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Land conflict dynamics in Africa: A critical review on farmer-pastoralist conflict perspectives

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This paper examines the theoretical bases underlying the causes of land conflicts. It involves a critical analysis of various contentions surrounding land nexus violent conflicts with particular attention to farmer-pastoralist conflicts. The drive for this examination is more on a comparison of causes between such conflicts in varying contexts of African. The major aim is to broaden the understanding about the nature of these conflicts with the prospect of setting grounds for scholars and policy makers for reviewing and crafting relevant intervening measures. The paper draws on debates and literature on farmer-pastoralist conflict to develop insights into their dynamics. This aims at making stakeholders informed of the existing gaps in research and underlying causes that could be capitalized on in devising relevant mitigating measures. The review shows that the uncontrolled interaction of the supply; demand and structural induced aspects contribute to the state of inequality, competition, and conflicts among land users. This situation is found to be aggravated by the social and political conditions surrounding the causes and governance of natural resources, with typical scenario of the changing policies of land tenure that have exacerbated increasing land grabbing and tenure insecurities. The paper recommends the need for revisiting the formal and informal structures that governs resource distribution in a bid to alleviate existing land- access inequalities and conflicts.

Key words: Conflicts, farmers, pastoralists, resource conflicts, competition, environmental scarcity, structural scarcity, resource degradation.

INTRODUCTION

There have been considerable concerns by scholars in peace and conflict studies to establish the meaning of the conflict phenomenon ever since the 1950s (Azar, 2015). This concern came as a result of realizing that conflict is an inevitable part of social life happening between one individual and another, individuals and societies or one state and another as they interact in a given environment (Umbreit, 1995; Mayer, 2012; Azar, 2015; Boulding, 2015). As such there has been varying experiences and conceptualizations of conflict.

Mayer (2012:3) perceives conflict as “a feeling, a disagreement, and a real or perceived incompatibility of interests, a product of inconsistent world views, or a set of behaviour”. Wallensteen (2012) defines it as a behavioural situation arising from disagreement on how to pursue certain goals, interests or needs between two or more parties. To him, conflict is nothing more than a result of incompatible interests that cannot be reconciled by the few available resources.

In other words, scarcity of resources is the main drive

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for competing interests among parties. In a more robust explanation, Boulding (2015:24) is of the opinion that, conflict is “a situation of competition in which the parties are aware of the incompatibility of the potential future positions and in which each party wishes to occupy a position that is incompatible with the wishes of the other.” In this case, conflict seems to originate from an instinct driving one to fulfil self-desires even if doing so may jeopardize opportunities for others to fulfil the same. Thus, the seeming broader consensus is that conflicts occur when there are incompatible interests and either party struggles to gain either through conciliation or at the expense of the other.

Following this assumption, several conflict resolution initiatives have been focusing on analysis of the incompatibility of interests as a step for understanding the root cause of the conflicts and courses of action towards peace building. The underlying assumption has been that “ incompatibility appears to be a key to the existence of conflict” (Wallensteen, 2012:15). Nevertheless, literature has suggested a number of other factors that have been causing social conflict in many parts of the world. Nwokolo (2013:12) outlines these factors among others as “ethnicity, inequality and social exclusion. This is because conflict and violence just like other social processes can seldom be explained by a single cause and that the primary determining cause of social change is impossible to prove; instead, social change tends to represent a dynamic interaction of numerous factors over time.”

As part of the broader conflicts, natural resource conflicts have been a subject of contention in recent decades as well. This is because resource conflicts have been associated with two major outcomes impacting on the society in question: first, resource conflicts can be a threat to the security and livelihood of human beings and the community at large as they are often associated with violence (Mbah et al., 2021). Second, resource conflicts may act as the engine of social change through which conflict-interest relationships in the community can be transformed into new forms (Rutten and Mwangi, 2014).

In this regard, it is necessary to critically examine the dynamics surrounding the resource-conflict relationship, especially if we are to understand the real causes in their entirety and decide the appropriate course of action for resolution and peace building initiatives. This is because resource-related conflicts are believed to have other causes beyond competing interests, and this has made them even more violent and complex (Rutten and Mwangi 2014). For instance , while referring to resource conflicts in African dry land, Pavanello and Scott-Villiers (2013:1) have emphasized that, “it is impractical to single out a primary cause and drivers: indeed, conflicts that may appear limited and localized to pastoralist dryland area may be fuelled by drivers in institutional, political-economic and social spheres operating at national, regional and even global levels.” This underscores the complexity of natural resource conflicts.

MATERIALS AND METHODS

This paper is based on critical examination of debates and literature on farmer-pastoralist conflict dynamics, with the aim of developing insights into their dynamics and underlying causes. Sources contacted include journal articles and eBooks/books accessed through Google search, Google scholar search, academia.edu search, summon search and the Library of the University of Bradford. Cases of these conflicts from different regions of African have critically been reviewed and analytically presented in the paper, the aim being to enhance broader understanding of the socio-political dynamics surrounding causes and impacts of these conflicts. Most importantly, environmental security and political ecology narratives have been reviewed to enhance understanding of how some elements of environmental scarcity (degradation) and socio-political structures interact to create resource scarcity, access inequalities and ultimately conflicts. This aims at unveiling existing gaps in research and underlying causes about farmer-pastoralist conflicts to make stakeholders fully informed as they think and decide about policies and strategies they should devise to alleviate the severity and impacts of the conflicts in question.

RESULTS AND DISCUSSION

Overview of land conflicts

As a subset of natural resource conflicts, land conflicts have been among the major sources of complex violent conflicts that have disrupted livelihoods in many African countries (Mbah et al., 2021). For example, in the countries of the Horn of Africa (Somalia, Djibouti, Ethiopia, Sudan) and East Africa (Tanzania, Uganda and Kenya), land conflict involving farmers and pastoralists has led to a number of devastating effects including human insecurity and poor livelihood (Pavanello and Scott-Villiers, 2013:3). Literature suggests that “most of these conflicts are rooted in the inability of governments to manage the conflicting legacies bequeathed by the pre-colonial, colonial, and post-independence periods, and the determination of governments and political elites to ensure effective grip over the ownership and control of land” (Alao, 2007:64; Petersen, 2017). Yet, recent development in the literature reveals aspects of “poverty, climate change, political instability and weak governance and justice systems” (Mbah et al., 2021: 5225) as other factors contribution to the escalation of land conflicts among other complex and multi-layered causes.

In the broadest sense land is considered to be “the most important natural resource in Africa” (Alao 2007:63; Beck and Bjerge, 2017). Yet, other literatures have gone further calling it to be the dearest resource on the globe as without it there would be no existence of any nation (Home, 2021). Proponents of this view argue that the importance of land is not only based on economic value through which individuals derive their livelihood (Beck and Bjerge, 2017) but also to the spiritual and socio-political value attached to it (Alao, 2007; Mwamfupe, 2015), and that because of this it has recently become a pro-poor agenda (Home, 2021) in the global platforms. Its economic significance for livelihoods arises from the fact

that the majority of people depend on land for agricultural activities and livestock keeping for food and other livelihood amenities (Beck and Bjerge, 2017; Kuusaana and Bukari, 2015).

As time goes on, land is becoming an increasingly scarce resource. The exponential increase in population and on-going rapid urbanization in developing countries are making demand for land even higher (Kuusaana and Bukari, 2015; Van Leeuwen and Van Der Haar, 2016; Home, 2021). Obviously, the increase in population and urbanization trends has always been inversely proportional to the land supply per person because land is a fixed asset which cannot easily be increased by natural means. This is now contributing to changes in land use plans that are hampering customary land use and ownership rights. Land previously used for agriculture and livestock keeping has been reallocated for new settlement in order to accommodate the ever-increasing population and supporting infrastructures in urban and peri urban areas. These circumstances force crop farmers and livestock keepers to interact on a confined amount of land from which they could derive their livelihoods. Ultimately, one of the consequences emanating from such an interaction is the violent conflicts among the two groups with diverse interests in a bid to compete for the few resources at their disposal. The ultimate impact is "low agricultural and livestock productivity, low standard of living and food insecurity" (Naab et al., 2013:257).

Empirical evidence shows that, recent policy changes allowing land grabbing and commercialization in Africa have raised land values (Boone, 2017; Kuusaana and Bukari, 2015). This is creating stiff competition among rural societies whose livelihoods depend on agricultural activities (Ngin and Verkoren, 2015; Van Leeuwen and Van Der Haar, 2016).

This imbalance in demand and supply of land is associated with conflicts precipitated by scarcity (Homer-Dixon 1999). Acquisition of large areas of land for private commercial investments leads to a corresponding decrease in land predominantly used for smallholder agriculture and pastoralism. Under such circumstances land undergoes degradation emanating from intensive farming and grazing. This leads to depletion of arable land and other resources on it such as pasture and water and hence competition between opposing land user groups, particularly crop farmers and pastoralists.

Although a significant number of scholars acknowledge the contribution of land scarcity to conflicts between farmers and pastoralists, the fact that some possess different views cannot be ignored. Bernauer et al. (2012) raise questions on the direct role of land scarcity in violent conflicts. They argue that human beings can manipulate the environment through technology application and use of well-established institutions to enhance fair distribution of scarce resources. One example of the application of technology is the construction of water dams, deep wells, and desalinization of sea water to enable reliable supply of fresh water for agricultural and livestock keeping activities. It should however be noted that those resources could only be shared harmoniously among users if the institutions responsible for resource governance adopt best practices of resource management. These arguments however leave several unanswered questions as to what is possible for farmers and pastoralist communities in developing countries where technology and institutional governance are claimed to be of poor quality.

According to Benjaminsen and Boubacar (2021), farmer-herder conflicts over scarce resources are increased by poor governance and corruption surrounding social, state and political institutions. Because of that, these institutions lack moral authority to make fair and rational decisions regarding natural resource use and conflicts. Benjaminsen adds that pastoralists seem to be economically powerful and therefore able to influence decisions through "bribing officials working in the local government, police and the judiciary". One of the effects of such corruption is the biased decisions that override justice, which eventually intensify grievances among actors of the weaker side. As Benjaminsen et al. (2009: 441) argues, such a situation "results in actors trying to solve problems through violence". These arguments therefore tell us that, clear understanding of the land scarcity and violent conflict relationship needs a detailed analysis of the multidimensional factors, within the context in which such conflicts occur.

The environmental scarcity narrative

As narrated in the previous sections, the importance of renewable natural resources for rural livelihood transformation is widely recognized (Malley et al., 2008; Ratner et al., 2013).This is because the majority of rural people in many developing countries are farmers and pastoralists who depend entirely on renewable resources for crop farming and livestock keeping. Examples of these resources according to Ratner et al. (2013:184) are "land, water, fisheries and forests". Farmers and pastoralists rely heavily on these resources, famously known as "common pool resources" for their agriculture and livestock keeping respectively. Evidence from literature shows; that these resources are becoming scarcer with time. "Scarcity is the result of environmental degradation and most observers regard degradation as the result of land-use systems becoming maladapted because of population growth, technical inadequacies when dealing with soil erosion, and high level of exploitation of soil nutrients" (De Bruijn and Van Dijk, 2005:57). They emphasized that, these are kinds of environmental changes are largely influenced by human activities when they interact with the environment to make their living. They also argue that environmental

change has recently been a global concern due to its association with resource scarcity especially in most parts of sub-Saharan Africa.

In the Sahel region for instance, discourses on land degradation and desertification led to the formulation of the "United Nations Convention to Combat Desertification (UNCCD) in 1994" (Andersson et al., 2011:300). Interestingly, is the emphasis by the Intergovernmental Panel for Climate Change (IPCC) and AlGore (the previous US vice president) on aspects of land degradation and desertification as sources of scarcity and conflicts in the region above (Benjaminsen and Boubacar, 2021). This was after the realization that, if the situation was not under control, crop farming and livestock keeping activities that supported the livelihoods of the majority in the region would be in jeopardy. As Koubi et al. (2014) argue, inadequate access to land resources has a corresponding effect on the livelihood security of the people.

At the same time the environmental scarcity and resource conflicts relationship has gained prominence in several scholarly debates. While some relate scarcity of natural resources with an increasing number of violent conflicts, others argue that empirical evidence relating natural resource scarcity to direct conflicts is yet to be established. To get an insight into this debate, two groups of theorists are critically examined. These are Neo-Malthusians who believe in the environmental scarcity role in violent conflicts and Cornocupians who are "resource optimists" (Bernauer et al., 2012). In this discussion I refer to Thomas Homer-Dixon as a representative of Neo-Malthusian views.

Representing Neo-Malthusians views, Homer-Dixon (1999) argues that, there is a direct relationship between environmental scarcity and violent conflicts. His claim is based on the fact that, as scarcity of resources increases, so does the likelihood of conflict. He suggests three main reasons: (1) "supply induced scarcity", which is a function of reduced natural resource quality and quantity, (2) "demand induced scarcity", which is a function of increased consumption due to exponential increase of population, and (3) "structural scarcity" - attributed to uneven distribution of available resources (Homer-Dixon, 1999:48; De Bruijn and Van Dijk, 2005; Benjaminsen and Boubacar, 2021). To enhance a thorough conceptualization of these contentions, each of these f actors is discussed separately though at times they may overlap with each other as it is impossible to separate them completely.

Supply induced scarcity

Building his argument on "supply induced scarcity" Homer-Dixon argues that such scarcity emanates from degraded land that leads to reduced quality and quantity. As already discussed above, unsustainable land use practices and other human induced factors are believed to cause this reduction in land quality (Dejene et al., 1997; Lestrelin, 2010).

According to Homer-Dixon, there is clear evidence showing depletion of these resources through a number of factors such as degradation and overpopulation. Land degradation and depletion for example have had devastating consequences in countries like Philippines forcing migration to steep slopes that are not suitable for ordinary human survival (Homer-Dixon, 1999; Ja'afar-Furo et al., 2018). As land degrades, people are forced to move; often to land that is less productive. As such, families find it more difficult to grow enough food to support them. Likewise, livestock keepers lack enough pasture for their animals. As a result, their ability to sustain their living through pastoralism is seriously reduced. Giving more examples, Homer-Dixon argues that, land depletion in South Africa has forced people to migrate into overpopulated squatter areas that are persistently prone to environmental hazards such as floods and communicable diseases. Such environments reduce their opportunities to engage in various income generating activities in order to enhance their livelihood. As a result they frequently enter into conflicts with settlers occupying large areas of land (Homer-Dixon, 1999).

Land degradation has had serious consequences in the rural areas of most developing countries (Ja'afar-Furo et al., 2018; Lestrelin, 2010). This is because communities rely heavily on natural resources for their livelihood. At the same time degraded land is unable to produce enough to support communities on a sustainable base as natural resources are depreciating faster than they can be regenerated. Among the coping strategies for communities such as pastoralists has been seasonal movement from areas of perceived pasture and water scarcity to areas where those resources are available. Fabusoro and Sodiya (2011) describe the case of Fulani pastoralists' migration to Yoruba land in Nigeria, associating it with land degradation among other factors. Referring to nomadic livestock keeping, they continue: "This mode of livestock production and management is becoming increasingly difficult or nearly impossible due to lack of access to land in the wake of degrading grazing resources, conflict as a result of farm encroachment and lack of policy support to protect grazing routes. These, among other factors, occasioned the migration of Fulani pastoralists from their traditional habitation in northern and central Nigeria" (Fabusoro and Sodiya, 2011:54).

Tanzania has had similar consequences of land degradation as well. As argued by (Mbonile, 2005), degradation of traditional grazing land has caused movement of pastoralists from other parts of the country to wet lands such as the Pangani river basin where they could have sustainable access to pasture and water for their livestock. He also argues that the migration involved farmers as well as they were also after fertile and moist land for crop farming. As a result, the increased number

of livestock and crop farming activities intensified the competition for land and water. This competition has resulted in "severe conflict between farmers and pastoralists" (Mbonile, 2005:49). Similar trends of migration and subsequent effects are reported in Usangu plains in Mbeya region, Bagamoyo in coast region and Kilosa district (Mbonile, 2005:48; Benjaminsen et al., 2009). Such movements according to Homer-Dixon have been a source of livelihood conflicts between new arrivals and the natives.

Critics of these views argue that land degradation cannot cause human livelihood insecurity as mechanisms to control it can be enhanced. According to Dejene et al. (1997), degraded land can be replenished by either or all of the following approaches. First, the availability of technology can revitalize degraded land. Such an approach attaches importance to the use of locally available technologies in collaboration with experts and land users. To this effect Fairhead and Scoones (2005) give examples where fertilizer, crop residues, and best farming practices on different landscapes can be used to enhance soil fertility. Second is the populist approach which attaches the importance of using traditional knowledge emanated among the local land users themselves. Third is a hybrid of "classical and populist" ideas. It insists on the interplay of technology and empowerment in land degradation control. This means that training on new measures to contain land degradation should be conducted as well as using local knowledge.

Despite these suggestions for alternative means through which land degradation could be controlled, there is still evidence of recurring conflicts. This signifies the need for analysing the context through which these conflicts occur. Analysis should therefore seek to address questions of whether the institutions governing land use plans are strong enough for good land governance.

Demand induced scarcity

Demand induced scarcity has been conceptualized as scarcity precipitated by increased consumption brought about by increasing population (Homer-Dixon, 1999). Indeed, the increase in population triggers a corresponding increase in the need for more land from which people derive their basic necessities of life (Homer-Dixon, 1999; Alam, 2008; Kangalawe and Lyimo, 2010; Link et al., 2015). This may cause intensive use of land, an action that leads to reduced quality and quantity unless sustainable land use practices are adopted. As Urdal (2005:418) argues, "countries with rapidly growing populations will experience degradation and scarcity of natural resources such as cropland, fresh water, forests, and fisheries increasing the risk of violent conflicts over scarce resources". These resources are necessary for the survival of human beings as they depend on them for food, drinking water and other livelihood amenities. Shortage or depletion will mean loss of life or sickness for the population. Likewise, as population increases, a corresponding demand for land for food production and space for living increases which ultimately has a negative impact on per capita income and consequently economic development (Homer-Dixon, 1999; Alam, 2008; Kangalawe and Lyimo, 2010; Link et al., 2015).

The result increased stress on the common pool of resources leading to degradation and depletion and hence the tragedy of commons (Hardin, 1968) cited in (Moritz et al., 2013). As natural resource degradation and depletion threatens human security and survival, people tend to migrate to other places as an adapting mechanism (Alam, 2008). Focusing on the effects of migration, Reuven says:

"The arrival of environmental migrants can burden the economic and resource base of the receiving area, promoting native–migrant contest over resources. Pressures are expected to rise with the number of migrants and residents, particularly when resources are scarce in the receiving area and property rights are underdeveloped. The excess demand for resources may also generate lateral pressure, expansion of economic and political activities beyond the region's or state's borders in order to acquire resources, which increases the risk of conflict" (Reuveny, 2007:659).

The study done in Tanzania by Mbonile (2005) shows that there has been an intensive migration of farmers and livestock keepers from highlands to lowlands close to water sources. He argues that increased migration has led to a corresponding increase of population and livestock as well. This has led to frequent conflict over land and water between farmers and pastoralists. In relation to the Pangani water basin, Mbonile continues:

"*The conflict between livestock keepers and farmers in the Pangani basin started in early 1950 when the basin experienced the in-migration of pastoralists from the southern regions and farmers from the highlands. The pressure of pastoralists on the basin became more serious after independence in 1961simply because land formally reserved from pastoralists was no longer protected. The average in-migration alone was about 3000 cattle per year. Many in-migrants decided to settle in existing villages while others started villages of their own. As a result several new villages have been formed even in areas that were for livestock and this interrupted the transhumance of livestock keepers" (Mbonile, 2005: : 49).*

Empirical evidence also indicates that, farmer-pastoralist conflicts in Kilosa district of Tanzania started after the influx of Maasai pastoralists with large herds of livestock in 1968 (Benjaminsen et al., 2009). This followed policy and socio-economic changes that undermined the traditional form of livestock keeping that was

characterized by seasonal movement of herds across the Maasai land. Indeed, the introduced changes marginalized Maasai pastoralists, who responded by moving to other areas where they would have access to alternative grazing land; in this case in Kilosa district. As Maasai pastoralists arrived, coupled with other intervening factors such as land alienation for sisal estates, in-migration of people searching for jobs in sisal estates and expansion of Mikumi national park, the increase in people and livestock led to pressure on land resources (Benjaminsen et al., 2009). As a result the district has been experiencing stiff competition that in some cases leads to bloody clashes between farmer and pastoralists groups.

Echoing Malthusian views on the effect of population growth on human insecurity, cornucopians argue that there is a direct connection between population growth and resource scarcity and consequently poor economic development but on temporary bases (Bernauer et al., 2012). They challenge the possibility of violent conflicts resulting from the influence of population pressure on natural resources because the use of technology can increase the size of the resource pie. They give examples of where application of technology can enhance ground water extraction and purification for use in supplementation or amid the scarcity of natural waters. Indeed, investing in technology to produce intermediate goods that can be consumed and exchanged through markets would in a way enhance human adaptation to the environment with a dwindling natural resource. For this case they embrace population growth for economic gains (Bretschger, 2013) as it sets favourable ground for reliable sources of labour and markets.

They argue that the problem of resource scarcity can be curbed through institutions that would set mechanisms for fair distribution of both resources and power within the community. However, the extent to which they are able to buffer communities from the adverse effects of resource scarcity depends on the quality of the institutions themselves. As Homer-Dixon (1999:32) put it, “better institutions, policies, and technologies can directly boost the physical availability of resources and reduce total resource demand”. For instance, “the development and distribution of new grains adapted for dry climates and eroded soils, of alternative cooking technologies to compensate for the loss of firewood, and of water conservation technologies depend on an intricate and stable system of markets, legal regimes, financial agencies and educational and research institutions” (Homer-Dixon, 1994:17). In this way grievances leading to conflicts can be largely minimized. Based on this understanding it could be suggested that there are several other factors interacting with perceived scarcity for violent conflicts to happen (Bernauer et al., 2012). They deny the possibility that resource scarcity alone can be the main cause of conflicts.

These arguments testify the need for empirical evidence on the contribution of increased population to farming and grazing land scarcity through a multidimensional perspective. This involves answering questions such as: (1) has there been evidence of in-migration of people and livestock within the district? (2) Have there been any land conflicts before in-migration of people and livestock? (3) What are the politics surrounding land use and distribution? (4) Does land resource governance meet perceived farmers and pastoralists interests? (5) Is there infrastructure such as dams, cattle dips to support livestock keeping? Answers to these questions will determine the extent to which population increase leads to land scarcity and consequently conflict.

Structure induced scarcity

Structure induced scarcities occur when resources are not distributed equally among members of the society or community (Homer-Dixon, 1999). This inequality in resource distribution is nurtured by institutional systems and “ethnic relations” having their “roots from colonial period” (Homer-Dixon, 1994:15). Worse, the existing imbalance in natural resource distribution may relate to external factors. Homer-Dixon (1994) identifies some of these factors as the created poverty trap and national debt in developing countries. He argues,-

“The imbalance is frequently sustained and reinforced by international economic relations that trap developing countries into dependence on a few raw materials exports. It can also be reinforced by heavy external debts that encourage countries to use their most productive environmental resources – such as their croplands and forests - to generate hard currency rather than to support the most impoverished segments of their populations” (Homer-Dixon, 1994: 15).

The nature of scarcity when alone or in combination with other sources of scarcities causes social and economic hazards such as “constrained agriculture and economic productivity, increased migration, sharper social segmentation, and disrupted institutions” (Homer-Dixon, 1999:52; Benjaminsen and Boubacar, 2021), creating a potential for violent conflicts. To get a wider view on how structure induces resource conflicts, I look into the politics surrounding land ownership and land grabbing.

The interaction of supply, demand, and structure induced scarcities

Research evidence indicates that, often, supply, demand and structural induced scarcities do interact, leading to two kinds of social processes known as “resource capture” and “ecological marginalization” (Homer-Dixon, 1994; Homer-Dixon, 1999). Homer-Dixon defines

resource capture as a situation when the available resources face great pressure from high demand of the increasing population. When this happens, some segments of the society especially those in the centre of institutions allocate a greater proportion of scarce resources to themselves at the expense of the majority who are socially weak (Homer-Dixon, 1999). He adds that such groups of powerful elites enable this to happen by skewing policies and laws governing resource distribution in their favour to the detriment of the marginalized groups within the society. This weakens institutional responses to social grievances and increases the risk of violent conflicts (Bernauer et al., 2012:2).

Homer-Dixon (1999:73) defines ecological marginalization, as a situation "when unequal resource access joins with population growth to cause migrations to regions that are ecologically fragile, such as steep slopes, areas at risk of desertification, tropical rainforests and peri-urban squatter settlements". Shifting to these areas causes even more land degradation and depletion because of population increase that leads to a corresponding unsustainable intensive land use. As such the land becomes unfit for crop farming and livestock keeping hence jeopardizing human livelihood security. The result has often been competition and violent conflicts over productive land resource. In the Philippines for example, such livelihood insecurity "spurred insurgence and rebellion"(Homer-Dixon, 1999:77). Contentions surrounding structural scarcity however, need detailed analysis, especially under particular contextual factors. To enhance this, the author look into the politics surrounding the relationship between structural scarcity and land tenure on one hand and then structural scarcity and land grabbing on the other hand.

Structural scarcity and land tenure

The current mode of land accessibility and tenure security for local populations in developing countries is full of uncertainties. Scholars associate this insecurity with the high value attached to it that has forced land reforms to allow private ownership for commercial investment purposes (Boone, 2017; Soeters et al., 2017; Matondi et al., 2011; Kuusaana and Bukari, 2015). This has contravened the historical customary land tenure system that has been in practice from the pre-colonial era to as far as the early 1980s and allowed a communal mode of ownership of common pool resources such as land, forests and water. The current mode of access to customary land has created an opportunity for groups that are politically and economically powerful to have access to secure land tenure at the expense of the weaker groups who are basically farmers and pastoralists (Kuusaana and Bukari, 2015).

In one of their studies in Ghana, Soeters et al. (2017) argue that West African farmers and pastoralists enter into frequent conflicts as result of lack of tenure security aggravated by structural changes that have accommodated private modes of land ownership, foster agricultural modernization agenda and injection of private capital in farm expansion.

This has limited the common property mode of utilization of land that granted freedom to different user groups including farmers and pastoralists (Kuusaana and Bukari 2015). Introduction of legally binding boundaries to privately owned land has led to restricted access to pasture and water for livestock. The situation in many cases precipitates conflicts between famers and pastoralists (Soeters et al., 2017).

Tanzania has been undertaking similar structural reforms on land tenure and ownership since the 1980s. These reforms, that led to new policies regarding land use and governance, were aimed at tenure security and conflict reduction among all land user groups (Askew et al., 2013; Biddulph, 2018). Current policies and legislation derive their origin from a land act enacted in 1999 which aimed to enhance land governance through local decentralized structures that would be responsible for land governance and conflicts management (Biddulph, 2018; Pedersen, 2016). Despite this good intention, debate on persistent tenure insecurity and conflicts continues. For example, the new policies have led to eviction of pastoralists from their traditional grazing lands in Arusha and Manyara regions in favour of hunting firms (Bluwstein et al., 2018; Askew et al. 2013) and National Agriculture and Food Cooperation (NAFCO) ((Bluwstein, 2018) despite legal recognition of their village lands. Sometimes transfer of ownership of land does not follow the prescribed legal procedure due to corrupt office bearers trusted to oversee the process. Such behaviour deprives local farmers and pastoralists from their traditional ownership rights. These policies seem to marginalize the minority groups in terms of land ownership and security. Neo-Malthusians associate this with structural scarcity that leads to a reduction of the resource pie as a result of unfair land allocation. The reduced land size has actually contributed to fierce competition between farmers and pastoralists in Arusha and Manyara regions (Askew et al., 2013).

There are claims that pastoralists are the groups most vulnerable to these policies as in most cases they discourage traditional ways of livestock keeping. They emphasize reduction of the herd size to pave the way for a sedentary mode of pastoralism. At times, implementation of these policies involves forced migration of pastoralists by state law enforcement organs. As Askew et al. (2013:123) reports,- "one of the worst cases of state-led oppression of pastoralists was the 2006 eviction of approximately 1000 pastoralist households in the Ihefu valley of southern Tanzania. The evictions were rationalized via the claim that pastoralists were responsible for significant environmental degradation". This has created a sense of anti-pastoralism

among policy makers and the general public regardless of the fact that pastoralism's contribution to Tanzanian GDP is around 7.4% (URT, 2015). In cases of competition or conflict farmers are always favoured by government officials particularly in Kilosa district (Benjaminsen et al., 2009:440).

Revealing how structural induced scarcity induces marginalization of the weaker sides of society, Askew argues, "discrimination against and ridicule of pastoralists and other indigenous minorities by the authorities and the press is taking institutional form in legislation and judicial precedents that undermine and devalue the livelihood, human rights and economic contributions of indigenous communities who are viewed as backward by many in positions of power" (Askew et al., 2013:123). He emphasizes that their lawsuits against deprivation of land rights always end up in failure and disappointment. Some examples are: the Maasai pastoralists of Kenya who lost a lawsuit of 1913 in the high court and the 2010 lawsuit against eviction of Maasai pastoralists from Loliondo-Northen Tanzania which they lost (Askew et al., 2013). As such, according to Askew, a sense of paranoia is created among pastoralists against demanding their rights through courts.

Thus, from the structurally induced scarcity point of view and based on the claims above, one would conclude that, indeed the nature of resource distribution may create land scarcity. The preceding arguments signify a need to define scarcity based on a particular context. This means that, even if the available land area is very small because of high population, good policies and responsible institutions can reduce the intensity of scarcity through fair and just land governance and distribution. However, the reality depends on the particular context across regions. In the same line of thinking (Peters, 2008) argues that it is not land scarcity that matters, rather the politics surrounding land governance and distribution. He refers to the Kwaja farmers and Fulbe pastoralists of Cameroon where unjust policies led to conflicts. He further argues that what causes conflict is actually confusion over "how different resources should be managed, who has what responsibilities and duties, and who has what authority to locate rights and resolve conflicts" (Peters, 2008:633). He argues that conflicts become a result of competition over the authority that governs land allocation through different machineries as opposed to competition over scarcity.

Structural scarcity and land grabbing

Literature suggests that land grabbing is increasingly changing forms of land access and ownership in African continent (Soeters et al., 2017; Matondi et al., 2011). This is due to the recent incidence of hiked oil and food prices in the global markets that jeopardize energy and food security. As argued by Matondi et al. (2011:1), the situation "results in a global push for bio fuels from various agricultural feed stocks, as well as for land in order to enhance food production and food security". In a bid to support the global concern for energy and food security, developing nations moved for structural land reforms to accommodate private land ownership under the financial assistance of the World Bank and other international financial institutions (Collins and Mitchell, 2018; Matondi et al., 2011; Pedersen, 2016).

This move has however been strongly resisted by local landowners across developing nations as the exercise seems to undermine local land ownership rights. As such, the resistance has "affected moral, economic, and political relations between and within nations, classes and communities both inside and outside Africa" (Matondi et al., 2011:1). Despite this and while motivated with promises of "economic development from foreign investors and technological innovations in agriculture'' leaders of developing nations formulate policies that embrace the interests of investors while ignoring protection of indigenous interests on land access and ownership rights (Matondi et al., 2011:14). Equally, as they argue, they are also often motivated with the need to enhance their (African policy makers) unique opportunity for land capture.

Some scholars are concerned that the current push ultimately displaces smallholder farmers from their customary owned land.

As land grabbing intensifies farmers continue to suffer. A significant part of their land is taken by large multinational companies without their consent or through terms that are not favourable to them (Soeters et al., 2017; Collins and Mitchell, 2018; Matondi et al., 2011). Literature suggests that in most cases it is the government that enters into bilateral agreement with the investors without thorough involvement of native land stakeholders who are smallholder farmers and pastoralists (Matondi et al., 2011). This has been possible due to the ability of large companies to influence the implementation of policies to their advantage. In this way policies are implemented in ways that undermine indigenous land access and ownership rights, encourage land grabbing as a source of land scarcity. Homer-Dixon identifies this scenario as structural scarcity because policies seem to embrace classes (the haves and the have nots in terms of wealth and political power) in land distribution and ownership. Referring to his resource pie metaphor, he argues that if there is an inequality in land access due to skewed policies majority who are for this case farmer and pastoralists are confined to a small area of land. This has often been the source of competition between these two groups in a bid to secure their livelihood. The result has often been migration, forced eviction and violent conflicts particularly between farmers and pastoralists or with other land user groups.

Referring to a Tanzanian case, Nelson argues that, "there is nevertheless a growing sense of pervasive land

grabs encroaching on local rights, marginalizing rural farmers and pastoralists who depend on land, water and other natural resources, and further concentrating wealth and assets in the hands of political and economic elites" (Nelson, 2012:2).

This is happening following the land reforms that came with both the land act of 1999 and village land act of 1999. These acts aimed to establish legal procedures for land governance and distribution that would recognize customary land ownership rights among communities (Collins and Mitchell, 2018). Contrary to this, farmers and pastoralists have consistently been denied their rights to land ownership and hence been forced to live in marginal areas. For example, Nelson reports that, in 2009, Maasai communities were forcibly evicted by the government from their traditional land in Loriondo in favour of "Ortello Business Corporation (OBC)", a famous hunting company from United Arab Emirates. This move happened despite the claim by the then Loriondo member of parliament that the government's step "ignored the empirical reality that the communities in Loriondo had clear rights to these lands under the Village Land Act, including past title deeds as well as other documentations" (Nelson et al., 2012:14). This indicates that, either laws or policies governing land access and ownership favour politically and economically powerful individuals to the detriment of the poor, or there are deficiencies in good governance. It is therefore the intention of this study to establish empirical evidence on the contradiction between policies that claim to protect communities' customary land ownership rights and the on-going wave of land grabbing which seems to ignore those rights.

Socio-political context and farmer-pastoralist conflicts nexus

Historically farmers and pastoralists have existed side by side depending on each other for a number of things such as grazing on cropland during the off season while fertilizing land by animal droppings (Moritz, 2006; 2009; 2010). Pastoralists benefited by feeding their flocks on harvested cropland and buying food from farmers, while farmers benefited through added soil nutrients from animal droppings, milk, meat and other cattle by products (Moritz 2006; 2010). The nature of the relationship seems to have changed as a result of population growth that demanded more land for settlement and crop farming (Fratkin 1997; Moritz 2006) and recent policy changes that saw extensive land grabbing for commercial farming and other investments (Bluwstein et al., 2018; Collins and Mitchell, 2018; Matondi et al., 2011). These changes together led to encroachment on the land initially used for communal livestock grazing, and hence intensified competition and animosity between farmers and pastoralists (Moritz, 2006).

Referring to the West African case, (Mbah et al., 2021; Moritz, 2006; 2010) argues that empirical evidence indicates frequent escalation of bloody conflicts over dwindling land resources between these two groups in many parts of West Africa. Moritz in this case adds that, such conflicts in most cases undergo mutations that witness, initial land conflicts turning into ethnic, secular or political conflict. The point of departure here will therefore be asking ourselves as to why do these conflicts undergo mutation? Why do they keep on escalating? What are the real causes of these conflicts? Can land scarcity alone cause violent conflict?

Referring to the context that proliferates in these conflicts (Moritz, 2006) gives examples of Nigeria and Cameroon. He argues that farmer pastoralist conflicts in these areas are potentially fuelled by intervening religious and political factors. This scenario has clearly been narrated by Malthusians that, under intense resource scarcity, grievances increase, causing individuals' mobilization into groups with ethnic and/or religious sentiments that would cause them to come up with a more organized protest or violence (Homer-Dixon, 1999; Urdal, 2005; Moritz, 2006). What comes out of this "does not only have a direct impact on the lives and livelihoods of those involved in the conflict, but they are also disrupting and threatening the sustainability of agricultural and pastoral production systems" (Moritz, 2006; 2010). One of the deadly conflicts reported by Moritz happened in 2004 and involved expulsion of massive numbers of Fulbe pastoralists from their traditional land in Nigeria to Cameroon. Moritz (2006) states that, unlike other countries like Somalia, Sudan and the East African countries, farmer-pastoralist conflicts in West Africa rarely involve the use of firearms (Moritz, 2006). This is unlike Tanzania where empirical evidence on farmer-pastoralist conflict taking a religious course are yet to be established but in most cases traditional weapons such as spears, bow and arrows are used against the opposite side causing fatalities (Benjaminsen et al., 2009). However, evidence shows that there is more behind farmer-pastoralist resource conflict in Tanzania.

Research findings show that, context matters when analysing nature of land conflicts as in the Cameroon and Burkina Faso cases. A study by Dafinger and Pelican (2006) shows that Fulbe agro-pastoralists integrate peacefully with farming communities unlike Fulbe pastoralists on the Cameroon side where incidences of violent clashes with farmers exist. Explaining the cause for such differences from land use and legal frameworks the authors argue that:

"*Shared use of land and land resources such as water holes, arable fields, and pasture encourages integration through permanent low level conflicts, whereas a divided landscape and allocation of exclusive land titles increases the potential for violent conflicts" (Dafinger and Pelican 2006: 128).*

This means that land conflicts between farmers and pastoralists in the two countries are shaped by their contextual land use and legal frameworks. As argued by (Dafinger and Pelican 2006), “In Burkina Faso, the historical and political setting supports an ideology of shared landscape, while in North West Cameroon, the colonial and post-colonial legislations promotes the division of resources along socio-economic categories” (Dafinger and Pelican 2006: 128).

In Tanzania, incidences of farmer-pastoralist conflicts are common. Although most of these conflicts surface as scarce resource conflicts in the first instance, scholars urge that a careful analysis must be done to identify the underlying hidden factors. It is really easy to acknowledge them as land resource conflicts because what we see is the act of livestock feeding on farmer’s crops, livestock routes heading to water points blocked by farms and grazing lands converted into cropland (Mbonile 2005; Moritz 2006) while in actual sense there are underlying factors. For example, literature suggests that government initiatives to alienate land from Barabaig pastoralists of Hanang district and Maasai pastoralists of the northern part of Tanzania for wheat plantations and ranches respectively caused devastating effects on the traditional pastoral system (Kajembe et al., 2003). These initiatives involved total eviction of many pastoralists from their traditional designated areas to other areas where they eventually entered into conflicts with farmers. We can see that one of the underlying factors here is the government action of land alienation. Scarcity conflicts in this case depend on other underlying factors and the context in which the conflicts happen. Emphasizing this argument Moritz argues that; “The focus on the contexts and dynamics of farmer herder conflicts allows us to examine why conflicts are more likely to occur in some contexts than others, how they evolve over time, and why some are relatively easily resolved and others escalate” (Moritz, 2006:4). This implies that it is not easy to generalize on the nature of land conflicts across the region, and therefore approaching such studies from a case study perspective seems to be relevant.

As we have already seen in the preceding sections, there is lots of evidence linking farmer-pastoralists conflicts with competition for scarce resources (Mbah et al., 2021; Homer-Dixon, 1999; Moritz, 2006) in line with Malthusian thinking. However this view has attracted a number of criticisms from scholars of varying disciplines such as political ecologists who consider the environmental scarcity and conflict relationship as a simple metaphor that cannot describe the full reality (Peluso and Watts, 2001: in Moritz, 2006) in the current dynamic social and political environment. Instead, they pose a distinct view that “the environment is simply the arena in which social, political, and economic conflicts between different actors are played out” (Moritz, 2006:3).

This perspective indicates that there must be a number of intervening factors for environmental scarcity to cause violent conflicts.

Conclusion

The paper has reviewed the theoretical overview of land resource conflicts, particularly factors underlying land conflicts between farmers and pastoralists. The paper indicates that the causes of these conflicts are numerous and complex.

Most of these factors seem to have been structurally motivated or contribute to structural scarcity which in most cases becomes a source of grievances and violent conflicts. This implies that there is an interlinkage between what manifests to be the factors causing conflicts and the social and political structures of the society. For instance, critical examination of the environmental scarcity narrative has revealed that, when resources are few due to the increase in demand and degradation, two kinds of scarcities exist. First is the direct scarcity among the beneficiary groups such as farmers and pastoralists, and second is the scarcity influenced by social structures of the society. The latter comes as a result of manipulation of policies to favour the haves while undermining the have nots (the marginalized). The broader policy implication is the need for wider, inclusive, and dynamic review of the formal and informal socio-political structures governing resource distribution as a way of curbing inequalities and resulting conflicts in Africa.

CONFLICT OF INTERESTS

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REFERENCES

Alam S (2008). Environmentally induced migration from Bangladesh to India. Strategic Analysis 27(3):422-438.

Alao A (2007). Natural resources and conflict in Africa. The tragedy of endowment: USA, University of Rochester Press.

Andersson E, Brogaard S, Olsson L (2011).The political ecology of land degradation. Annual Review of Environment and Resources36:295-319.

Askew K, Maganga F, Odgaard R (2013). Of land and legitimacy: A tale

of two lawsuits. Africa 83(01):120-141.
Azar E (2015). The management of protracted social conflicts: In Woodhouse T, Miall H, Ramsbotham O, Mitchell C (eds,). The contemporary conflict resolution reader. Polity press: Cambridge.
Beck U, Bjerge B (2017). Pro- poor land transfers and the importance of and abundance and ethnicity in the Gambia. World Development 99:122-140.
Benjaminsen TA, Boubacar B (2021). Fulani-Dogon killings in Mali: Farmer-Herder Conflicts as Insurgency and Counter insurgency. African Security 14(1):4-26.
Benjaminsen TA, Maganga FP, Abdallah JM (2009). The Kilosa killings. Political ecology of a farmer–herder conflict in Tanzania. Development and Change 40(3):423-445.
Bernauer T, Böhmelt T, Koubi V (2012). Environmental changes and violent conflict. Environmental Research Letters 7(1):015601.
Biddulph R (2018). The Tanzanian land acts as a community lands approach: A review of research into their implementation. Land Use Policy 79:48-56.
Bluwstein J, Lund JF, Askew K, Stein H, Noe C, Odgaard R, Maganga F, Engstrom L (2018). Between dependence and deprivation: the interlocking nature of land alienation in Tanzania. Journal of Agrarian Change 18(4):806-830.
Boone C (2017). Legal empowerment of the poor through property rights reform: Tensions and trade-offs of land registration and tilting in sub-Saharan Africa. Helsinki, Finland.
Boulding K (2015). Conflict and defence: A general thoery. In: Woodhouse T, Miall H, Ramsbotham O, Mitchell C (eds,). The contemporary conflict resolution reader. Cambridge: Polity press.
Bretschger L (2013). Population growth and natural-resource scarcity: Long-run development under seemingly unfavorable conditions. The Scandinavian Journal of Economics 115(3):722-755.
Collins A, Mitchel MI (2018). Revisiting the World Bank's land law reform agenda in Africa: The promise and perils of customary practices. Journal of Agrarian Change 18(1):112-131.
Dafinger A, Pelican M (2006). Sharing or dividing the land? Land rights and farmer-herder relations in Burkina Faso and Northwest Cameroon. Canadian Journal of African Studies/La Revue Canadienne des études Africaines 40(1):127-151.
De Bruijn M, Van Dijk H (2005). Natural resources, scarcity and conflict: A perspective from below In Chabal PU (ed,). Is violence Inevitable in Africa? Theories of conflict and approaches to conflict prevention. Boston: Brill Leiden.
Dejene E, Shishira EK, Yanda PZ, Johnsen FH (1997). Land degradation in Tanzania: Perception from a village. Washington DC, USA: World Bank.
Fabusoro E, Sodiya CI (2011). Institutions for collective action among settled Fulani agro-pastoralists in southwest Nigeria. Journal of Agricultural Education and Extension 17(1):53-68.
Fairhead J, Scoones I (2005). Local knowledge and the social shaping of soil investments: Critical Perspectives on the Assessment of Soil Degradation in Africa. Land Use Policy 22(1):33-41.
Fratkin E (1997). Pastoralism: Governance and development issues. Annual Review of Anthropology 26(1):235-261.
Hardin G (1968). The tragedy of the commons: the population problem has no technical solution; it requires a fundamental extension in morality. Science 162(3859):1243-1248.
Home R (2021). History and prospects for African land governance: Institutions, Technology and Land Rights for All. Land 10:292.
Homer-Dixon T (1999). Environment, Security, and Violence. New Jersey: Princeton University Press.
Homer-Dixon TF (1994). Environmental scarcities and violent conflict: Evidence from cases. International Security 19(1):5-40.
Ja'afar-Furo MR, Gabdo BH, Madu UA (2018). Dynamics of farmer-pastoralist conflicts in Nigeria: Causes, economic costs and possible resolutions. Journal of Agricultural Economics, Environment and Social Sciences 4(1):59-68.
Kajembe G, Mbwilo A, Kidunda R, Nduwamungu J (2003). Resource use conflicts in Usangu plains, Mbarali district, Tanzania. The International Journal of Sustainable Development and World Ecology 10(4):333-343.
Kangalawe RY, Lyimo JG (2010). Population dynamics, rural livelihoods and environmental degradation: Some experiences from Tanzania. Environment, Development and Sustainability 12(6):985-997.
Koubi V, Spilker G, Böhmelt T, Bernauer T (2014). Do natural resources matter for interstate and intrastate armed conflict? Journal of Peace Research 51(2):227-243.
Kuusaana ED, Bukari KN (2015). Land conflicts between smallholders and Fulani pastoralists in Ghana: Evidence from the Asante Akim North District (AAND). Journal of Rural Studies 42:52-62.
Lestrelin G (2010). Land degradation in the Lao PDR: Discourses and policy. Land Use Policy 27(2):424-439.
Link PM, Brücher T, Claussen M, Link JS, Scheffran J (2015). The nexus of climate change, land use, and conflict: Complex human–environment interactions in Northern Africa. Bulletin of the American Meteorological Society 96(9):1561-1564.
Malley ZJ, Taeb M, Matsumoto T, Takeya H (2008). Linking perceived land and water resources degradation, scarcity and livelihood conflicts in southwestern Tanzania: Implications for sustainable rural livelihood. Environment, Development and Sustainability 10(3):349-372.
Matondi PB, Havnevik K, Beyene A (2011). Introduction: Biofuels, food security and land grabbing in Africa. In Matondi PB, Havnevik K, Beyene A (eds,). Biofuels, food security and land grabbing in Africa. London: Zed Books.
Mayer B (2012). The dynamics of conflict: A guide to engagement and intervention: Second edition. San Francisco: John Wiley & Sons.
Mbah PO, Iwuamadi KC, Udeoji E, Eze M, Ezeibe CC (2021). Exiles in their region: pastoralist-farmer conflict and population displacements in North Central, Nigeria. African Population Studies 35(1):5219-5228.
Mbonile MJ (2005). Migration and intensification of water conflicts in the Pangani basin, Tanzania. Habitat International 29(1):41-67.
Moritz M (2006). Changing contexts and dynamics of farmer-herder conflicts across West Africa. Canadian Journal of African Studies/La Revue Canadienne Des Études Africaines 40(1):1-40.
Moritz M (2009). Farmer-herder conflicts in Sub-Saharan Africa. The encyclopaedia of Earth.
Moritz M (2010). Understanding herder-farmer conflicts in West Africa: Outline of Processual approach. Human Organization 69(2):138-148.
Moritz M, Scholte P, Hamilton IM, Kari S (2013). Open access, open systems: Pastoral management of common-pool resources in the Chad Basin. Human Ecology 41(3):351-365.
Mwamfupe D (2015). Persistence of farmer-herder conflicts in Tanzania. International Journal of Scientific and Research Publications 5(2):1-8.
Naab FZ, Dinye RD, Kasanga RK (2013). Urbanisation and its impact on agricultural lands in growing cities in developing countries: A case study of Tamale in Ghana. Modern Social Science Journal 2(2):256-287.
Nelson F (2012). Natural conservationists? Evaluating the impact of pastoralist land use practices on Tanzania's wildlife economy. Pastoralism 2(1):1-19.
Nelson F, Sulle E, Lekaita E (2012). Land grabbing and political transformation in Tanzania. International conference on global land grabbing II. Cornell University, Ithaca NY. LDIP.
Ngin C, Verkoren W (2015). Understanding power in hybrid political orders: Applying stakeholder analysis to land conflicts in Cambodia. Journal of Peace building and Development 10(1):25-39.
Nwokolo NN (2013). The political economy of oil resource conflicts: a study of oil village communities in Nigeria. Doctoral dissertation, university of Birmingham.
Pavanello S, Scott-Villiers P (2013). Conflict resolution and peace building in the drylands in the Greater Horn of Africa. Nairobi, International Livestock Research Institute (ILRI).
Pedersen RH (2016). Access to land reconsidered: The land grab, polycentric governance and Tanzania's new wave land reform. Geoforum 72:104-113.
Peluso NL, Watts M (2001). Violent environments. Cornell University Press.
Peters PE (2008). Conflicts over land and water in Africa: Edited by Bill Derman, Rie Odgaard and Espen Sjaastad. Journal of Agrarian Change 8(4):633-636.
Petersen KH (2017). Chaotic states: Agricultural ground rent in Africa. IIPE conference paper, Berlin, September 13-15.

Ratner B, Meinzen-Dick R, May C, Haglund E (2013). Resource conflict, collective action, and resilience: An analytical framework. Available at: https://www.thecommonsjournal.org/articles/10.18352/ijc.276/

Reuveny R (2007). Climate change-induced migration and violent conflict. Political Geography 26(6):656-673.

Rutten M, Mwangi M (2014). How natural is natural? Seeking conceptual clarity over natural resources and conflicts. Conflicts over Natural Resources in the Global South–Conceptual Approaches, 51.

Soeters S, Weesie R, Zoomers A (2017). Agricultural investments and farmer-fulani pastoralist conflict in West African drylands: A northern Ghanaian case study. Sustainability 9:2063.

Umbreit MS (1995). Meadiating interpersonal conflicts: A pathway to peace. Minnesota: CPI publishing.

Urdal H (2005). People vs. Malthus: Population pressure, environmental degradation, and armed conflict revisited. Journal of Peace Research 42(4):417-434.

URT (2015). Tanzania livestock modernization initiative. Available at: https://livestocklivelihoodsandhealth.org/wp-content/uploads/2015/07/Tanzania_Livestock_Modernization_Initiative_July_2015.pdf

Van Leeuwen M, Van Der Haar G (2016). Theorizing the land–violent conflict nexus. World Development 78:94-104.

Wallensteen P (2012). Understanding conflict resolution. London: Sage publication limited.