate can go to five times or ten times than the actual loss that needs to be compensated. Therefore, win-win situation is needed between peasant and herders.

Local Dimension to the Conflict

At the study there were a lot of claims on how things were going. The results from the conflict show that there was unfair compensation of the demage. Verdicts from PRAs tools show that about 50% of all cases were not compensated or poorly compensated even though some cases were solved at preliminary stage (family level). This kind of preliminary solution is supported by Bassett (1988), Blaikie (1989) and Benjaminsen et al., (2009) as it brings peace and harmony in the community and it is what political ecology encourages.

Land conflict has caused massive impact in the study area. These impacts cut across death of people and animals, destruction of properties and migration of people to other areas fearing of death. The conflict affects all people in the community even though their impacts differ in magnitude. In all instances women and children are more vulnerable to the crisis. Different studies show that when such crisis happens, men go away and leave women, children and old people languishing behind. This verdict is supported by Benjaminsen et al., (2009) in his article "The Kilosa Killings": Political Ecology of a Farmer-Herder Conflict in Tanzania Effects of Conflicts. Sometimes youth are vanishing in the fighting leaving their wife (widows) and old people to take care the families of the deceased.

The fighting between pastoralist and peasants on the crisis of land use has caused death of people (Hyera 2007). This is supported by Abdullah Sayeka, the 57 farmer who proclaimed that "The Maasai and Sukuma always invades us while in our farm then kills us as they say; we have to leave their area so as they can use for pasture of their herds". He added that, "sometimes these events are not reported to higher authority as the Maasai can bribe about everyone in the leadership authority especially at ward level". In actual facts both peasants and pastoralist demands land for their own interest that made them to fight themselves and cause death. Results from group discussion shows that there is a lot of unrevealed death information in the area because people are afraid of it. But all in all, the Maasai cases of killing farmers seem to be more than those of farmers to kill pastoralists' societies whatsoever (Mwambene et al., 2014).

On the other hand, a number of animals especially cow were killed by angry group of farmers as a response of their upset (Mwambene *et al.*, 2014). Hundreds of cattle have been killed and some were captive by the farmers. However, on the other hand, number farmers' houses were burnt and

some massively demolished by the Maasai people (Maganga *et al.*, 2007). For example; in Mthunda sub-village of Mvomero village 30 houses were burnt by the Maasai in 2013 during the crisis. As well, farms were destroyed as Maasai set their catlle to farms where the cattle eat and destroy crops especially maize.

As an intervention to rescue from death, in 2013 a group of people especially farmers opted to leave their houses. Verdict from field survey shows that 5% of the people living in Mthunda sub-village were forced to leave their home to other places to recues their life as a result of conflicts (Mkonda 2014). This implies that land conflict resulted to the shortage of labour force (working population) in the area due to migration to other areas. Generally, there is great challenge in the area as the people are leaving the area fearing death. As well, the displacement of families has been severely affecting pupils' performance in their primary schools education due to poor attendance.

Political Response

Herder-peasant conflict has been a problem in Tanzania for more than twenty years ago. The majority herders/pastoralists originate from Lake Victoria zone and Arusha. Due to excessive land degradation in those areas, these pastoral societies decided to search for other areas where they can get water and pasture for their herds. Among the areas which were best destination was Morogoro especially Mvomero, Kilombero and Kilosa. Thus, in those areas chaos began due to competition for resource utilization. Peasants started to demand that herders must go out from the area. However, the Tanzanian constitution of 1977 allow any Tanzanian to live anywhere in the country provided he/she follows given laws, procedures, regulation and he/she obeys the Tanzanian constitution. In this juncture, it was difficult to remove these immigrants. Following that, there were some few cases of death in both groups and some incidences of cattle slaughters.

As a response of this, some top government officials at the capacity of Regional Police Commander, Regional Commissioner, Ministers and sometimes Prime Minister went at the area for the sake of solving this awful crisis. In most cases these officials are giving political solution which in most cases is not sustainable. They keep on shifting the pastoralists without setting at place the needed infrastructure, eventually the herders comes back. Situation is worse during political election because political candidate are afraid to criticize whatever is done by these groups as they needs their votes.

Despite of a number of studies done in the region, such as that of Benjaminsen et al (2009), there are still conflict in the area. This has brought some political tension by the government the situation that has led some political leaders including the Region Commissioner to lose his political post.

The President of the United Republic of Tanzania His Excellency Dr. John Pombe Magufuli to declare openly that he is not satisfied on the political resolution on the place. Thus, this study meant to increase awareness to address the problems. It aimed to add some knowledge on the existing ones.

Way Forwards

For the sake of permanent solution, there is a need to widely involve all stakeholders in the panel of resolution. According to biophysical survey in the study area; the use of top down approach cannot solve the crisis. However, participatory approach is encouraged for this move. The government should set at place all legal, regulations and policy issues as a fuel toward the success. Coercive approach is the most unsuitable approach in this crisis as it has failed many times. The government has to insure the proper ways on sharing out the land instead of leaving the society fight themselves on getting it. As well, the government has to monitor the implementation of the agreed resolutions. By so Abraham Lincoln's definition about democracy that "is the government of the people, by the people, for the people" will be in place, adopted and helpful to the society.

Basing on the results in Table 4 below; the majority respondents (farmers & herders) are greatly interested in the good governance especially related to policy matters, right of land occupancy and at least the increment of land from reserve land to agricultural and pastoral activities (Mattee et al. 2007). As well, findings from PRAs tools shows that, there are some corrupt leaders who are bribed by some rich people and give them rights to own and use land. It is a chaos; a 61 old man of Kipogolo sub village lamented "rich people are the ones who own rights; the poor are chased from their rights". There has been a claim that some government leaders are siding to the rich people instead of standing on actual rights according to laws and regulations. This situation seem to be true as the top government has been demoting some leaders especially police officers due to corruption. This is also explained in the article of The Kilosa Killings by Benjaminsen et al., (2009).

On top of that, results from the study area show that some people especially farmers do not like some the National Environmental Policy 1997 also explains the sustainable use of the environmental resources. Currently, Agriculture stands as a ministry for its own whilst Livestock as well stand as a ministry for its self. The two sectors have outstanding contribution to the national economy. Since each ministry has its own policies; sometimes they differ in terms of directives and content (URT, 2012).

Moreover, most of the villages in Tanzania have no plans. They have been dormant since the Villagization Policy of 1974. We can see some conflicts between villages about their boundaries. Boundaries and registration of villages is still a challenge towards the successful completion of the land conflict crisis (URT, 2012). Sometimes, conflicts and fighting has erupted especially in pastoral societies because of undefined boundaries of their villages. This has been more pronounced in Manyara, Arusha, Singida, Morogoro (especially Kilosa, Mvomero and Kilombero districts) and some parts of Dodoma region.

Table 4: Showing Peoples' Perception towards Resolution Resulted from Land Conflicts

Resolution Strategies	Frequency	Percent	C. Percent
i. Good government policies	10	4	4
ii. Having rights and certificate of land ownership	10	4	8
iii. Proper land use plan to both peasants and farmers	5	2	10
iv. All of the above	225	90	100
v. Total	250	100	100

Source: Field Survey Data, 2015

local leaders to be involved in settling their disputes as they blame these leaders for being bribed by the Massai.

Policy issue as well, is very important aspect toward the successful resolution of these conflicts. The Agricultural and Livestock Policy 1997 Then,

Conclusion

Political ecology is the study of the relationships between political, economic and social factors with environmental issues and changes (Perry 2003). It looks around about the best use of resources to all people by clearly using; political will, economic viability and environmental sustainability realities. Therefore, Tanzania needs to adopt the best use of environmental resource for the benefit of the entire nation including the people at the resource base. This will help to greater extend to eliminate the current clashes caused by the scrambling for resource utilization (Walker, *et al.*, 2006).

Therefore, good government policies (harmonized policies), good leadership (uncorrupt), participatory approaches in solving conflicts, legal pluralism, environmental conservation, economic viability of resource utilization and transparent implementation of the agreed resolutions; these will help much the culmination of the shameful behavior of human killings competing for resources (Peluso, *et al.*, 2001).

Conflict of Interest

The author sincerely declares no conflict of interest.

References

Bassett, T. J. 1988. 'The Political Ecology of Peasant–Herder Conflicts in the Northern Ivory Coast', *Annals of the Association of American Geographers* 78(3): 453–72.

Benjaminsen, T. A., F. Maganga and J. A. Moshi. 2009. The Kilosa Killings: Political Ecology of a Farmer–Herder Conflict in Tanzania. The Hague, Institute of Social Sciences.

Blaikie and Brookfield. 1986. Land degradation and Society. London & New York. Blaikie, P. (1989). Environment and access to resources in Africa. *Africa*, 59:18-40

Brosius, P. 1999. 'Green Dots, Pink Hearts: Displacing Politics from the Malaysian Rainforest', *American Anthropologist* 101(1): 36–57.

Bryant, R. 1998. Power, knowledge and political ecology in the third world: a review, *Progress in Physical Geography* 22(1):79-94.

Hyera, P. 2007, Environmental Flow Assessment (EFA), Wami River Basin. Tanzania: Social Economic Components of the Wami EFA Study, pp. 10-15.

Kothari, C. 2004. *Research Methodology; Methods and technique*. New Delhi. New Age International Limited.

Le Billon, P. 2001. 'The Political Ecology of War: Natural Resources and Armed Conflicts', *Political Geography* 20: 561–84.

Maganga, F. P., R. Odgaard and E. Sjaastad. 2007. 'Contested Identities and Resource Conflicts in Morogoro Region, Tanzania: Mattee, A.Z. and M. Shem. 2006. 'Ambivalence and Contradiction: Α Review of the **Policy** Environment in Tanzania in Relation to Pastoralism'. IIED Issue Paper **Drylands** Programme. London: No 140, International Institute for Environment and Development.

Mkonda, M. Y. 2014. Temporal Rainfall and Temperature, Trends, Impacts in Agriculture, and Adaptations that Respond to Local Conditions in Mvomero District, Tanzania. Journal of Research on Humanities and Social Science in IITE journal. Vol. 4, No. 12. Pp. 36 - 48

Mwambene P L, R. P. Mbwile, F. U. Hoeggel, E. C. Kimbi, J. Materu, A. Mwaiganju and S. Madoffe 2014: Assessing dynamics of forced livestock movements, livelihoods and future development options for pastoralists/agropastoralists in Ruvuma and Lindi Regions, in the Southern Tanzania. *Livestock Research forRuralDevelopment.Volume26, rticle#4*. Retrieved October8,fromhttp://www.lrrd.org/lrrd26/1/mwam26004.htm 2015

Olmos, S. 2001, Vulnerability and Adaptation to Climate Change: Concepts, Issues, Assessment

Msafiri Yusuph Mkonda et al. The Political Ecology of Peasant-Herder Conflict in Mvomero District, Tanzania

Method. Available from the Climate Change Knowledge Network web site, www.cckn.net.

Peluso, N.L. and M. Watts (eds). 2001. *Violent Environments*. Ithaca, NY, and London: Cornell University Press.

Perry, Richard J. 2003. *Five Key Concepts in Anthropological Thinking*. Upper Saddle River, NJ: Prentice Hall.

Scott, J. 1998. Seeing like a State. How Certain Schemes to Improve the Human Condition have Failed. New Haven, NY: Yale University Press Walker, Peter A. 2006. Political ecology: where is the ecology? Progress in Human Geography 29 (1):73–82.