



Assessment of natural resources use conflicts between farmers and pastoralists in Tanzania: A review

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Abstract

This review paper dwells on assessing natural resources use conflicts between farmers and pastoralists in Tanzania. Different documents with information on farmers-pastoralists conflicts in Tanzania were reviewed. The resources considered in this paper were land, water and forests (pasture land). Land is the main resource for the livelihoods of both farmers and pastoralists. Different activities are performed on land including grazing and farming; these activities are not compatible to each other. This paper revealed different causes of land use conflicts such as shortage of grazing land and farming, climate change, drought, decline of soil fertility and lack of clear boundaries between pastoralists and farmers' villages. Results of farmers-pastoralists conflicts include damage of crops, destruction of property, killing of animals and human beings and insecurity. The study findings show that village conflict resolution committee under village leaders plays a major role in conflict mitigation. This study recommends mediations and resolutions such as formulation of land use planning, intensive farming, reducing number of animals, enactment of villages natural resources management by-laws, enforcing laws and policies, strengthening outreach services to farmers and pastoralist to change their negative perception so that they can realise the economic benefits of natural resources if managed and used sustainably.

Paper History

Received: 15 June 2019

Accepted: 20 November 2019

Key Words

Conflicts; Farmers; Land use; Natural resources; Pastoralists

How to cite this paper

Mhache, E. P. 2019. Assessment of natural resources use conflicts between farmers and pastoralists in Tanzania: A review. *Mkwawa Journal of Education and Development*, 3(2): 61-78. DOI: <https://doi.org/10.37759/mjed.2019.3.2.4>



1. Introduction

Farmers and pastoralists have coexisted for centuries. This coexistence has not been smooth, as it is often characterised by cooperation and conflicts (Moritz, 2010; Shettima & Tar, 2008). Studies conducted in different parts of the world report a number of conflicts between two or more groups (Ajibo, 2018; Idakwoji *et al.*, 2018). In most African countries, land conflict commonly arise at the countries' border, district border, among ethnic groups, in the community over common land, and between individuals over boundary (Mamo, 2006). Idakwoji *et al.* (2018) studied herdsman/farmers conflicts in Kogi State and their security and development implications in Nigeria. This study found the main causes of conflicts included crop destruction by herds, violation of grazing agreement, destruction of water sources by herds, and cattle rustling. Other causes were cattle killing by farmers, soil degradation and land scarcity, population growth of human and herds, climate change and changing patterns of farming and grazing. Dary *et al.* (2017) studied triggers of farmer-herder conflicts in Ghana on a non-parametric analysis of stakeholders' perspectives. In their study, Dary *et al.* (2017) found that competition over access to and use of land and water resources is at the center of the conflicts. Farmer-herder conflicts are driven by triggering activities of both farmers and herders. The study by Dary *et al.* (2017) found the following triggers of farmers-herders conflicts: destruction of crops by cattle, farming close to water bodies, farming on cattle routes and competition over use of water bodies. Other causes of farmers/herders conflicts were water pollution by cattle, ineffective local water governance laws, lack of systems to deal with grievances and free rider problem in water usage. Ajibo (2018) did a study on dynamics of farmers and herdsmen conflict in Nigeria and its implication to social work policy intervention. Ajibo (2018) found land use, ethnic and religious differences as causes of farmers and herdsmen conflict.

The competition over access to and use of land and water resources has been the cause of conflicts (Gwaleba & Silayo, 2019). With the lesson from other studies this review study was conducted to assess factors which have contributed to the persistence of farmer-pastoralists conflicts in Tanzania. This paper focuses on causes of conflicts between farmers and pastoralists. The major obvious cause of farmers/pastoralists conflict is natural resources use (Matimbwa & Mwalimu, 2014). The natural resources considered in this paper among others were water, forests and



land (for farmers) and pasture (for pastoralists). Farmers and pastoralists are susceptible to conflicts over the use of land resources, arable land, range lands for pasture and water. It is premised that, farmers and pastoralists activities are not compatible to each other (Gwaleba & Silayo, 2019; Matimbwa & Mwalimu, 2014). Land is the main source of the livelihoods of people in terms of income, food and employment. Farmers and pastoralists conduct their activities and derive their livelihoods on the land.

There are different causes of natural resources use conflicts. Conflicts erupt between pastoralists and crop producers as pastoralists graze their animals on farms and farmers expand their farms encroaching forests (pasture). Land use planning has not achieved its goals because of lack of appropriate legislation in executing it, top-down approach to land use planning and lack of institutional capacity has been an obstacle to conflict resolution, mediation and reconciliation. In many areas in Tanzania, natural resources use conflicts are obvious. Different areas have experienced land use conflicts, among others, including Mvomero, Kilosa, Kibiti, Bagamoyo, Karagwe, Arumeru and Kiteto, to mention a few. The causes of conflicts vary in one way or the other.

Moreover, climate change, environmental degradation and droughts have forced pastoralists to move frequently to new destinations for an extended period of time. Competition over grazing lands (pasture) and water has further contributed to the conflicts which have in turn resulted in proliferation of farmers and pastoralists' conflicts. However, unlike other migrant groups such as refugees and/or internally displaced persons, migrant agro-pastoralists have never been formerly protected or recognised (Joto Africa, 2011). Thus, this paper was carried out to achieve three specific objectives which were to: (i) identify the root causes of pastoralists/farmers conflicts in Tanzania; (ii) examine the socio-economic implications of pastoralists/farmers conflicts in Tanzania and; (iii) establishing workable solutions that can be put in place to resolve pastoralists/farmers conflicts in Tanzania. Connected to these specific objectives, this study addressed three research questions: (i) what are the causes of pastoralists /farmers conflicts in Tanzania?; (ii) what are the socio-economic effects of farmers/ pastoralists conflict Tanzania?; and (iii) what are the measures to resolve pastoralists/farmers conflicts in Tanzania?



2. Literature review

2.1. Definition of concepts

2.1.1. Conflict

Conflict refers to disagreement and antagonism between individuals or group of people. According to Imbusch (1999), a conflict is defined by sociologists, as a social fact in which at least two parties are involved and whose origins are differences either in interests or in the social position of the parties. Horowitz (2000) argued that conflict is a clash of values, actions, views or directions. The term conflict refers to misunderstanding, disagreement or divergence of ideas, which results into hurting each other, and when management is delayed, it can lead into coercive measures that suggest forceful victory on either party (Norman, 2013). With the focus of this paper, there are different types of conflicts; conflict between livestock producers and cultivators, pastoralists and pastoralists, inter village conflicts, pastoralists versus village authority, and pastoralists versus district authority.

2.1.2. Conflict management and resolution

Conflict management is the process of dealing with disputes in a rational, balanced and effective way. The aim of conflict management is to enhance the performance of people in organisational setting (Rahim, 2002). Conflict resolution involves the reduction, elimination, or termination of all forms and types of conflict (Thomas, 2007). Thus, conflict resolution is a way for two or more parties to find a peaceful solution to a disagreement among them. When a dispute arises, often the best course of action is negotiation to resolve the disagreement. The goal of negotiation is to produce a solution that all parties can agree to.

2.1.3. Natural resources

Resources are on the environment we live. Resource is anything found on the environment that can be used by man under prevailing cultural, economic and technology conditions. Natural resource is naturally occurring substance that is profitable and potentially feasible to extract under prevailing economic situation and technology. Thus land, water, forest, minerals, oil and others are generally considered natural resources. Natural resources are categorised as renewable and non-renewable resources. Renewable resources are resources that can be



replenished/replaced in a fairly short period of time. These include air, water, sunlight, forests, solar-power, wind, tides, biomass, geothermal and many others. A nonrenewable resource is a resource that cannot be replaced/ replenished in a short period of time; these resources are fixed in amount and formed very slowly. They take millions of years to be formed. Examples of nonrenewable resources are minerals such as coal, oil, petroleum, natural gas, metals and others.

2.2. Theoretical literature review on the persistence of resource use conflicts

2.2.1. Theoretical orientation

This study adopted conflict theory as it has theoretical orientation on effort to unfold the dynamics of farmer-pastoralist conflicts in Tanzania. The conflict theory was propounded by Karl Max (1818–1883). The basic tenet of the theory is that the society is in a state of perpetual competition for limited resources. In this case the limited resources such as land and the competition for land resource is what originated farmers and pastoralists conflict in Tanzania. Conflicts have taken political, religious and ethnic dimension. Since this study is focusing on the farmer-pastoralist conflicts, conflict theory fits well in this review paper. To backup the conflict theory, the IPAT model was employed in order to develop the theoretical framework describing the root cause of resource use conflict in Africa and Tanzania in particular. The conflict theory and IPAT model highlight the underlying determinants of the persistence of resource use conflicts between crop cultivators and pastoralists.

According to Chertow (2001), the IPAT model provided a simple theoretical framework to analyse the determinants of environmental impact. The model is presented as $I=P \times A \times T$. Where, the “impact” (I) of any group or nation on the environment is given by the interaction of its population size (P), per capita affluence (A), expressed in terms of real per capita GDP, as valid approximation of the availability of goods and services (1) and technology involved in supporting each unit of consumption (T). By this formulation Chertow (2001) rejects the notion that population is a minor contributor to environmental crisis. The variable I (which in this context should be referred to environmental pressure) is quite problematic since it probably cannot be summarised in a single index. In this study, population (people



and animals) increase while technology is not changing; even if it is changing it is not to the required standard. As population increases, more farming and grazing land is required. This consequently results in conflicts.

This model presents some limitations. The first problem is that the factors are not independent of each other, due to multiplicative (and also non-linear) relationship. Population, consumption and technology can also show very complex interactions, which are therefore simplified in the model (Ehrlich & Holdren, 1972). A second problem concerns the measurability of variables. It is possible to find an immediate proxy for population, while proxies of per capita affluence and technology are not always so immediate to be identified. These limitations were addressed by drawing insights (population change, land degradation and technology) from another population-environment interaction theory i.e. the Boserupian Theory.

2.3. Empirical literature review

2.3.1. Types of conflicts

Life of people depends on Mother Nature i.e. environment. On the nature (environment) is where there is land, water, forests and other natural resources. In the use of these resources is when antagonism erupt. Natural resources use conflicts erupt between two or more groups/communities. Among the conflicts is between pastoralist and crop producers as pastoralists graze their animals on farms and farmers expand their farms at the expense of grazing or pasture land. In many areas, land use conflicts are obvious in Tanzania where there are major land use conflicts. Through literature review there are different types of conflicts and differences on experiences of conflicts.

The first type of conflict is the conflict between residential versus agricultural land use. This type of conflict occurs due to population increase both in urban and rural areas. In urban areas this kind of conflict results in boundaries being extended to include rich agricultural lands. In rural areas, increases in population increase demand for land for residential house and for agriculture. Kigamboni ward, for example, received a lot of people from different places wanting land for residential and for agricultural use (Mwangira, 2003). This situation, if not handled carefully, can end-up in a conflict.



The second conflict is the conflict between pastoralists and pastoralists. The people doing the same activities can resort into conflicts. This conflict has been interpreted as a result of competition for pasture/fodder. This type of conflict is rampant during the drought time because of shortage of fodder leading to pastoralists scrambling for little fodder available for feeding their animals (Mwambene *et al.*, 2014; Mwambene *et al.*, 2010). Another cause is chronic insecurity and livestock raiding (Falanta & Bengesi, 2018). The cause of this type of conflicts is often due to overstocking leading to over-grazing by pastoralists. Another result of this conflict is migration of people from areas designated for grazing to other areas not meant for grazing such as to Ruvuma Basin and Ihefu Basin (Mwambene *et al.*, 2014).

The third type of conflict is common in urban areas. It is the conflict between open space/cemeteries and residential areas (Davies & Bennett, 2015). It can also include government organs, institutions and municipalities. This kind of conflict is the result of population increases in both urban and rural areas (Mamo, 2006). In urban areas increase of population causes increased demand for land for residential houses and for any development activities (Mwamfupe, 2015). In urban areas, people invaded open space and cemetery areas where they establish residential and socio-economic activities (Davies & Bennett, 2015). Sometimes, conflicts emerge between open spaces (owned by municipalities) and residents (developers). Developers have built buildings and other assets in the open spaces. Conflicts emerge when these buildings are demolished or earmarked for demolition.

The fourth and the last type of conflict is the conflict between pastoralists and farmers. This conflict is the result of pastoralists feeding their animals on farms; in turn farmers kill livestock resulting in conflicts (Falanta & Bengesi, 2018). It can also happen when farmers cultivate on pasture lands and reduce land for pasture. Conflict between pastoralists and farmers is the conflict this study focuses on.

2.4. Drivers for the persistence of farmers and pastoralists conflicts

Tanzania is a big country with different tribes. Her people engage in different socio-economic activities such as business, farming and livestock keeping among others. A number of factors have been identified to contribute to the existence of farmers-herders conflicts in Tanzania. The theory of conflict and IPAT Model are clear on the causes of conflicts due to different needs which are not compatible to one another.



There are number of drivers of conflicts between farmers and pastoralists in Tanzania. Different scholars have identified various causes of conflicts such as drought, land use and migration (Mwamfupe, 2015; Benjaminsen *et al.*, 2009; Abroulaye *et al.*, 2015). However, the results of these conflicts on farmers and pastoralists have been a threat in many areas. According to FAO (2005), droughts or period of unusual low rainfall is part of the expected pattern of precipitation in semi-arid Africa. Thus, one of serious effects of drought is drying up of water sources and decline of forage for livestock; a situation which results into conflicts between farmers and pastoralists (Orindi *et al.*, 2007). Climatic variability also affects distribution and availability of these resources leading to pastoralists migrating into land occupied by farmers hence conflicts between these two groups occur. Mancasu *et al.* (2015) pointed out that a correlation between drought and conflict already exists in Africa mainly due to increased competition for water and pasture.

Land use conflicts have negative effects on economic, social and ecological development of a particular area. Conflicts lead to unsettled families who cannot work for the development of their country. Many conflicts are actually conflicts over land and related natural resources which mean that, everywhere people are competing for the natural resources to enhance their livelihoods. Migration from one place to another seemed to be common due to chronic drought conditions, shortage of pasture and declining of soil fertility (Judex *et al.*, 2003). In comparison to other disasters where few victims consider permanently changing location, farmer-pastoralist conflicts take the lead. Raleigh *et al.* (2008) point out that migration is considered the highest in drought areas. As Adeoya (2017) accentuates, pastoralists sometimes engage in deliberate destruction of crops and properties because of the belief that such acts are essential for stock growth/expansion and house prosperity. This destruction occurs through bush burning by the farmers for their various benefits, which pastoralists see as a deliberate attempt to deny livestock's access to pasture. Additionally, some pastoralists, for example, the Maasai believe that all the cattle in the world belong to them and were given to them by Enkai (the god). This kind of belief has been a source of trouble with other neighboring communities by generating inter-tribal conflicts (Benjaminsen *et al.*, 2009).

Insecurity of land tenure is also a reason for farmers-pastoralists conflicts (Krause, 2019; Falanta & Bengesi, 2018). Some villages have land use plans showing what is to



be done where. Some unethical people violate land use plan and make use of the land contrary to land use plans, resulting in conflicts. Land demarcated for farming is used by pastoralists; farmers expand their land to pasture areas, all these lead to conflicts (Mwamfupe, 2015). Another cause of farmers-pastoralists conflicts is inadequate capacity of the local institutions to reconcile or mitigate the conflicts. Some of the conflicts can be addressed at low or local levels but inability of local institution leaders like local or community leaders makes conflicts persist.

According to the late *Mwalimu* Julius Kambarage Nyerere, corruption is one of the enemies of development (Hartmann, 2016). Corruption can also reduce the speed of development as few people can destroy the peace of a community. Thus, corrupt practices have been one of the causes of the persistence of conflicts between farmers and pastoralists in some areas. Once people steering conflict are apprehended, some of them corrupt leaders and become released, as the result conflicts persist. This practice has contributed to endless conflicts. Not adhering to boundaries, defaulting on laws, by-laws and regulations has further contributed to farmers-pastoralists conflicts.

Inadequate capacity of village land use planning committees to resolve conflicts contributed to the persistence of conflicts in different parts of the country. Land use planning is very important in solving land use conflicts; it shows what is to be performed where and which not. However, in some societies land use planning is violated leading to conflicts. Land use planning should consider carrying capacity of a land, resources (soil fertility and pasture) and demarcate or shows what should be done where. Carrying capacity can be destroyed by exceeding the number of domestic animals which can be grazed in a certain piece of land or farmers expanding their farms at the expense of pasture (forest). These two scenarios if not taken into consideration can result in conflicts. However, it is important to note that no single factor can adequately explain the persistence of conflicts between farmers and pastoralists over the years, instead a combined effects of these factors is responsible for the persistence of conflicts.

3. Research methodology

This study was conducted in Tanzania, a country with 30 regions. Tanzania is located in East Africa. Specifically the study dwells on the regions with farmer-pastoralists



conflicts such as Morogoro, Manyara and Arusha, to list a few. This study is based on a descriptive research design and it has utilized critical literature review (documentation) as an instrument for data collection. This was a desk review study where literature with bearing to farmer-pastoralists conflicts was reviewed. According to Ellis *et al.* (2011) and Gwaleba & Silayo (2018) drawn on Nuhu (2019), secondary research or review study is a study which involves the systematic description, analysis and summarization of the previously studies and applying the result to one's own study. Secondary data was used to make a critical analysis of the assessment of natural resources use conflicts between farmers and pastoralists in Tanzania. Secondary data was analyzed using content analysis. The secondary data collected for this study focused on the assessment of natural resources use conflicts between farmers and pastoralists in Tanzania. The preventive and curative measures for natural resources use conflict were presented in this paper as recommendations. The main focus of this paper was to assess natural resources use conflicts between farmers and pastoralists in Tanzania and recommend for conflict resolution approach for the pastoralists and farmers with regard to the existing conflicts. The study ensure ethical issues by citing sources of the information used in this paper and checking plagiarism of this paper.

4. Results and discussion

4.1. Root causes of farmers-pastoralist conflict in Tanzania

Through the literature review and data analysis it was noted that, farmers-pastoralists conflicts in Tanzania are a result of many and different causes (Table 1). It was also learned that causes of conflicts vary from one area to another. For example causes of conflicts in Mvomero and Kilosa Districts were search for water and pasture, shortage of pasture, migration from one place to another, drought, corrupt practices and destruction of properties (Falanta & Bangesi, 2018). Other causes of conflicts are policy deficiencies and contradictions; lack of securities of tenure; drought, land use, migration, land grabbing, land expropriation and unfair compensation, poor land governance; legal contradictions, invasion in conflicting land use and tenure insecurity.



Table 1: Causes of conflicts

Authors	Causes of conflicts
Falanta and Bengesi, 2018	Search for water and pasture, shortage of pasture, migration from one place to another, drought, corrupt practices and destruction of properties.
Mwamfupe, 2015	Policy deficiencies and contradictions; lack of securities of tenure; drought, land use, migration
Benjaminsen <i>et al.</i> , 2009; Abroulaye <i>et al.</i> , 2015	Drought, land use, migration
Gwaleba and Silayo, 2019	Land grabbing, land expropriation and unfair compensation; poor land governance; legal contradictions; invasion in conflicting land use; tenure insecurity

4.2. Consequences of land-use conflicts

All land use conflicts produce negative consequences for individual people as well as for the entire society. Many families across the world have seen their shelters and homes being demolished due to conflicts. In Africa, many people experienced the selling of their property by someone else who also claims to be the owner. Wehrmann (2008) observes that, whenever there is a land conflict, some people suffer socio-economic consequences. In extreme situations, people find themselves landless and/or without shelter. In the case of a farmer, this often includes the loss of his/her production base. Where there are many land conflicts, social stability within society is affected, as land conflicts undermine trust and increase fear and suspicion often between formerly close people such as neighbours and family members. Violent land conflicts or simply the fear of becoming a victim of them can also have a traumatising effect on those who are or feel at risk. For example, conflict in Mvomero and Kilosa Districts results when people search for water and pasture. Shortage of pasture, drought and destruction of properties compound the problem (Falanta & Bangesi, 2018).

In addition, whenever state land is allocated illegally it generally affects the nation's budget (as people must be compensated in case land use changes) and often results in ecological destruction or social exclusion. Still other consequences of land conflicts



are unorganised, unstructured land development and the subsequent additional costs for infrastructure provision. The costs of these have to be borne by the entire society. Tripp (2004) acknowledges that land ownership conflicts have negative effects on individual households as well as on the nation's economy. They increase costs, slow down investment, can result in the loss of property for a conflict party and reduce tax income for the state or municipality.

Conflicts over the use of land in one way or another have a negative impact on the poor or on the nature or on the building environment. They either decrease quality of life for parts of society or, if they are addressed and ameliorated, contribute to additional state expenditures and therefore have an impact on national wealth (Wehrmann, 2008). Land conflicts also increase social and political instability. Wherever conflicts occur, a lot of multiple sales, evictions, and land grabbing take place. People lose confidence in the state and start mistrusting each other. Dealing with land conflicts therefore also means re-establishing trust and confidence in public as well as private institutions. Kariuki (2005) stresses that land conflicts affect different groups in different ways like having a stronger impact on the livelihood of the poor than that of the rich, but they also impact differently on men and women, urban and rural populations, farmers and pastoralists, groups such as squatters, ethnic minorities or orphans being extremely marginalised.

4.3. Lessons learnt from farmers-pastoralists conflicts

The Boserupian theory advances an argument that population increase results in innovations for less erosion. It was assumed that if population increases while resources like land are limited, people will be creative and innovative to increase the yield of the available resources. With science and technology, resources (land and pasture) will be improved to cater for the needs of people (consider science and technology). It was revealed through the literature review that, farmers-pastoralists conflict is the result of several factors such as shortage of pasture, drought, climate change and poor land use. One of the causes of conflict is shortage of pasture and large herds of animals forcing people to graze on areas not designated for pasture. This cause of conflict can be addressed by reducing number of herds and consider carrying capacity of a pasture.



For peace to exist there must be a deliberate design to enlighten and mobilise parties in conflict to understand the ecology and the resources available in the localities. Understanding the ecology and the resources available in a place will suggest what activity can be done in a particular area. For example, Ihefu basin is suitable for farming but pastoralists take their animals to that basin resulting in conflicts. It was further learnt that establishment of model farms for farmers and model pasture for livestock keepers would control conflicts. It is obvious that farmers and pastoralists rely on traditional methods of farming and livestock keeping. With model farms both livestock keepers and farmers could learn how to improve their pasture and land, respectively. With the improvement of herdsmen and farmers activities, this will reduce conflicts persisting among these two groups.

Connected to model farms is to train both farmers and pastoralists on proper crops to grow and good animal species with high return or yield. There is a need of training people (farmers and livestock keepers) on their socio-economic activities thus with few animals and small piece of land will get high yield. Ensuring extension services are availed to the trained farmers and livestock keepers is very important. Extension and veterinary service helps both farmers and livestock keepers to control and treat diseases and pests facing their activities, respectively.

Another lesson learnt in this paper is that ready and reliable market for the animal products and crops produced is an ingredient of good governance. The markets for both farming and livestock keeping produce are not stable and reliable. There is a need of farmers to form groups in which they could collect crops and sell their harvest as a group. The same to livestock keepers, they can organize themselves to form groups or associations for product collection bulk selling. Through organisations, both farmers and livestock keepers can be able to dictate the market, setting prices and searching markets for their produce.

The last lesson learnt through literature review was value addition to produce. Value addition is another way farmer and pastoralists can increase their returns. Instead of pastoralists selling raw milk they can also sell butter and packed meat. Farmers need to learn how to process raw products, and sell processed and packed products. Processed and parked produce can fetch high prices in turn high income for both farmers and pastoralists. Processed crops or produce can last long compared to unprocessed one.



5. Conclusion and recommendations

From these findings, farmers and pastoralists are highly depending on agriculture and livestock keeping as their major economic activities. Thus, conflicts arise between them when they are competing for land resources. Land use conflicts have stagnated the lives of farmers and pastoralists. Through literature review, the main causes of the conflict based on the use of natural resources such as land, water and pasture were identified. The findings show that the root cause of the conflicts lies mostly in the lack of security of tenure of land on which most smallholder producers depend for their livelihoods (Mwamfupe, 2015). The conflicts between farmers and pastoralists lead to death, insecurity and destruction of properties in Tanzania. Different conflict resolution and mediation to address farmers-pastoralists conflicts have been executed which include preparing land use plans and educate people to adhere to it; involve social workers to intervene in conflicts and suggest solutions; using village/community resolution committees and encourage people to practice zero grazing, keeping few animals; creation of grazing reserves which is healthier for cattle breeding. Finally, in the absence of land use plans for most villages in the country coupled with lack of coordination in resettling the displaced migrant herders, conflicts between farmers and pastoralists are inevitable. Therefore, unless security of tenure on land used by smallholders (both farmers and herders) is restored, the conflicts between them will continue. To this end, this paper recommends the following:

- i Ratification and enforcement of land laws and by-laws. Due to longevity of the prominent pastoralist-farmer conflicts the responsible authorities such as government at all levels and other community development organs should ratify and enforce land laws and district by-laws to end conflicts. At all levels responsible, private or government authorities should make sure that the rights of the people are protected and anyone who contravenes them is punished accordingly. This will ensure sustainable land use for cultivation and pasture production.
- ii Education and awareness campaigns: Education on effects of pastoralist-farmer conflict should be provided to both farmers and pastoral communities. This will enable groups in conflicts to find amicable way of solving land



conflicts instead of fighting day after day. Through education, pastoral group will understand the effects of grazing their cattle on farmers' land as farmers will not cultivate on grazing areas. This campaign may involve different stakeholders like civil society organisations and governmental agencies on best practices for crop and livestock production for mutual benefits.

- iii Further, pastoralist community should be educated to keep animals in an average while diversifying into other economic activities to limit animal movements to farmers' land in search for green pastures and farmers also should be educated to avoid expanding farm land at the expense of pasture land. Resolving pastoralist-farmer conflicts should be undertaken seriously and should not be considered a political agenda. People face food instability that lead to hunger and poverty as farmers concentrate on fights rather than keep engaging in agricultural production.

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