LUND UNIVERSITY

Master of Science

International Development and Management

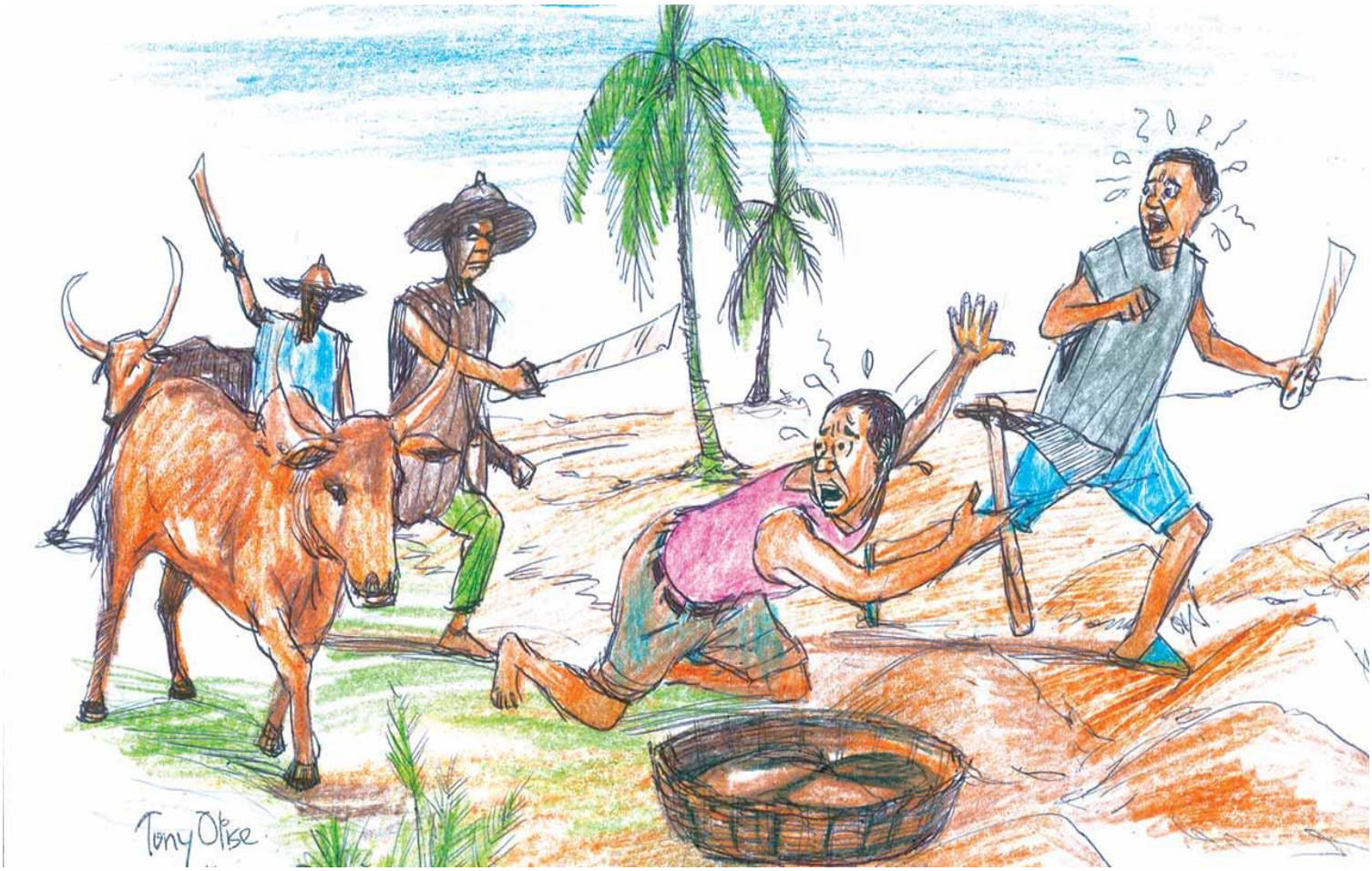
May, 2018

Are Indigenous Farmers' Investments Under Siege?

Implications of farmer-herder conflicts and threats to customary land tenure on indigenous farmers' agricultural investment decisions in Agogo, Ghana.

Author: Selorm Kobla Kugbega

Supervisor: Prof. Agnes Andersson Djurfeldt



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Abstract

Owing to structural factors of climate change and population growth, the past decade has witnessed high interest among migrant and settler pastoralist groups in the vegetal-rich customary lands of the Agogo Traditional Area. This has resulted in lease grants of large land areas to pastoralists by traditional authorities and usufruct families, for reasons of ensuring optimum use and gaining the highest returns from lands. This thesis examines the implications of consequent competing interests over land resources between farmers and herders on indigenous farmer's agricultural investment decisions. The study uses qualitative data methods and empirical evidence is given by primary data from semi-structured interviews and focus group discussions in the case study area. Results indicated that land owners exploit lapses in customary land administration systems to allocate lands, in exchange for money, to pastoralists while neglecting indigenous farmers' land use rights. Thus, indigenous farmers report land tenure insecurity and a sense of deprivation from their customary lands. Despite tenure insecurity concerns, farmer's agricultural investment decisions have not changed much because such changes in investment decisions may reduce incomes and compromise their livelihoods. The findings herein contradict theoretical expectations and provides new perspectives for understanding the relationship between tenure (in)security and investment decisions.

Key words: Agogo, Land tenure (in)security, Usufructs, Pastoralists, Farmer-herder conflict, Investment, Customary land, Fulani herders.

Word Count: 14,999

Acknowledgements

All praise be to God Almighty for His goodness and divine mercies that successfully guided me through this academic journey in Lund University. Sincere and heartfelt appreciation also goes to the Swedish Institute Scholarship Scheme for offering me a study scholarship that made my educational dreams a reality.

I wish to specially acknowledge the priceless contributions of Mr Stephen Tonah, the traditional leadership of Agogo, Members of the Agogo District Assembly and all others who welcomed me warmly during the thesis fieldwork period and made enormous contributions that shape this study.

I also wish to convey special thanks to Professor Agnes Andersson Djurfeldt (thesis supervisor) for your patience that painstakingly guided me though this thesis journey and priceless suggestions that directed the study. Special thanks to my family especially Mr. Eyram King Kugbega, Mrs Charlotte Esi Adzika, Mrs Dzifa Kraka, Mr Ernest Kraka, Miss Seyram Kugbega and Mr Sedem Kugbega for your timely words of motivation throughout the study period.

Finally, I wish to thank all my friends especially John, Richard and Benjamin who encouraged me throughout this study journey. Thanks for your support.

List of Abbreviations

ATA- Agogo Traditional Area

ATC- Agogo Traditional Council

CFGD-Convenience-Based Focus Group Discussions

FGD- Focus Group Discussions

GSS- Ghana Statistical Service

KI- Key Informant

MOFA- Ministry of Food and Agriculture

NSEZ- Northern Savannah Ecological Zone

PFGD-Purposive-Based Focus Group Discussions

RD- Relative Deprivation Theory

RQ- Research Question

SSA- Sub-Sahara Africa

UN- United Nations

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Chapter 1-Introdution

1.1 Background

Barriers to agricultural productivity in Africa have commonly been evidenced in poor soil quality, over reliance on rain-fed agriculture, poor market accessibility, lack of inputs and reliance on indigenous agriculture knowledge in a fast-changing world. More topical in recent times however is the limited access to land and poor tenure security attributable to increases in rural land commodification. Specifically, rural land demands have been influenced by the heightened demand for pasture by agro-pastoralists[1] who migrate towards hitherto uncharted parts of the forest and coastal zones in search of water and pasture. As expected, this growing pressure on land and water resources increases competition among user groups and poses challenges to customary land tenure security. Smallholder land rights are especially threatened by such competition (Cotula et al., 2006).

Customary land tenure systems (non-market based) have been praised for their ability to offer a degree of tenure security (Kasanga and Kotey, 2001), and lauded for their capacity to efficiently distribute land resources to all segments of land users (Juul and Lund, 2002). However, the infiltration of a market-based customary land allocation system which increases competing and overlapping land rights is problematic in ensuring tenure security for indigenes[2] (usufructs). Despite the inherent dynamism of customary land tenure systems in adjusting periodically to changing trends, it has been unable to efficiently solve land tenure insecurity problems. It has especially failed in reconciling the multiple and overlapping rights over land between smallholder crop farmers and agro-pastoralists.

With over 80% of Ghana's land area administered under customary land tenure arrangements, (Kasanga and Kotey, 2001) and 50% of the population engaged in agriculture (Blocher, 2006) farmer-herder conflicts and associated threats to land tenure security may compromise the livelihoods of smallholder farmers and aggravate poverty.

[1] For the purposes of this study the words "agro-pastoralists" , "pastoralists" and "herders" are used interchangeably. They are further used to refer to Fulani herders in the context of the study.

[2] For the purposes of this study, indigenes and usufructs (technical tern) are used interchangeably to denote the inherent land use rights of indigenous farmers.

1.2 Problem Statement

Traditionally, pastoralists did not settle permanently in the forest and coastal belts of West Africa due to the region's high humidity and susceptibility of animals to diseases (Blench, 1994). Thus, their activities in the West African sub-region were characterized by migration from the Savannah areas to the forest and coastal zones during dry seasons and movements back towards the Savannah areas during the rainy season. Meanwhile, the relationship between crop farmers and agro-pastoralists has been a complementary one characterized by pastoralists having access to crop remnants on harvested fields to feed their animals while crop farmers benefit from natural tillage by hoofs of animals and animal droppings that help fertilize lands for the next planting season.

Due to population increases, climate change, rural land commercialization and competing land use rights, the complementary relationship between smallholder crop farmers and agro-pastoralists has degenerated and led to an increase in land resource conflicts (Cotula et al., 2004). Sub-Saharan Africa has particularly witnessed a steady rise in farmer-herder conflicts in the past decade occasioned by competing demand for land and water resources to support subsistence or nomadic livelihoods.

Recently, the dynamics of agro-pastoralist's activities has changed to accommodate market-based rights gained through leasing of land to serve as pasture reserves during the dry season. This is a laudable attempt to prevent animals from grazing on crop lands however, it has further created discontent among community members because traditional authorities pay no regard to indigenous farmers (usufructs) when demarcating land for use by pastoralists (Kasanga and Kotey, 2001). Resulting, lands under cultivation by usufructs have been allocated to pastoralists by traditional leaders without due notice and consultations. The consequent competing rights to land for supporting livelihoods has generated contestations between usufruct farmers who have primary land use rights and pastoralists who have customary market-based land use rights (long-term leases). The effect is farmers complaining of land encroachment and crop destruction by pastoralists while pastoralists maintain the land has been rightfully granted to them and as such, they have use rights over all vegetal resources (including crops) within their customarily granted territorial boundaries.

The question of whose land rights supersedes the other in the customary set-up remains unanswered. Due to increasing competing interests over land and water resources for survival of either group, conflicts have arisen and the interactions between agro-pastoralists and subsistence farmers have thus degenerated from a state of symbiosis to a state of discord.

Land contestations or the absence of it is fundamental to determining land tenure security. De Soto (2000) and Besley (1995) argue that a threat to tenure security may discourage farmland investment, reduce productivity and have negative impacts on economic development. Although literature has focused on the causes of farmer herder conflicts and its socio-economic implications for either group, not much attention has been given to the agricultural investment decisions[3] *(hereinafter termed as investment decisions)* farmers are likely to make in the light of weakened tenure security occasioned by farmer-herder conflicts. This study seeks to fill this gap in literature.

1.3 Research Questions

The overarching research aim is to investigate the implications of competing customary land tenure rights and consequent conflicts between farmers and pastoralists, on indigenous farmers' investment decisions and coping strategies in the Agogo Traditional Area (ATA).

This aim is split into a set of four (4) research questions;

1. How has the nature of customary land administration systems influenced farmer-herder conflicts in the Agogo traditional area?
2. What are farmer's perceptions on the causes of the conflict with pastoralists in Agogo?
3. How are farmer-herder conflicts influencing indigenous famers' investment decisions, if any?
4. What strategies do farmers adopt to cope with the land tenure security threats posed by pastoralists?

Apriori, the study is based on the hypothesis that farmer-herder conflicts have increased land tenure insecurity and has been a disincentive to increased investment in agriculture land. To

[3] For our purposes, investment decisions relates to "agricultural investment" and is categorized in accordance with Besley's (1995) and Pagiola's (1999) conceptualization that farmers reduce farmland cultivation area and plant quick maturing as opposed to cash crops (that take longer times to mature) when the threat to tenure security is high.

examine the hypothesis, the dissertation studies the implications of competing customary land tenure rights and consequent conflicts between farmers and pastoralists, on indigenous farmers' investment decisions. It further studies the consequent coping strategies adopted by farmers in the Agogo traditional area to deal with land tenure security threats.

1.4 Structure of Thesis

The thesis is structured in 6 chapters. Chapter one presents the problem statement and research questions; Chapter 2 focuses on literature review of customary land tenure, land tenure security, agro-pastoralism and farmer-herder conflicts in Ghana; Chapter 3 presents the theoretical framework to guide the analytical focus of the thesis; Chapter 4 describes the methodological aspects of the study including data collection, data analysis and contextualization of the case study area; Chapter 5 details the analysis of data collected and discusses relevant findings while Chapter 6 draws conclusions and suggests areas of further research to shape policy discussions.

Chapter 2: Review of Related Literature

2.1 Introduction

This chapter focuses on introducing relevant secondary data and publications related to farmer-herder conflicts in Ghana with the aim of revealing the literature context within which the thesis is positioned. It includes sections on land administration in Ghana, customary land acquisition, agro-pastoralism and farmer-herder conflicts in Ghana.

2.2 Land Administration Systems

The United Nation's Land Administration Guidelines (1996) defines land administration as the totality of all processes including record keeping and land information sharing, that ensure the recognition of land rights to safeguard tenure security, dispute resolution, taxation, home finance and land reform. Ghana operates a bimodal system of land administration comprising customary land tenure and statutory land tenure. Statutory land tenure relates to land vested in the state to be held in trust for the land-holding community or such land acquired for public purposes through the state's power of eminent domain as allowed by Article 257 of the Constitution of Ghana (1992). Conversely, Cotula and Chauveau (2007) define customary land tenure as emanating from customary law which is a set of undocumented, yet socially recognized laws grounded in the traditions, culture, norms and customs of a group of people defined by a common lineage. Due to the differences in customs and traditions of different societies, customary law largely varies from one society to another and cannot be applied in a uniform manner across a geographical space of different cultures and ethnicities (ibid). Land use rights and ownership in customary land administration is primarily gained through membership of the land-holding community (usufruct), through purchase arrangements with traditional authorities or through purchase arrangements with usufructs.

2.3 Customary Land Administration Systems in Ghana

Kasanga and Kotey (2001) note that about 20% of Ghana's land area is administered under statutory land tenure and held by the state while 80% is administered under customary land tenure**.** Rights and interests[4] in customary land as allowed by article 257, 265 and 266 of the

[4] "Interest" is used as the technical word to denote the type of rights that different groups hold in land. It is differentiated in this section because in the hierarchy of land ownership and access, land rights denote lesser authority over land usually exercised by vulnerable groups. Eg. Right of way, collection of fruits, use of forest.

Constitution of Ghana (1992) include the allodial title, customary freehold interest, leasehold interest, sub-lease interests and share tenancies (da Rocha and Lodoh, 1999) ***(See Table 1)***. The allodial title is the highest interest in land from which all other rights and interests are derived. It is usually held by chiefs (by virtue of their occupancy of stools of skins[5]), Tendaana[6], clans and families. The customary freehold (usufructuary interest) which is the near maximal interest derived from the allodial title is usually held by individuals and families that are subject to the stool or skin and are members of the land-holding community. It arises from cultivation or occupancy of a vacant communal land by usufructs. Thus, usufructs enjoy an inalienable right to land use which cannot be contested by the allodial title holders unless such land is required for public purposes (da Rocha and Lodoh, 1999).

Leasehold land rights represent a lower interest that is carved out from any higher interest (allodial or customary freehold) for a duration of maximum 99 years subject to renewal or reverting to land owners (chiefs, usufructs) as stipulated by Article 265 and 266 of the Constitution of Ghana (1992). The leaseholder reserves the right to use or sub-let the land for the lease period after paying an agreed fee. The lowest statutorily recognized category of customary land rights is the customary share tenancy which denotes a gratuitous tenancy usually for farming purposes on a seasonal or annual basis where the landlord agrees to give the land for use by the tenant with the condition of receiving up to half or a third of the proceeds from the farm (Blocher, 2006).

[5] Stools or skins are the symbols of traditional power in Ghana. Thus, chief sits on a sacred stool or animal skin to show their authority.

[6] Tendaana literally means land owner and it pertains to the northern regions of Ghana where unlike most parts of Ghana, chiefs do not own land nor reserve the right to transfer ownership.

Table 1:Interests in Customary Land in Ghana

Interest	Duration	Held by	Reason
Allodial Title	Infinite	Chiefs and Traditional Authorities	Acting as land custodians
Customary Freehold	Infinite	Usufructs (indigenes)	Membership of community through lineage
Leasehold	Maximum 99 years	Anyone with whom the chiefs or usufructs reach an agreement	Market-based arrangements with chiefs or usufructs
Sub-leasehold	Up to duration of leasehold interest	Anyone with whom the leaseholder reaches an agreement	Market-based arrangements with leaseholder
Share-tenancies	Renewable yearly after payment of agreed proceeds to land owner	Chiefs, usufructs, leasehold and sub-lease right holders	Market-based arrangements with any higher interest holder

Source: Author's Construction, 2018 (Using information from da Rocha and Lodoh, 1999; Constitution of Ghana, 1992)

2.4 Perspectives on Customary Land Tenure Security

In customary law, land acquisition takes place in non-market-based dealings including settlement, gifting, inheritance, customary allocation by traditional leaders and borrowing; mostly done without documentation of allocations and the boundaries thereof (Lambrecht and Asare, 2016). Resulting, competing and overlapping land rights develop among multiple social groupings that depend on land for sustenance. This creates a sense of tenure insecurity which is defined as existing and perceived threats to exclusive use and enjoyment of land resources (Goldstein and Udry, 2008). Recently, customary land administration has integrated market-based transactions yet Lambrecht and Asare (2016) assert that this has compounded the problem of multiple and overlapping interests occasioned by sales made by family heads and chiefs who disregard the land rights of usufructs.

Following the competing land rights in customary land tenure systems, Deininger (2003) and de Soto (2000) conclude that tenure security in such informal land systems is lacking. However, Kasanga (2001) in his study of selected communities in northern Ghana debunks fears of customary tenure systems lacking tenure security. He argues in consonance with Platteau's

(2000) findings that customary land tenure systems offer a high degree of land tenure security due to the rich communal knowledge that identifies the borders of each community member's property. Bugri (2008) made similar observations in north eastern Ghana and concludes that the tenure security offered by customary land tenure systems is efficient and equitable because it recognises multiple and secondary rights that may serve as safety nets for vulnerable groups.

The ensuing sections focus on land administration systems and pastoralism in the particular context of Ghana.

2.5 Pastoralism and Land Administration in Ghana

Pastoralism is common in the arid and semi-arid zones of Africa. The agro-climatic condition of the zone is conducive for supporting livestock rearing due to the availability of vegetal resources during the rainy seasons and the ability to easily fight or avoid common livestock diseases. Resulting, indigenous pastoral tribes who traditionally rear livestock on a free-range basis characterized by migration to the greener areas of the forest and coastal zones during the dry season (Blench,1994), have existed in Africa for centuries. In West Africa, the Fulani's[7] are the largest ethnic group engaged in pastoralism and in Ghana, they are among the first settlers in the Northern savannah ecological zone (Tonah, 2006).

Traditionally, pastoralist's land tenure rights are rooted in customary law hence their land rights are held under communal tenure (Migot-Adholla et al., 1991). These rights are based on a complementary relationship for reciprocal use of land resources between pastoralists and farmers hence creating resource sharing expectations (Lengoiboni et al., 2010). Resulting, traditional land rights by pastoralists can best be described as seasonal or spatiotemporal. Spatiotemporal land rights which have been associated with the tragedy of the commons theory and its limitations has been key to encouraging private and market-based land ownership with associate measures to sedentarize pastoralists (McCarthy et al., 1999). However, attempts at recognizing private property ownership through dividing communal lands, limits the traditional means of accessing water and vegetal resources by pastoralists and increases land contestations (Mwangi and Dohrn, 2008).

[7] Fulani's are largely categorised into two groups: cattle owners or cattle herders.

2.6 Farmer-herder Conflicts in Ghana: A Historical Overview

Tonah (2006) notes that farmer-herder conflicts in Ghana predates colonialism however, the development of permanent settlement patterns as well as recognition of formal relations with usufructs especially in the country's Northern Savannah Ecological Zone (NSEZ) was mainly noticed during the development of the cattle trade and the onset of the Sahelian droughts between 1960 to 1980. Benjaminsen et al., (2012) opined that the Sahelian drought threatened the adaptive capacity of pastoralists to climate change in the arid and semi-arid regions of West Africa and forced many to move southwards to the rich forest and grassland plains of the Agogo traditional area and other nearby communities. With growth in cattle numbers, rural population growth and farm expansion of indigenes, there arose competing rights to land for livelihood support hence in 1997, the first case of violent clashes between farmers and pastoralists was recorded in the Agogo traditional area (Opoku, 2014).

By 1999, the discontent between farmers and herders had increased and Tonah (2002) documented that male youth armed with guns, machetes and catapults organized themselves into a local vigilante group called "marimakuo" (men's group) with the singular motive to forcibly drive pastoralists out of the Agogo traditional area. The result was recurrent clashes between indigenous farmers and Fulani herders. Realizing the recurrent nature of farmer-herder clashes and in an attempt to harness the potential gains of cattle rearing for community development, the Agogo paramountcy (headed by the paramount chief), sought to recognize pastoralist's land rights through customary registration and lease agreements with four cattle owners[8]. Kuusaana and Bukari, (2015) observed that the initiative which was expected to set in motion a new pattern for recognition of pastoralists by the paramountcy and community members, rather opened the floodgates for informal[9] arrangements between usufructs and other cattle owners or sublease arrangements between the four registered cattle owners and other cattle owners ***(see Table 2)***. The effect was an increase in the cattle population in Agogo which increased pressure on the land and its vegetal resources.

[8] The cattle owners may be Ghanaian or non-Ghanaian but they both employ Fulani herdsmen to tend their cattle.

[9] Though usufructs and registered herders had genuine rights to transfer land, their contravention of the condition to register new herders with the Agogo traditional council amounts to a disregard of the allodial title and renders their transactions with herders informal.

Table 2: Formal and informal customary land transactions with herders

Formal Customary Land Transactions	Informal Customary Land Transactions
Between the Agogo paramount chief and herders	Between usufruct families and cattle owners
	Sub-lease agreements between formally recognized cattle owners and new cattle owners
	Between individual usufructs and cattle owners

Source: Author's Construction, Field Data (2018)

2.7 Drivers of farmer-herder Conflicts

Wehrmann (2008) opined that it is difficult to know the exact underlying catalysts of farmer-herder conflicts because they may have socio-economic, political, cultural, legal, ecological, ethnic or religious connotations hence causes may be multifaceted. Moritz (2010) in his studies in Burkina Faso, identifies climate change effects in the Sahel region as one of the drivers of farmer-herder conflicts. He notes that climate change effects have led to the dwindling of natural vegetal resources which leads to pressure and competition among user groups over remaining available resources. Tonah (2002) validates the climate change thesis and further asserts that the migration pattern of herders from the drought-ridden Sahel regions (as a means of coping with the effects of climate change) towards the forest and grassland areas of sub-Saharan Africa leads to livelihood disruption of indigenous farmers and sparks conflicts.

Population growth and associated increase in demand for cultivable land by farmers has been cited in the critical literature as a major push factor for farmer-herder-conflicts. Population growth further increases demand for food and encourages largescale crop cultivation which either limits land area available for use by pastoralists or leads to encroachment into former cattle grazing areas and routes; thus, creating contestations (Turner et al., 2011).

Conflicts may also take a cultural, ethnic or religious dimension. These ethnic, cultural and religious differences are fueled by notions of prejudice and suspicion. In Ghana for example, the Fulani's (major agro-pastoral ethnic group in West Africa) have been tagged as non-Ghanaian and violent hence creating a socially constructed consensus to reject them (Bukari, and Schareika, 2015).

Meanwhile structural causes such as climate change, population increase and cultural differences need to be differentiated from triggers of conflict. Generally, triggers include accusations of engagement in social vices by pastoralists, crop destruction, breakdown of traditional conflict resolution structures, bush burning, water pollution, among others (Abubakari and Longi, 2014; Abdulai and Tonah, 2009).

Picture 1: Armed Pastoralist

Source: Bulwark Intelligence, 2017

Chapter Three: Theoretical Framework

3.1 Introduction

Chapter three introduces the theoretical framework which is structured after Besley (1995) and Pagiola's (1999), theory of land tenure security and associated implications for farmland investments. The thesis draws on three supporting theories of ***communal land tenure, relative deprivation and coping theory*** to conceptualize the case of farmer-herder conflicts and its implications on indigenous farmer's investment decisions. Logically, it departs from the ***Theory of communal land tenure*** which describes land (a basic asset for sustainable livelihoods) in Sub-Saharan Africa (SSA) as characterized by a land tenure system that is traditionally organized in a communal manner and managed by traditional authorities who act as trustees. However, recent socio-economic and political dynamics in the customary land administration set-up creates competing and overlapping rights in land which threatens the land rights of usufruct farmers Consequently, the poor access to hitherto communal land as occasioned by poorly defined land rights for either indigenes or strangers[10] leads to a sense of **relative deprivation** which fuels farmer-herder land contestations**.** Such contestations threaten indigenous **farmers investments in land** and forces them to adopt coping strategies ***(coping theory)*** for sustenance. ***See Figure 1.0 for a diagrammatic view.***

3.2 Communal Land Tenure

Communal tenure denotes recognition of the collective rights of an identifiable group to exert exclusive ownership, management and use rights over land and its allied resources including forests and pasture lands (Chimhowu and Woodhouse, 2006). The theory typifies land as held by indigenous communities due to their ancestral[11] heritage. Tenure is usually managed in accordance with the traditions, rules and customs of the land-holding group. Communal land tenure is defined by a hierarchy of different enforceable land rights, by different use groups, that can subsist simultaneously hence overlap on the same land parcel (ibid). The communal property theory identifies five different rights on land namely; right to access, manage, exclude, withdraw and alienate (Andersen, 2011). **Access** defines an individual's right to enter a definite

[10] Strangers represent all persons who are not indigenes of the community. In the context of this study, it denotes Fulani pastoralists.

[11] Ancestors are among the first people to lay claims to the land through settlement or cultivation

geographical area for non-deductive purposes including right of way and enjoyment of the natural environment. **Withdrawal** denotes the right to use and enjoy the productive resources of a land parcel including harvesting of timber, mining, among others. **Management** relates to the right to adopt processes for optimum utilization of land resources for the benefit of the land-holding group while **exclusion** rights define the power to determine who is allowed access, use and withdrawal rights on land or otherwise. **Alienation** rights denote the right of outright sale, lease or transfer of land resources.

Chimhowu and Woodhouse (2006: 349) identify 4 distinct characteristics of communal land tenure. They posit *that rights to communal property are vested in traditional authorities* typically chiefs, tribal, lineage and family heads due to their ancestral connections. Additionally, *members of the land-holding community (through lineage) can hold usufructuary rights in land*, thus, traditional authorities and usufructs have *reversionary rights* to land. They further assert that customary land tenure features *an inherent redistributive characteristic* which protects the use rights of vulnerable groups.

The communal land tenure theory proves relevant for Research Question (RQ) 1 which sets-out to examine how customary land (usufructuary and market-based) as administered by traditional authorities, who are vested with the power to allow or disallow any of the five afore mentioned rights in land, have influenced farmer-herder conflicts in the Agogo traditional area.

The existence of multiple overlapping rights which encourages resource competition among user groups is likely to create land tenure insecurity concerns. The ensuing section discusses the relationships between land tenure security and investment.

3.3 Land Tenure Security and Investment

Land tenure security is conceptualized as the certainty that an individual or group's rights to exclusive use and enjoyment of land resources is safeguarded when challenged by adverse claims (Besley,1995). Thus, enforceability of land rights is critical to the land tenure security thesis. Though land tenure security is analyzed in varied ways, this thesis considers the widely debated aspect of perceived relationships between tenure (in)security and farmland investment

decisions. In theorizing this relationship, Besley (1995) and Pagiola (1999) note that farmers that feel a higher degree of tenure security are more incentivized to invest in land through farm expansion and cultivation of longer maturity cash crops. Though this relationship between tenure security and investment is logically appealing, empirical studies on the phenomenon remains inconclusive or contradictory (Place, 2009). Goldstein and Udry (2008) in their studies show a direct relationship between tenure security and investments however, Fenske (2011) indicate little and virtually non-existent correlations between land tenure security and farmland investments. It follows therefore that the question of links between tenure security and investments is largely context specific due to the varied financial, cultural and socio-political factors that affect agricultural investment.

A major concern in the land tenure debate is whether the degree of tenure security provided by customary land tenure systems can be viewed as adequate. Much of the argument against customary land tenure is the assumption that land transactions are made in accordance with non-market-based principles hence are not formalized to ensure tenure security. Chimhowu and Woodhouse (2006:103) and Kasanga (2001) disprove this assumption and argue that customary land tenure systems support secure farmland investments because it features an inherent and efficient customary land access system that has existed for centuries. Platteau (2000) agrees and concludes that farmers in rural societies can hold secure customary land rights with long term investments even though such land rights may seem precarious to outsiders.

For the purposes of this study, two variables for measuring existing and perceived land tenure security namely; farm size and crop type as indicated by Besley (1995) and Pagiola (1999), are of prime concern. Besley (1995) conceptualizes that when tenure security is threatened, farmers are likely to reduce their land cropping area. Additionally, Pagiola (1999) notes that farmers who face tenure security threats are more likely to cultivate quick maturing crops rather than cash crops (longer maturity) due to the fear of loss of land and consequent inability to reap the benefits of their long-term investments. Not much attention is given to farm improvements as the third proxy for measuring the link between investment decisions and tenure security because, apart from land preparation, indigenous farmers in Agogo use little farm improvement (for instance irrigation, soil management) strategies. The above explained theoretical expectations are

used in analyzing RQ 3 which investigates the investment decisions farmers make in the light of tenure insecurity resulting from competing interests and overlapping land rights.

Threats to land tenure security and associated inability of farmers to exclusively enjoy or expect to enjoy proceeds of their farm investments is noted to be a major contributing factor to farmer herder conflicts (Tonah, 2002). It is associated with a growing need to protect areas under cultivation and save farmer's crop investments from destruction. These competing claims over land ownership has been linked to the theory of relative deprivation explained below.

3.4 Relative Deprivation Theory

The Relative deprivation (RD) theory as explained by Schaefer (2008) typifies an awareness of negative differentials between genuine expectations and present conditions. It may refer to a group or an individual feeling disadvantaged in comparison with a reference group hence invoking feelings of discontent, unfairness, rage and entitlement. The increasing pressures on the definite pool of land resources creates a condition of deprivation for different disadvantaged groups which could ignite conflicts attributable to the resulting scramble for resources among competing groups (Lund et al, 2006).

When land resources become scarce, as a result of competing uses and population pressures, groups that depend primarily on the resource for their livelihood are likely to show discontent and frustration by the inability to grasp a substantial share of the resource to support their livelihood. This perceived deprivation makes them distressed and prone to risking conflict with herders to protect their croplands. The relative deprivation theory is important for examining research question two (RQ 2) which investigates the perceived causes of the farmer-herder conflicts.

The conflict situation requires the adoption of coping strategies among farmers for livelihood sustainability as explained below.

3.5 Coping Strategies

When negative shocks such as destruction of crops by herders occur, returns from sale of farm produce may yield variable and insufficient incomes (Kinsey et al. 1998). Resulting, affected persons may adopt a range of coping strategies to minimize the threats to their livelihoods. Little evidence exists on how farmers cope with the risks of crop losses associated with farmer-herder conflicts. In the coping literature however, many households are noted to seek both farm and off-farm coping mechanisms. Persons may undertake permanent or temporary migration, sale of livestock and assets, off-farm wage labour, among others to cope with stresses (Thornton et al. 2007). The coping theory which was originally propounded by psychologists for cognitive appraisal has been recently used widely in understanding how different groupings including farmer households cope with climate change stresses, however, the theory is adapted for use in this study because farmer-herder conflict remains a major stressor for farmers in Agogo. The theory focuses on a person-environment relationship and comprises behavioral changes to manage distress situations; including diversification, avoidance, minimization and abandonment (Lazarus and Folkman, 1984: 141).

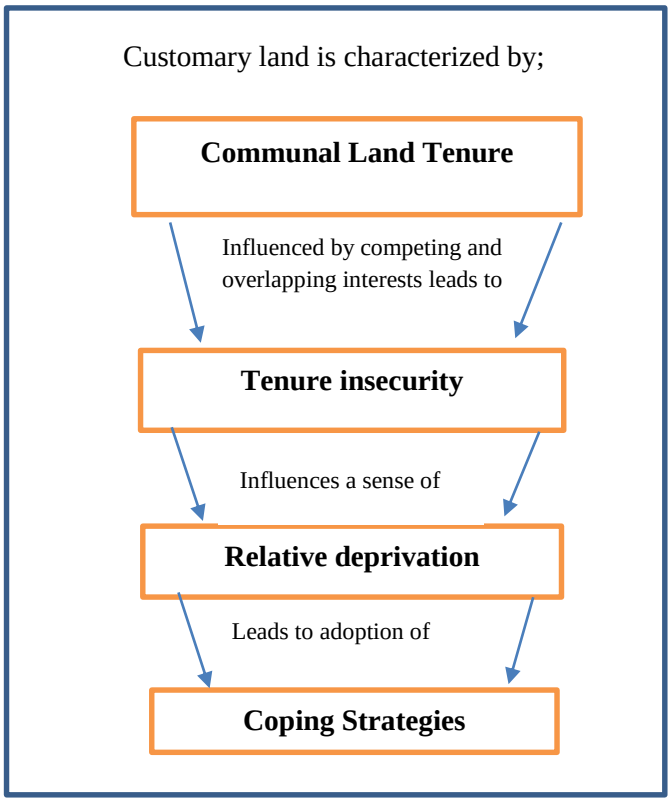
The theory relates to research question four (RQ 4) and helps in providing a basis for analyzing coping strategies farmers adopt in the face of real and perceived threats to their land tenure security.

3.6 Operationalization of Theoretical Framework

The theories are operationalized in accordance with each of the research questions. RQ 1 is operationalized by analyzing the theory of communal land tenure and considering the institutional framework within which customary land administration takes place and the inherent lapses in these institutions that create conflicting claims and competing land rights. RQ 2 which relates to the causes of farmer-herder conflict is operationalized through the theory of relative deprivation which denotes a sense of discontent by usufructs for loss or possible loss of their land assets. Here, conceptions of a probable preference of pastoralists market-based land rights over usufructs, from both perceptions of farmers and traditional authorities are considered. Additionally, RQ 3 is operationalized by considering the linkages between threats to land tenure security and farmer's investment decisions in the Agogo traditional area. This is done through

studying farmers propensity to investment (increase in cropping area or undertake long-term cash crop cultivation) in the face of threats to their tenure security. Finally, RQ 4 is operationalized through the coping theory to show the strategies that farmers adopt to cope with threats to their tenure security and farmland investments.

Figure 1: Diagrammatic View of Theoretical Framework



Source: Author's Construction, 2018

Chapter Four: Methodology

4.1 Introduction

This chapter presents the methodological aspects of the thesis by first presenting the philosophical underpinnings, research design and methods, sampling and data collection procedures as well as data presentation and analysis processes. It concludes with research validity, researcher's positionality and the limitations of the study.

4.2 Research Design

This study is explanatory in nature (Bryman, 2012) as it seeks to examine how pastoralist's and farmer's competing land rights under customary law have affected farmer-herder conflicts and the investment decisions farmers make in the wake of the conflict. This approach is in line with Suanders et al's (2009) defintition of explanatory research design as a mechanism for determining how causal relationships explain a situation. Furthermore, the study primarily adopts the deductive research logical model where hypothetical expectations informed by theory are tested based on data collected (Creswell, 2013). It further adopts the inductive reseach logical model to identify new and emerging themes that cannot be explained by the theoretical framework. The research also adopts a case study design because it seeks to present a detailed contextual analysis of a social phenomenon and its causal relationships (Creswell, 2013: 90; Yin, 2014). In this specific case, it analyses in-depth information relevant to Agogo and focused on the implication of farmer-herder conflicts for farmer's investment decisions.

4.3 Ontological and Epistemological Standpoint

The research investigates what exists as facts (ontology) as well as people's conception of a phenomenon (epistemology). Thus the thesis is situated within the *critical realism* research approach. The critical realism approach is suitable for qualitative studies as this because it unveils causality and establishes a connection between theories and social processes (Creswell, 2013).

4.4 Site Sampling and Description

The Agogo traditional area was purposively selected (Flyvbjerg, 2006:229-230) as the case study due to the widespread and long-lasting nature of farmer-herder conflicts in the area. The study

adopts an integrated purposive and convenience sampling procedure that helped in the selection of two (2) agriculture communities in Agogo out of a total of fifteen (15) where the activities of agro-pastoralists are rampant. The communities identified are Krowhereso and Agogo Ahenbronom. These two communities were chosen because farmers experience similar concerns regarding threats to their land tenure hence data gathered can easily be triangulated and validated for consistency.

4.4.1 Case Study Community (Agogo Traditional Area)

The Agogo traditional area is the capital of the Asante Akim North Municipality in Ghana. It is located along the eastern corridor of the Ashanti region and covers a geographical landscape of 1,160 sq. km ***(See Figure 2).*** The area is dominated by the Akan ethnic group and the 2010 population census by the Ghana statistical service estimated the population of Agogo as 68,186 (GSS, 2010). The major economic activity in the area is smallholder agriculture which employs 72.7% of the entire population (ibid). The area's undulating gentle slopes, wet-semi equatorial climate characterized by bi-modal rainfall (major and minor rainy seasons) and extensive grassland especially in the forest transition zones is conducive for supporting crop and livestock farming.

Figure 2: Map of Agogo Traditional Area

Source: Ghana Statistical Service, 2010

4.5 Data Collection Methods

The research uses both primary and secondary data sources. Secondary data was required for literature review and to direct the theoretical and conceptual aspects of the study. A mixed qualitative method which included key informant interviews, individual semi-structured interviews and focus group discussions (FGD) was used as primary data gathering tools to reveal individual's construction of their realities with regards to the phenomenon (Creswell, 2013; Moses and Knutsen, 2012). The use of different data qualitative collection methods helped to unveil a deeper understanding of the phenomenon under study and further served as methodological triangulation tools to corroborate the study findings.

A reconnaissance study visit to the site to identify gatekeepers and key informants (Bryman, 2012) was conducted on February 5th, 2018. This process resulted in meetings with members of the Agogo traditional council, religious leaders, family heads, farmer cooperative leaders and the police. Due to the sensitivity of the problem and ongoing pastoralist flushing-out (militarization) operations at the time of data collection, the district commissioner of police for security reasons, paramount chief for political reasons and clergy for reasons of upholding their oaths of secrecy declined to comment on the phenomenon.

Data was collected over a 2-week period (6th- 18th inclusive) in February 2017. ***(see Appendix D for Interview and FGD guide)***

4.5.1 Respondent Sampling and Interviews

A total of 36 farmers were sampled for the individual semi-structured interviews, 27 farmers for FGD's and 8 persons for key informant interviews. The distribution of respondents is shown in ***table 3*** below;

Table 3: Distribution of Respondents

Number of interviewees / Type of interview	Agogo Ahenbrono	Krowhereso	Outside Case Study Area
Individual Interviews	18	18	0
Focus Group Discussions	11	16	0
Key informant Interviews	3	1	4

Source: Author's Construction, Field Data (2018)

(See Appendix A for profile of Interviewed Farmers)

(a) Individual Semi-structured Interviews

With the help of community leaders, the purposive sampling technique was used to generate a list of households engaged in farming in each of the two case study communities. The list revealed a total of 140 farmer households in the Agogo Ahenbronom community and 107 farmer households in the Krowhereso community. In sampling eighteen (18) households in each community for the individual interviews (one person per household), a simple mathematical formula denoted by total number of households in community divided by number of interviews

needed, rounded up to the nearest whole number was used to select the "*nth"* household to be invited for interview. The sample size selection is informed by Bowen (2008) recommendation that in qualitative methods research for investigating a social phenomenon, a flexible sample size range needs to be chosen and a finite number only adopted after the researcher's data collection has reached saturation point.

(b) Focus Group Discussions

A total of 4 focus group discussions of 6-8 participants with two (2) per research community (1 convenient and 1 purposive) were conducted in line with Mikkelsen (2005) and Bryman (2012) recommendations, towards avoiding data analysis complications. The FGD's sought to strengthen data gathered from the individual interviews. In doing so, the researcher permitted the deliberations to flow in an iterative manner while moderating in a way that prevents participants from totally veering off the topic of discussion.

Each of the first set of FGD's per community were *conveniently sampled* by asking to interact with persons passing time leisurely. These FGD's were used for data triangulation because they took place in environments where people were likely to speak freely. The conveniently sampled FGD at Krowhereso involved 8 male farmers while the one at Agogo Ahenbrono involved 3 men and 2 women.

A second set of FGD's which was made up of *purposively sampled* individuals who were members of cooperatives, persons whose farms had been destroyed and leaders of farmer groups was conducted in each community. To balance the male dominance of the conveniently sampled FGD in Krowhereso, the purposively sampled FGD in this community included 5 females and 3 males. However, in Agogo Ahenbrono, the purposively sampled FGD comprised 4 men and 2 women.

(c) Key Informant Interviews

In qualitative data collection it is imperative that several interviews are used to seek multiple responses and spot contradictorary claims on the causes of farmer-herder conflict as well as the multiplicity of investment decisions and coping strategies farmers adopt as a result of the threat of conflict. Thus, eight (8) key informant interviews with community leaders, researchers and traditional authorities were conducted. The snowballing sampling technique, adapted with further

probing strategies to remove inherent biases of being referred to like-minded people, (Bryman, 2012) was used in selecting key informants.

To this extent, the researcher interviewed two (2) District Assembly members[12] (one for each research community), one (1) unit committee[13] member of the Agogo District Assembly, one (1) linguist[14], one (1) family head, one (1) elder of the Agogo paramountcy, one (1) sub-chief of the Agogo paramountcy and Professor Stephen Tonah (Lecturer at the University of Ghana who has published widely on farmer-herder conflicts).

4.5.2 Gender Patterns in Sample Selection

Overall, it was difficult to attain an equal ratio of men to women interviewees and FGD participants. This is because women were mostly unavailable to comment due to their engagement in household chores upon returning from their farms and their exclusion due to traditional patriarchal restrictions on women assuming the responsibilities of the household head (including receiving guests) while the husband is still alive. In a few instances however, the husbands encouraged their wives to join the interview session and corroborate or give further details on the phenomenon.

For the individual interviews, a purposive sampling approach was used in ensuring at least 25% women interviewees (Scheyvens and Leslie, 2000). Cumulatively, twelve (12) women were engaged in the thirty-six (36) individual interviews while nine (9) women were engaged in the FGD's made up of a total of twenty-seven (27) participants. Women's views therefore comprised a third of data collected and this can be deemed adequate since the research has no highly weighted gender dimensions.

4.6 Data Presentation and Analysis

The research adopts a content analysis approach to data analysis by organizing themes within the data collected to evaluate the theoretical framework deductively while inductively finding new and emerging theories from the data patterns (Creswell, 2013). Data was analyzed using NVIVO qualitative data analysis tool through coding to show patterns of emerging and recurrent themes related to theory (Creswell, 2013). Specifically, descriptive coding was used in the first cycle of

[12] An assembly member refers to the politically elected leader of an electoral area of the District.
[13] A unit committee member is an elected or appointed executive member of the district assembly
[14] An elder in the traditional hierarchy of Agogo, who interprets the paramount chief's messages to community members

coding and the pattern coding technique used in the second cycle of coding (Saldaña, 2009). The pattern coding sought to identify similarities, frequencies, differences, categorization and causation between the descriptive codes.

4.7 Ethical Considerations and Positionality

When conducting sensitive research related to conflicts, it is important for the researcher to thoroughly explain the reasons for the research and seek the consent of respondents. Thus, consent forms in accordance with Lund University guidelines (including confidentiality and anonymity of data) were prepared and explained by the researcher before signing by respondents. Respondents were given the option to willingly participate in the research and withdraw at any time while questions were worded in a culturally sensitive manner to reduce anxiety. Respondents also did not include minors (under 18 years) and the researcher was careful to eliminate power imbalances by correcting respondent's notions of him as a government official. Key informants consented to the use of their names while the remaining respondents feared being targeted by the pastoralists and declined to have their names published. Hence, pseudonyms are used. ***(See appendices C and E)***

Regarding positionality, the researcher was reflexive of personal biases (Bryman, 2012) because he is Ghanaian and likely to sympathize with his fellow compatriots against purported non-Ghanaians (Fulani pastoralists). To remove personal biases the researcher reflected constantly on positionality and adopted a neutral stance in order to prevent his thoughts from skewing the research direction and findings. Researcher positionality bias was further reduced by encouraging open discussions that may not be in line with the researcher's personal, religious, ethnic or political values.

4.8 Research Validity

It is difficult for the results of the research to be generalized to other areas because it is limited in geographical scope and context specific. However, the aim of the research is not to present results that can be generalized to the general population or other communities but to elucidate individual perceptions that are unique and important in shaping the discourse on tenure security and farmer-herder conflicts. Thus, the selected sample size and data collected can only be indicative of the broader picture of the phenomenon and can help direct further studies.

Regarding internal validity and consistency of data, the researcher corroborates information by using varied data collection techniques and checking consistency or divergence of data with previous research and theory.

4.9 Study Limitations

The research is limited primarily by methodological constraints. Mikkelsen (2005:193) opined that the purposive sampling technique is suitable for selecting individuals who may possess in-depth knowledge on the phenomenon under study however, this approach may increase possibility of researcher falsification by simply looking for and validating existing theories. To circumvent this, the researcher adopted an iterative data collection and questioning process to collect extensive, detailed, and rich data (Flyvbjerg, 2006:234). By doing so, data collected is likely to reveal new trends and not simply confirm the theoretical aspects of the thesis.

Additionally, oral reports may suffer problems of miscommunication and insufficient recollection (Yin, 2014). The researcher circumvents this by using multiple data sources (primary, secondary) and collection techniques as well as iterative questioning where previously raised questions are rephrased in the interviews and focus group discussions towards identifying contradictions.

Finally, even though the research does not seek to take sides in the farmer-herder conflict, it is largely one-sided because it aims to reveal indigenous farmer's conceptions. Resulting, pastoralists are not interviewed and their opinions are not represented.

Chapter Five: Data Analysis

5.1 Introduction

This section is divided into four parts in an attempt at answering the four (4) research questions in a chronological manner for clarity purposes. The first part analyses RQ 1 by highlighting customary land administration in Agogo, processes of land acquisition by pastoralists and farmer's perceptions on pastoralist's land rights in the Agogo traditional area. Within the theoretical framework this analysis relates to communal land tenure. Part two answers RQ 2 by synthetizing conceptions on the causes of the farmer-herder conflict in Agogo and looking for linkages to feelings of relative deprivation by farmers to prove or disprove theoretical expectations. Additionally, part three focuses on RQ3 and investigates the tenure insecurity and investment relationship in Agogo by using farm size and crop type cultivated as proxies. Finally, part 4 explores the coping strategies that farmers have adopted to minimize threats to their livelihoods posed by tenure insecurity concerns.

(5.2)- Customary Land Rights and Administration in Agogo

"The land is ours to do with as we deem right for the benefit of our people"
(Key informant interview-Kontihene[15],2018)

5.2.1 Customary Land Administration in Agogo

Most lands in Agogo are managed under communal property arrangements where custodians of the Agogo stool (chief and council of elders) act as fiduciaries who hold the land in trust for the community. The Kontihene of Agogo confirmed that about 70% of the total land area of the Agogo traditional area is directly managed by the chiefs while the remaining 30% is held by usufruct families and government. The Agogo stool (paramountcy) thus holds claim to the allodial title which denotes the highest right in land from which all other rights are derived (da Rocha and Lodoh, 1999). Being the occupant of the Agogo stool, it was generally agreed in all FGD's that the final power to transfer land or otherwise rested solely with the paramount chief *(Omanhene)* with advice from his council of elders[16]. This authority over land exercised by the

[15] Kontihene is the second in command to the paramount chief of the Agogo traditional area.
[16] Council of elders and the Agogo traditional council refer to the same group and are used interchangeably in this text depending on context.

paramount chief is exerted at the local level by community chiefs *(Odikro)* who control smaller land parcels for and on behalf of the paramountcy. The community chiefs however only have the power to grant small land parcels for usufruct cultivation while all land demands by strangers need to be handled by the paramount chief. An elder of the Agogo traditional council Opanyin Amoako clearly acknowledged the land ownership rights of the Agogo paramount chief by remarking that "*He is the paramount chief and he can do with the land as he pleases" (Key informant interview 3, 2018).*

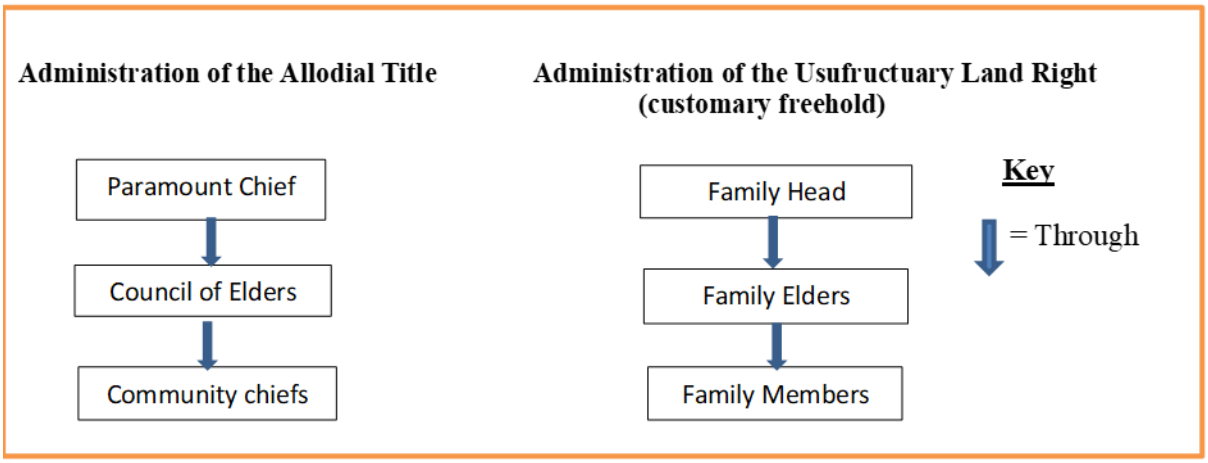
Secondary to the allodial title held by the paramountcy are the usufructuary land rights (customary freehold interest) held by usufruct families. These lands are held in trust by the family head who usually holds rich knowledge of the boundaries of the lands and acts in consultation with the family council to allocate lands upon request to members of the family. It was revealed that despite the inferiority of the usufructuary land rights to the allodial title, the paramountcy could not exert any power to transfer family lands in the case of Agogo unless such land is meant to be used for public purposes to benefit the entire community. Even so, the paramountcy was required to consult the family head and table a request for the use of such land for the public purpose identified. Resulting, much of the land ownership by the indigenous farmers in Agogo was through family membership and inheritance of family land. While affirming this notion, Osei Kwame a 39-year-old farmer in Krowhereso remarked;

> *"I inherited my father's farm land of about 30 acres when he died. I have not heard of an indigene here in Agogo who has bought land. If you ask your family head or community chief (Odikro) for land, he will give you after verifying your lineage, so that you can also farm and feed your family" (Individual interview-Agogo Ahenbrono, 2018).*

Thus, land access by usufructs is non-market based (usually through families) and they possess an inherent right to access lands held by the paramountcy, yet the paramountcy reserves the discretion to allow such usufruct land use or otherwise. Both chiefs (who act as trustees of the allodial title) and usufructs (who hold usufructuary rights) can exert access, management, exclusion, withdrawal and alienation rights in accordance with Chimhowu and Woodhouse (2006) and Andersen's (2011) theory of communal land rights. Thus, the major institutions in

customary land administration in Agogo include the paramount chief, traditional council, community chiefs and family heads. ***(See Figure 3)***

Figure 3: Hierarchy of Institutions in Customary Land Administration in Agogo



Source: Author's Construction (Fieldwork,2018)

Drawing from the words of a 76-year-old family head in Agogo Ahenbrono, Opanyin Kweku Agyeman, who emphatically stated that *"The land belongs to us. Our forefathers gave it to us and it has been held in the family for generations" (Key informant interview 6, 2018),* it is easy to deduce that the nature of the allodial title and the usufructuary land rights in Agogo confirms the existence of what in the literature is conceptualized as communal land tenure, which typifies land as a communal asset that is owned collectively by an identifiable group with a common ancestral heritage (Chimhowu and Woodhouse, 2006).

5.2.2 Land Acquisition by Pastoralists

Pastoralists may acquire land through the Agogo paramount chief or from usufruct families. This is in accordance with Andersen's (2011) theory of communal land rights which explains that traditional authorities and usufructs may undertake discretionary grants of land (right to alienate). In the case of Agogo the Kontihene (Key informant interview 2, 2018) confirmed a grant of 190 acres of land to four (4) cattle owners for livestock grazing purposes in 2006. He explained that the decision was aimed at stimulating development by harnessing the economic benefits of cattle rearing, including a vision to establish a meat processing factory to provide employment for the youth. Against this backdrop, a market-based transaction characterised by

monetary payments was undertaken between the paramountcy and the four registered cattle owners, for grant of customary grazing leases to pastoralists. Field interviews with Opanyin Kweku Agyeman, a family head in Agogo Ahenbrono confirmed similar grant of usufruct family lands totalling 40 acres to pastoralists. Such leases were granted by the family heads without the knowledge of the community chief let alone the paramount chief. This is in line with Kuusaana and Bukari's (2015) observation that the customary grant of grazing leases to pastoralists by the paramountcy opened the flood gates for indiscriminate grants by usufructs without informing the paramountcy for record keeping purposes. Clearly, these land grants by chiefs and family heads, have created competing rights and problems with enforcement of usufruct's access to land.

An 82-year-old Elder of the Agogo paramountcy, Okyeame Amoako argued that most of these largescale land transactions by the paramountcy are shrouded in secrecy. He stated that "*Even though I am a key member of the traditional council, some of these land decisions are taken at a much higher level and I wasn't part of the group of elders and chiefs who took the decision to give our lands to the pastoralists*" *(Key informant interview 3, 2018).* Hence leasing land to pastoralists mostly occurs at the top of the allodial hierarchy.

5.2.3 Land Rights of Pastoralists and Conditionalities

Generally, key informants acknowledge the market-based rights of pastoralists to graze in the Agogo plains. The Kontihene, Unit Committee and Assembly Members all agree that the Fulani pastoralists possessed the right to occupy the areas of the Agogo plains demarcated for their use. However, the reaction among farmers is mixed. Many farmers (FGD participants and individual interviews) do not acknowledge that the Fulani pastoralists have any land rights in Agogo. A unanimous agreement reached on the perceived land rights of Fulani pastoralists in the convenience-based FGD's in Krowhereso is best captured by the statement of Mr. Kojo Owusu, a 63-year-old member of the Krowhereso farmer's cooperative. He remarked that "we *don't think the Fulani's*[17] *have any rights in land here in Agogo. We are the indigenes and we are the ones who own the land by virtue of inheritance from our forefathers*" *(Convenience FGD-Krowhereso, 2018).*

[17] There are two groups of Fulani's. Fulani cattle owners and Fulani cattle herders. Both Ghanaian and Fulani cattle owners employ the services of Fulani cattle herders to tend their cattle. The clashes are thus between the indigenous farmers and the Fulani cattle herders.

Other farmers also agree that the grant of customary land by the paramount chief cattle owners gives pastoralists the right to use the allocated lands. This view is best elucidated in the words of a 54-year-old farmer in Agogo Ahenbrono who noted that "t*he land belongs to the Fulani's, the Agogo paramount chief gave the land to them so there isn't much we can do…… The Fulani's even claim they have grazing permits signed by the chiefs" (Individual interview-Agogo Ahenbrono, 2018).* Despite the acknowledgement of a market-based land transaction between the traditional authorities and pastoralists, there exists little consensus among farmers on the boundaries of the land that was granted to the pastoralists. This exposes two inherent deficiencies of customary land management notably; dependency on indigenous knowledge of land boundaries (which may be inaccurate) and lack of exclusivity; thus, encouraging the development of overlapping and competing land rights.

Additionally, there is a huge question of the conditionalities of the market-based land rights of pastoralists. A key informant interview with Okyeame Osei, a 64-year-old linguist of the Agogo paramountcy revealed that as part of the land transaction, the cattle owners were required to keep the animals within an agreed boundary, establish ranches and provide boreholes to water the animals. However, these conditions proved unrealistic and difficult to obey because the Fulani pastoralists do not traditionally adopt sedentary livelihood strategies such as keeping cattle in ranches but rather migrate with cattle towards green areas and water sources. Elder Amoako (a member of the Agogo traditional council) confirms the unrealistic nature of these conditions and opined that, *"If they wanted to keep their cattle in ranches, they needn't bring them from the savannah areas all the way to Agogo" (Key informant interview 3, 2018).*

5.2.4 Customary Land Administration and Land Contestations: Examining the Linkages

Land acquisition by pastoralists in Agogo was largely micro-managed by the paramount chief of Agogo and members of the traditional council without informing community members. Interviews confirmed this lack of information with 95% of individual farmers acknowledging little or no knowledge of lease terms between pastoralists and chiefs. Article 271 of the Constitution of Ghana (1992) supports the nature of customary land management in Agogo and mandates the chief to maintain the authority of his paramountcy through market-based processes including negotiating land deals and collecting revenues accruing from land. This provision has

largely been misconstrued thus creating major lapses of power concentration with traditional authorities as further discussed below;

(a) Power Dynamics in Customary Land Administration

As noted earlier, the land administration system in Agogo allows chiefs and family heads to undertake various land allocations. However, field data supports the assertion of Ubink and Quan (2008) who opined that though article 36 (8) of the Constitution of Ghana (1992) recognises chiefs and family heads as land trustees, they have instead annexed such communal land, treated it as their private property and unilaterally profited from the proceeds. Over 90% of individual interviewees indicated insignificant benefits from land proceeds collected by traditional authorities from pastoralists and further affirm that the paramount chief especially, possessed ultimate discretionary power for use or allocation of the land. The observation was corroborated by Blocher (2006) who noted that such abuse by chiefs and some family heads is due to lack of written records and indeterminate boundaries of customary lands. Article 36 (8) of the Constitution of Ghana (1992) however condemns this power abuse and encourages chiefs and family heads to recognise that their roles as trustees carries a social obligation to serve their communities rather than their self-interests

Due to this sense of total ownership of land without accountability there is little community engagement especially by chiefs in customary land allocations. Interviews revealed that most farmers had limited knowledge about the land transaction, duration of lease, land boundaries and covenants for use of the land hence lacked respect for the rights of pastoralists to the land. Such lack of information among farmers on land transactions and abuse of power by chiefs and family heads as well as associated unilateral use of proceeds from land leases, influences land contestations especially between market-based (lessees) and non-market-based (usufruct) land right holders (Kuusaana and Gerber, 2015). Meanwhile, community engagement and information sharing is important for establishing legitimacy, reduce contestations and ensure accountability in land resource management especially because the chiefs and traditional authorities are required to act as fiduciaries and not exclusive owners of the land.

Though this theme of power wielded by chiefs and family heads over land is not expressly explored in the literature that shape this study, it reveals interesting concepts of power

concentration and abuse, as proposed by Goldstein and Udry (2008), that exists within customary land administration.

(5.3)- Causes of farmer-herder Conflicts

"If I reach my farm and find cattle there I would shoot and kill them. God forgive me if I don't kill some" (Individual interview- Krowhereso, 2018)

5.3.1 Introduction

Following the nature of communal land management in Agogo, this section focuses on revealing the perceptions of farmers on the structural causes, triggers and factors that limit amicable resolution of the conflict between farmers and herders.

5.3.2 Structural Causes of Farmer-Herder Conflicts

Structural causes of farmer herder conflicts relate to the factors that are not identified as the immediate triggers of the conflict but play a major underlying role.

(a) Land Scarcity and Monetization of Customary Land Rights

A major underlying factor identified was land scarcity influenced by population growth and technological changes (Flintan, 2012). An increasing demand for land invariably breeds competition between user groups who hold hostile views of each other instead of allies with shared interests, as shown for instance by Muyanga and Jayne (2014) in rural Kenya. The scarcity of land resources in Agogo is primarily influenced by population growth and demands for new cultivable lands among usufructs. Additionally, technological changes including the use of agricultural machinery to expand crop cultivation areas and harness gains from once marginal lands in the plains was identified as another major factor influencing land scarcity. These results support Flintan's (2012) opinion that land scarcity increases competition for the resource, forces farmers to move into herder grazing areas and herders to move into farmer's cropping areas; thus, making conflicts inevitable.

The population growth linkages to farmer herder conflicts also needs to be analysed from the angle of increases in the cattle population in Agogo. As expected, an increase in cattle numbers leads to overgrazing which encourages continuous movements towards the greener farmland areas. Mr Samuel Ato Arthur, a 47-year-old unit committee member of the Agogo District Assembly argues that the rise in cattle population leads to land scarcity and competition. He

mentioned that "th*e chiefs feel some of the 4 [original] cattle owners [who hold leases] have sublet portions of their land to new cattle owners and recent enumeration surveys shows the existence of over 25 different cattle groups with an approximate total of 50,000 cattle in the district" (Key informant interview 5, 2018).*

All FGD participants complained that pastoralists were favoured by the chiefs in land allocation because they paid substantial amounts for the leases as opposed to them (usufruct farmers) who pay nothing for use of land. This phenomenon is described as the monetization of customary land (Boamah 2014). Thus, usufruct families and chiefs disregard land demands and use by members of the community and rather grant these lands that are sometimes under cultivation by usufructs, to herders for grazing purposes in exchange for monetary payments. Yaw Asante, a 58-year-old executive of the Krowhereso farmers' cooperative agrees and alleges that;

> *"because cattle owners are rich, the chiefs are easily influenced to give them our lands in exchange for money as opposed to us who usually pay nothing or only as much as one bottle of schnapps as a token for use of the land" (Individual interview, 2018).*

Farmers expressed concern that land owners (chiefs and family heads), due to their preference for pastoralists give excuses of land unavailability when usufructs request land for farming purposes or allow pastoralists to forcibly remove farmers by granting land areas cultivated by usufruct farmers to pastoralists without due notice or consultations. This preference for land users that provide higher renumeration and consequent disregard of usufruct's land rights may promote feelings of relative deprivation and associated competition for land (Schaefer, 2008). The apparent preference for pastoralists by land owner invokes feelings of discontent, unfairness, rage and entitlement among farmers and serves as an undercurrent that could trigger conflict with pastoralists upon the slightest provocation.

(b) Climate Change

Additionally, climate change has been identified as a major catalyst of farmer-herder conflicts. Migration by herders to greener areas is viewed by (Moritz, 2010) as a natural occurrence to escape harsh climatic realities. Thus, migration may be viewed as a temporal or permanent livelihood sustenance activity depending on the severity of climate change effects. The case of

the Fulani pastoralists in Agogo is a perfect illustration of migration from the dry Sahel regions of West Africa and the Northern Savannah Ecological Zone of Ghana to the forest transition zones and residual plains of Agogo, due to climate change pushes. Climate change effects further lead to encroachments and farm destructions and this was asserted by Maame Mansah a 43-year-old female farmer in Agogo Ahenbrono who argued that pastoralist's activities are rampant in the dry season. She intimated that *"when the dry season comes and the grasses in the plains start drying, then they move more towards the greener areas where our farms are located and that is when they go on the wildest rampage*" *(Individual interview- Agogo Ahenbrono, 2018).* This is in line with literature expectations of climate change as a precipitator of farmer-herder conflicts (Moritz, 2010).

(c) Ethnicity, Prejudice and Stereotypes

It is also important to consider entrenched prejudices and stereotypes that farmers have about the Fulani that may fuel the conflicts. All interviewees were convinced that the Fulani's were the perpetrators of most social vices in the remote and farmland areas of Agogo. This perception is worrisome as it generalizes the Fulani pastoralists as criminals who should be blamed without evidence for all criminal occurrences in the farmland areas of Agogo (Bukari, and Schareika, 2015).

It is important to also consider the role of ethnicity in the contest for land between farmers and herders and ultimately recognition of land rights of pastoralists. The Fulani's are generally regarded as migrant groups from the Sahel savannah areas and their citizenship in Ghana is doubted because they do not have any established ethnic settlement. In the interviews with indigenous farmers, the ethnic undercurrents of the conflict was clearly asserted. Yaw Asante, a 58-year-old executive of the Krowhereso farmers' cooperative iterated that "*The land belongs to us and it's the only intergenerational commodity that we will leave for our children so we will not allow foreigners to claim it……we will forcibly push them all the way back to their countries" (Individual interview, 2018).* This sense of action to protect common resources by persons with similar identity, cultural heritage and ancestral roots is consistent with Gurr's (1993) conception that persons identified by a social grouping are likely to mobilize to protect a common interest.

5.3.3 Triggers of farmer-herder Conflict

Though the underlying causes of farmer-herder conflicts are itemised in the discussion of structural causes, certain occurrences that have been identified to flare up sentiments and trigger the conflicts are discussed below;

(a) Farm Destruction

Opoku (2014) ranks land encroachment and smallholder farm destruction by cattle as the most fundamental trigger of conflict in the forest transition zone of Ghana. Similar results were found in Agogo however interviewees opined that farm destruction by pastoralists was done deliberately as an expression of power over the land. Interviewees reported that Fulani herdsmen leave cattle unattended or deliberately move them to feed on farmer's crops. This deliberate farm encroachment is influenced by a presumption of ownership of land areas cultivated by farmers. Abena Asiedu, a 52-year-old farmer in Krowhereso revealed that "*Fulani's neither respect our land rights nor boundaries. They view our crops as feed for their cattle…….the Fulani boast that the chief has given them documents that show they can graze anywhere and can destroy farms in the process" (Individual interview-Krowhereso, 2018).*

While acknowledging that pastoralists may have very generous yet verifiable market-based rights to lands in Agogo, Professor Steve Tonah (Key informant interview 7, 2018) explains that the lease agreement gives pastoralists the right to graze animals within a certain perimeter and not to graze with impunity and destroy farmlands. Farmers mentioned the forced need to retaliate to safeguard their investments especially when they had contracted agricultural loans from financial institutions. Evidence of deliberate farm destruction is given by Kweku Ansah, a 38-year-old farmer who doubles as a teacher in Agogo Ahenbrono when he remarked;

> "*I took a loan of 20,000 Ghana Cedis to farm and when I harvested my watermelons, put them together in a mound and left to get a vehicle to convey it to the market, I came back to find the Fulani cattle feeding on the watermelons. They had been deliberately cut into halves by herders to make feeding easier for cattle. When I complained I was told even cattle like watermelons……How do you expect me to react to this*?" *(Individual interview-Agogo Ahenbrono, 2018)*

To compound the problem, farmers in the purposive FGD in Agogo Ahenbrono observed that much of the farm destruction takes place when the Fulani lead the cattle to feed at night and when they deliberately set fire to usufruct's farms during the dry season, in an attempt to encourage the early growth of fresh grass (FGD-Agogo Ahenbrono, 2018).

(b) Social Vices and Gendered Dimensions

Conflicts may be triggered by the social vices farmers allege pastoralists are engaged in. Abubakari and Longi (2014) in their studies of farmer-herder conflicts in Northern Ghana reported that some herders are alleged to be engaged in social vices including rape, robbery, theft and murder. A 56-year-old mother of four in Agogo Ahenbrono, Abena Antwi, remarked on the gory scene of the murder of her relative and mentioned that *"My grandfather got killed by the Fulani pastoralists; they cut off his head and his genitals" (Individual interview-Agogo Ahenbrono, 2018).*

A recurring theme among all female FGD participants and individual interviewees was the fear of being raped when they go to their farms or the plains to fetch firewood. Resulting, Forson - Asimenu (2011) and Tonah (2006) in their studies of the northern regions of Ghana, noted that much of the economic activities of women has been limited by the fear of pastoralists targeting and harming them. In Agogo, this development has left many single women opting out of farming because they do not have protection from a man while married women only visit the farm in the company of their husbands.

Animal herding among the Fulani pastoralists is considered a masculine activity hence the male herders are mostly blamed for engagement in social vices. Evidently, these perceptions of pastoralist engagement in social vices sparks conflicts due to reprisal actions by male-dominated farmer vigilante groups.

Meanwhile. Fulani women engage largely in livelihood support activities including milking cows, selling milk and processing cheese for sale.

(c) Perceived Favouritism and Distrust in Conflict Resolution Institutions and Procedures

Customary dispute resolution primarily lies with the paramount chief and community chiefs in Agogo. However, 85% of individually interviewed farmers feel that chiefs favour pastoralists during conflict resolution hence they have lost trust in the customary mechanisms for dispute resolution. The Kontihene however debunked the allegations of favouritism and intimated that it was difficult to bring cattle owners beyond the four (4) registered owners to the negotiation table. It is also difficult to know which pastoralist's cattle have caused the farm destruction in each case (Key informant interview-2, 2018).

Farmers (60%) further asserted that they resort to formal state institutions including the police and court systems but many (54% of those who resort to state institutions for dispute resolution) report perceptions of corruption and a distrust in the formal processes of dispute resolution. They feel the police and court systems have been corrupted by the rich cattle owners, some of whom were identified as politicians and prominent persons. The level of distrust in these state institutions is succinctly captured in the words of Kwesi Manu, a 46-year-old farmer in Agogo Ahebrono who remarked;

> *"Go to the police station or court? What? How much money do I have? Don't annoy me, don't annoy me at all. Go to the police station or court and find out whether they will help you. What are you talking about? The police here are so useless. When you report that your farm has been destroyed by cattle, they tell you to go and catch the cow and bring it. But how can you catch a cow? Can you take a cow to court?" (Individual interview, 2018).*

With a breakdown in trust in both customary and formal conflict resolution processes, it is unsurprising that farmers prefer resorting to direct confrontations with herders as the ultimate solution to protecting their customary land use rights and preventing crop destruction by cattle.

Further analysis revealed that the police find it difficult to identify which exact herd of cattle destroyed farmer's crops. With over 25 different cattle groupings out of which only four (4) are formally registered and a population of 50,000 cattle in the plains, Mr Kweku

Nti (Assembly member- Agogo Ahenbrono) noted that customary and statutory dispute resolution may prove difficult (Key informant Interview 1, 2018). The forgoing discussion is corroborated by Opoku (2014) who stressed in his study that the level of trust in customary and state dispute resolution processes is very low among farmers in Agogo.

5.3.4 Survival of the Fittest?

Farmers relate the incidences of deliberate crop destruction, setting of fires to farms and violent clashes, to pastoralists' attempt at intimidating them off their farmlands. The constant contention between farmers and herders relates to a sense of either group feeling relatively deprived of their legitimate rights to land as explained by the relative deprivation theory (Schaefer, 2008). This sense of deprivation invokes feelings of discontent and antagonism between farmers and herders. However, by inductive reasoning from data, the conflict situation in Agogo may also be ascribed to the theory of resource competition which typifies a competition over land resources for survival by different use groups (Haberl et al, 2014; Lund et al, 2006). In the case of Agogo, resource competition is evidenced by either group believing in depriving the other of ultimate access hence both lay legitimate claims to the land; farmers through usufructuary rights and herders through market-based rights.

This has birthed a rising movement of farmer vigilante groups whose aim is to dispel cattle herders from their communities on grounds of livelihood disruption while an equally charged movement of armed herders resist expulsion from their legitimately acquired grazing lands.

(5.4)- Effect of Land Tenure Insecurity on Farmer's Investment Decisions

"Stop farming totally and do what? That will be equal to me committing suicide. How will I survive?"(Individual interview-Krowhereso, 2018)

5.4.1 Introduction

Due to the conflict situation, there exists a verifiable case of absence of tenure security which denotes the exclusive use of land resource and ability to benefit from the economic fruits of using the land without interruption or adverse claims. Predictably, the vast majority (95%) of farmers reported an inability to have exclusive access to their farms. When asked about the investment decisions they had taken in the light of threats to their land tenure, farmers reported mixed responses that have been categorized in accordance with the two measures of investment decisions chosen for this study from literature. These include Besley's (1995) conception that decreased tenure security is directly linked to a lower propensity to invest through decreases in farm size and Pagiola's (1999) notions that farmers are likely to cultivate quick maturing crops when they face threats to their enjoying the future proceeds from longer maturity cash crop investments.

5.4.2 Farm Size as a Measure of Investment Decisions

Interviews and focused group discussions received mixed reactions to the question of farm sizes that farmers have under cultivation. The large majority (85%) of farmers reported no change in their farm sizes. While motivating this decision, Kwesi Nti, a 50-year old farmer in Agogo Ahebrono remarked *"Whether you make the farm big or small, they will still attempt to destroy it, so it is better to make it big once and for all so that even if they destroy parts of the farm, you will still be able to get quite a healthy return." (Individual interview-Agogo Ahenbrono, 2018).* Further analysis revealed that farmers invest little financial capital and high sweat equity (cultivate farms themselves or receive help from family members). Thus, their most important proxy for measuring profits is the difference between returns from farms and financial capital invested (including cost of hiring farm machinery) without quantifying *"free"* labour costs. This thinking which largely underestimates farmer's expenditure and fuels false profit calculations may partly be the reason for no changes in cultivated farmland area, regardless of expected farm destruction by pastoralists.

Additionally, farmers acknowledge they continue farming because their livelihoods depended primarily on it. Adwoa Ofori, a 53-year-old female farmer in Krowhereso remarked *"Stop farming totally and do what? That will be equal to me committing suicide. How will I survive? I will rather go to the farm and risk being killed than starving to death because hunger is painful" (Individual Interview-Krowhereso,2018).* Furthermore, farmers acknowledged farming as the only economic activity they were skilled in hence learning new trades will be difficult.

This finding was interesting as it was inconsistent with Besley's (1995) theoretical expectations of decrease in farm sizes when there are verified and perceived threats to land tenure security. By deduction, most farmers (85%) in Agogo are in no way willing to allow pastoralists to force them off their land nor do they feel the current threat to their tenure security is great enough to push them totally away from their primary livelihood activity (farming). They showed readiness to risk protecting their occupations because their livelihoods depend primarily on it. Resulting, the expectations of a direct relationships between land tenure security and investment is challenged in Agogo when (a) farmers feel their ultimate survival depends on the land, due to a lack of viable livelihood diversification options that offer commensurate returns as farming and (b) when they conceive the financial capital they invest as little and have false profit notions.

No respondent acknowledged increases in farm size beyond the boundaries of their farms due to the scarcity of productive land and the bureaucracies associated with usufruct claim to land held by the stool, for farming purposes. Adwoa Ofori, the 53-year-old female farmer in Krowhereso who vehemently opposed the idea of stopping farming, acknowledged a reduction in her farm size due to the use of a portion as an informal cattle route by pastoralists. She intimated that the particular section of the farm was always destroyed in the peak dry season. Upoon noticing such pattern, she reduced the cultivating area of her farm from 20 to 16 acres. The reduction of 4 acres of cultivable land is still sizeable given the average farm size of 4.8 acres ***(See Appendix A).*** This finding is consistent with theoretical expectations of reductions in cropping area due to land tenure security threats by (Besley, 1995) however, the result presents an isolated case and is insignificant in comparison with conceptions gathered from the total population of interviewees and focus group participants.

5.4.3 Changes in Cropping Patterns?

Most farmers report cultivation of 3 to 5 different types of crops on their farms in accordance with mixed or seasonal (dry or rainy season) cropping techniques. They intimated that the types of crops cultivated have not changed much because their lands are suitable for cultivating those crops with very minimal fertilizer application. Thus 92% of famers report continuous cultivation of plantain as their primary food crop. A small minority (8%) have moved away from cultivating plantain. When asked the reason for such change, they explained that plantain cropping takes up to 12 months to mature hence the crop risks being destroyed during the dry season when the farm destruction actions of cattle are highest. They revealed a move to cultivating quick maturing crops including vegetables and cereals although the returns are much lower than returns from cultivating plantain.

This observation is difficult to relate to expectations of changes from longer maturity crops (cash crops) to quick maturing crops due to threats of tenure. This is because farmers are already traditionally engaged in planting crops that take only up to a year to maturity. They therefore keep the historical cultivation patterns passed on from their parents. The preference for plantain farming in Agogo is explained by historical losses due to disease infections and bush fires in cocoa cultivation in the 1980's (Kuusaana and Bukari, 2015). It is further influenced by the high cost of maintaining longer maturity cash crops, including weed and disease control as compared with cultivating plantain which farmers assert is easier to cultivate.

Again, this finding contradicts theoretical expectations by Pagiola (1999) because the farmer-herder conflict has not occasioned much changes to farmer's cropping patterns despite increasing threats to land tenure security posed by the farmer-herder conflict.

5.4.4 Land Tenure (In)security and Investment Decisions in Agogo: Summary

The first conspicuous finding is that threats to land tenure rights has little effect on the farm sizes cultivated by farmers. This finding appears counterintuitive and paradoxical as it contrasts sharply with theoretical conceptions by Besley (1995) who hypothesized a threat to tenure security will invariably lead to reduced farm sizes. The major reason for this deviation is that farmers feel they have no other sustainable economic activity for supporting their livelihood than farming. Thus, they prefer to risk farming in expectation of partial crop destruction by herders while harvesting the remaining for sale.

Pagiola's (1999) theoretical expectations of the tenure security and investment relationship measured by crop type cultivated is however mixed. Some farmers (8%) allude to changing their crop types to quick maturing crops while most farmers (92%) keep cultivating the same crops in the face of tenure security threats. While investigating the reason for this result, farmers mentioned that plantain cropping is a historical skill learnt from their parents thus they found it much easier to cultivate. They further asserted that plantain farming required low financial investment and offered quicker returns than longer maturity cash crops.

Farmers investment decisions as measured by farm size and crop types under cultivation are therefore largely unchanged in the face of increasing threat to land tenure security in the Agogo traditional area.

(5.5)- Farmer's Coping Strategies

> *"We are too old to learn new skills. Farming is what we are good at but we have decided to educate our children so that they don't have to farm and risk being killed by pastoralists like we do daily". (Individual interview-Krowhereso, 2018)*

5.5.1 Categorization of Coping Strategies

It is imperative to understand the kinds of coping strategies adopted by farmers as a buffer against threats to their survival. This is especially important as most farmers acknowledge partial annual loss of crops due to the activities of pastoralists hence the need to understand how they support their livelihoods in the face of losses. Coping strategies by farmers have been categorized as off-farm, on-farm adaptation and avoidance, minimization and abandonment strategies.

5.5.2 Off-farm Partial Livelihood Diversification

Even though farmer's investment decisions in land have not changed much to accommodate the threat to tenure security, they acknowledge the probability of partial or total crop losses hence many adopt coping strategies to supplement incomes from farming. These strategies can best be described as partial diversification which relates to intermittent resort to other income earning activities to add to farm revenues, without the total abandonment of farming. Farmers acknowledged that they engage more with secondary jobs during the dry season when the activities of pastoralists are high. Common jobs include engagement in off-farm casual labour (usually in cities), petty trading, management of micro-enterprises, carpentry, teaching, chainsaw operating, charcoal burning, commercial vehicle driving and other off-farm economic activities.

Kweku Aboagye, a 62-year-old farmer from Krowhereso remarked that *"Some people have their husbands or children open small retail shops for them to sell. But what happens if you don't have a child or husband, who will do this for you?" (Individual interview-Krowhereso, 2018).*

Most farmers (62%) migrate to take casual labour jobs (unskilled labour job for short durations) however educated and skilled farmers (14%) switch to their secondary occupations. This is in line with results found by Traerup and Mertz (2011) in Tanzania while investigating climate vulnerabilities and associated coping strategies thus validating the hypothesis that when farmers face threats to their cultivation, they adopt partial or permanent diversification activities. In the case of Agogo, none of the farmers engaged in permanent livelihood diversification activities. When asked why they haven't considered the option of total livelihood diversification, Adwoa Kyei a 50-year-old female farmer in Agogo Ahenbrono remarked *"We are too old to learn new skills. Farming is what we are good at but we have decided to educate our children well so that they don't have to farm and risk being killed by pastoralists like we do daily" (Individual interview-Krowhereso, 2018).*

5.5.3 On-farm Adaptation

A few farmers (8%) use crop diversification as a means of coping. Crop diversification is used as a preventive strategy that relates to farmers cultivating different crop types and altering planting dates. Farmers engage in mixed cropping of plantain with leguminous crops including beans and cowpea while others cultivate only vegetables during the dry season to support incomes. Eyram Asante, a 32-year-old female farmer in Krowhereso supports the crop diversification thesis and remarked that;

> *"during the dry season, we normally diversify into garden eggs, okro, tomatoes and water melons because they have shorter maturity periods….and when the dry season is prolonged unexpectedly, we prepare our nurseries and wait until the first few rains for the pastoralists to move further towards the plains before we start cropping" (individual interview-Krowhereso, 2018).*

Additionally, the decision of farmers to continue cultivation of large farm areas with expected destruction of parts by pastoralists and anticipation of healthy returns after such destruction (as explained in section 5.4.2) may be viewed as an on-farm coping strategy. This is because it is used as a means to ensure farmers livelihoods are not totally endangered by crop losses resulting from cultivating smaller land areas. However, this coping strategy may not be always reliable as the farm destruction activities of pastoralists are unpredictable and may affect one farmer more in a particular cropping period than another.

Other strategies adopted by farmers (10%) in a direct attempt to ward off pastoralists from encroaching on their farms include living in farm houses to show their presence on farms and investing in wire mesh fencing to reduce the losses from farm destruction by cattle.

The nature of farmer's crop diversification strategies against threats to tenure security is in consonance with results found by Saumik (2015) in his investigation of crop diversification strategies by smallholders during the political conflict in the southern provinces of Cote d'Ivoire between 2002 and 2008. Saumik (2015) found that farmers resorted to cultivating different crop types and altered their planting dates depending on severity of the conflict.

5.5.4 Avoidance, Minimization and Abandonment

Folkman and Lazarus (1984) theorized that individuals are likely to adopt avoidance, minimization or abandonment strategies when they conceive threats to their livelihoods as high. Many farmers acknowledge avoidance by not cropping during the peak dry to avoid contacts and altercations with herders. Plantain farmers especially prefer to start cropping towards the end of the dry season or the beginning of the light rainy season while expecting harvests in the next dry season when plants are mature and damages by cattle are minimal, as opposed to cropping in the major rainy season which leaves crops younger and easily destructible in the dry season. Minimization actions also take the form of cropping only certain areas of their land that cattle scarcely encroach on.

Though none of the respondents admitted to plans of total abandonment of farming, they gave many examples of abandonment by previous farmers in favour of petty trading and migration to cities for casual work. The unit committee member of the Agogo District Assembly (Key informant interview 5, 2018) explained the severity of the abandonment problem by acknowledging that in another community (Pataman), the population of 500 has reduced to less than 200 because many people have abandoned farming and associated constant crop destruction by cattle and migrated to the cities.

These avoidance, minimization and abandonment decisions may not be entirely attributable to the farmer herder conflicts because subsistence farming as an economic activity is increasingly becoming unattractive for most Ghanaians (MOFA, 2015). However, the decisions to quit farming, given a verifiable option is much quicker when threats to land tenure are imminent. In support, the Assembly member for Krowhereso electoral area, Mr. Samuel Osei remarked *"Even*

as an assembly man, I am no longer interested in farming. I rather concentrate on my teaching and less on my farm because I incurred a huge debt that took me 5 years to repay after 30 acres of my plantain farm was destroyed by cattle" (Key Informant Interview 4, 2018)

5.5.5 Gender Dimensions of Coping

Literature suggests that women are traditionally engaged in growing the less commercial crops in rural agricultural communities (See Doss, 2002). This was confirmed by interviews that most women aside helping their husbands on the farm, were largely engaged in cultivating less commercial food crops primarily for subsistence. Coping strategies among women were therefore predominantly acts of avoidance evidenced by the decision to stop cropping during the dry season. These acts of avoidance were supported by male farmers who agreed to preventing women from visiting the farms regularly during the peak dry season for fear of encounters with herders.

Additionally, abandonment decisions have a gender dimension. The FGD's revealed that single women were more likely to abandon farming because they are scared of being raped on their farms. Not having a husband or male member of the family with whom women can farm increases their likelihood of abandoning farming and diversifying into other economic activities.

5.5.6 Coping Strategies: Commentary

Summarily, results are mixed on farmer's coping strategies. While some have used abandonment, avoidance and minimization strategies, others have used temporal diversification (on and off-farm) strategies in dealing with threats to land tenure. The reason for this is not investigated in this thesis however, it may be attributable to different levels of threat to tenure security experienced by farmers. This section however sought to give a snapshot of farmers engagements or otherwise in coping with the threats to land tenure hence the reasons for such varied coping reactions needs to be confirmed by proper mapping of farmlands, which may be the subject matter of future studies.

Chapter 6: Conclusion

6.1 Summary of Findings and Conclusions

The dissertation answers four research questions that fit into the overall aim of unveiling the implications of the farmer-herder conflicts on indigenous farmer's investment decisions. Findings for Research Question 1 which investigates the nature of customary land-holdings and pastoralists land rights in Agogo. showed that the land tenure system in Agogo is managed in accordance with the theory of communal land tenure where traditional authorities including chiefs and usufruct family heads hold land as trustees on behalf of their communities. Further analysis however revealed that chief's and family heads abuse their power over land while acting as trustees and such abuse and lack of engagement with community members on details of land transfers is the primary lapse in customary land administration that fuels competing land rights and contestations between different user groups (see Goldstein and Udry, 2008).

In consonance with the relative deprivation theory (RQ 2) farmers identified factors that may cause resource competition and make them feel relatively deprived of land access. These include structural factors of climate change, ethnicity, increases in cattle population, rural population growth and farm expansions as well as monetization of customary land and associated preference for pastoralists by land owners. Thus, there exists negative differentials between farmer's expectations of exclusive land use and their present conditions of land encroachment and crop destruction by cattle. The resulting feelings of discontent sparks conflicts between farmers and herders. Additionally, deliberate farm destruction, was identified as the major trigger of conflict related to resource competition and feelings of deprivation. Other conflict triggers that are not explained by the theory of relative deprivation but have been identified in literature (Moritz, 2010; Flintan, 2012) included allegations of pastoralist engagement in social vices, as well as distrust in customary and state conflict resolution institutions.

Even though the conflict situation in Agogo poses threats to land tenure security, findings from the analysis of RQ 3 proved largely contrary to theoretical expectations of reduction in farm sizes (Besley, 1995) or changes from longer maturity cash crops to quick maturing crops (Pagiola, 1999). Though these findings were surprising, the decision of farmers to keep cropping in the face of evident and perceived threats to their land tenure security is explained by the lack

of viable livelihood diversification options that offer commensurate returns as farming and keeping to historical cropping patterns.

From this standpoint it was necessary to investigate how farmers cope and support their livelihoods due to expected partial or total annual losses of their crops (RQ 4). Most farmers consented to engagement in partial livelihood diversification strategies including migration to cities for casual labour work. A few others however adopted the use of on-farm techniques including wire mesh fencing, largescale cultivation (in anticipation of manageable cattle destruction) and occupancy of farm houses to ward off pastoralists and cattle.

6.2 Summary of Theoretical Contributions

Though several theories are explored, the study contributes uniquely to the theoretical understanding of customary land administration systems as not being solely non-market-based but with market-based adaptations. The abuse of power by land owners especially, introduces a new dimension to the debate on how customary land markets can assure land tenure security. The consequent clashes between customary non-market-based rights and market-based rights fuelled by the process of monetization of customary lands needs to be further explored. This recent development in customary land tenure systems gives impetus for development of new theories to explain the phenomenon.

The study further corroborates findings of Fenske (2011) that the land tenure and agricultural investment relationship is largely context specific hence disproving the generalised theoretical expectations by Besley (1995) and Pagiola (1999). It adds perceptions of total livelihood dependency on farming, lack of verifiable diversification options and false profit reporting to exceptions to the application of the theory.

6.3 Policy Implications

Harnessing gains from both crop and livestock faming could bring development to the Agogo traditional area. Besides, reprisal actions by farmers against the Fulani pastoralists who are merely employed as caretakers by cattle owners will change very little. Thus, it is recommended that policies are made in a manner that will bring both farmers and herders to a conflict negotiation table to agree on grazing and farm land boundary demarcation towards reducing

competing land rights. Such policy guidelines need to further consider placing limitations on the abuse of discretion over land by chiefs while encouraging the use of equitable principles (including publicity of land deals) to ensure efficient land management for supporting livelihoods of different use groups.

6.4 Further Research

Though the study is significant for adding up to existing literature, setting the tone for further detailed research and giving new insights into the dynamics of farmer-herder conflicts, it is largely one-sided hence, further research is needed to highlight the conceptions of pastoralists in order to have a balanced perspective. Additionally, recent political attempts to push out herders (through militarization) from Agogo has been carried out in an uncoordinated manner that poses risks of further conflict in adjoining communities. Further research is needed to investigate the socio-economic implications of this military actions on herders and new host communities.

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Appendices

Appendix A- Profile of Interviewed Farmers

Table 4.0 below indicates an approximately 50-50 ratio of respondents (both individual interviewees and FGD participants) from both research communities; Agogo Ahenbrono and Krowhereso. The mean age among the respondents was 44.06, minimum age was 28 while the maximum age was 64 years. With regards to educational qualifications, the descriptive data shows that most respondents have received Junior high school education (26.9%), a considerable number have received no education (22.2%), while 19.1% have received senior high school education. An appreciable proportion representing 14.2% of respondents have also received tertiary education.

In continuance, majority of respondents (57.7%) are married while 28.5% remain single. The remaining (12.6%) however are divorced or separated. The data revealed that respondents had an average of three (3) children with very few respondents having no child. The primary occupation of respondents was farming however a few were engaged in studies and teaching as their primary occupations and farming as a secondary occupation. Nonetheless, all respondents either own or have access to land for faming with a mean land size of 4.8 acres; an indication of the extensive nature of agricultural cultivation in the case study communities.

Table 4: Descriptive Characteristics of Respondents

Community			
Agogo Ahenbrono		Krowhereso	
50%		50%	
Gender			
Male		Female	
75%		25%	
Age			
Mean	Median	Minimum	Maximum
44.06	44	28	64
Level of Education			
Level		Frequency	Percentage
No Education		14	22.20%
Primary School		11	17.40%
Junior High School		17	26.90%
Senior High School		12	19.10%
Tertiary		9	14.20%
Marital Status			
Status		Frequency	Percentage
Single		18	28.50%
Married		37	58.70%
Divorced/ Separated		8	12.60%
Number of Children			
Number		Frequency	Percentage
None		4	6.30%
1		5	7.90%
2		13	20.60%
3		17	26.90%
4		9	14.20%
5		9	14.20%
Above 5		6	9.50%
Primary Occupation			
Number		Frequency	Percentage
Farmer		56	88.80%
Teacher		5	7.90%
Student		2	3.10%
Farm Land Access/ Ownership		63	100%
Land Size			
Mean	Median	Minimum	Maximum
4.8	5	2	60

Source: Author's Construction, Field data (2018)

Appendix B- Key Definitions

Land tenure security- This relates the ability to exclusive use of one's land and right to enjoy the economic fruits thereof without any interruption or adverse claims

Usufructs- These are persons that belong to the land holding community and can be identified by lineage to be original descendants of first occupants of the land.

Farmer herder conflicts- This refers to constant contestations and violent clashes between farmers and herders over use of land resources

Herders- This refers to persons who tend cattle in a migrant manner. In Ghana, these nomads are predominantly from the Fulani ethnic extraction.

Investment decisions- In the context of this study, it relates to decisions farmers take on farm size or crop type to cultivate due to the threats to their land tenure.

Appendix C- List of Interviewees and FGD Participants

List of Respondents (Individual Interviews)

Respondent Number	Community	Date
Respondent 1	Krowhereso	February 2018
Respondent 2	Krowhereso	February 2018
Respondent 3	Krowhereso	February 2018
Respondent 4	Krowhereso	February 2018
Respondent 5	Krowhereso	February 2018
Respondent 6	Krowhereso	February 2018
Respondent 7	Krowhereso	February 2018
Respondent 8	Krowhereso	February 2018
Respondent 9	Krowhereso	February 2018
Respondent 10	Krowhereso	February 2018
Respondent 11	Krowhereso	February 2018
Respondent 12	Krowhereso	February 2018
Respondent 13	Krowhereso	February 2018
Respondent 14	Krowhereso	February 2018
Respondent 15	Krowhereso	February 2018
Respondent 16	Krowhereso	February 2018
Respondent 17	Krowhereso	February 2018
Respondent 18	Krowhereso	February 2018
Respondent 19	Agogo Ahenbrono	February 2018
Respondent 20	Agogo Ahenbrono	February 2018

Respondent 21	Agogo Ahenbrono	February 2018
Respondent 22	Agogo Ahenbrono	February 2018
Respondent 23	Agogo Ahenbrono	February 2018
Respondent 24	Agogo Ahenbrono	February 2018
Respondent 25	Agogo Ahenbrono	February 2018
Respondent 26	Agogo Ahenbrono	February 2018
Respondent 27	Agogo Ahenbrono	February 2018
Respondent 28	Agogo Ahenbrono	February 2018
Respondent 29	Agogo Ahenbrono	February 2018
Respondent 30	Agogo Ahenbrono	February 2018
Respondent 31	Agogo Ahenbrono	February 2018
Respondent 32	Agogo Ahenbrono	February 2018
Respondent 33	Agogo Ahenbrono	February 2018
Respondent 34	Agogo Ahenbrono	February 2018
Respondent 35	Agogo Ahenbrono	February 2018
Respondent 36	Agogo Ahenbrono	February 2018

List of Respondents (Focus Group Discussions)

Participant Number	**Community**	**Date**
Participant 1 (CFGD)	Krowhereso	February 2018
Participant 2 (CFGD)	Krowhereso	February 2018
Participant 3 (CFGD)	Krowhereso	February 2018
Participant 4 (CFGD)	Krowhereso	February 2018
Participant 5 (CFGD)	Krowhereso	February 2018
Participant 6 (CFGD)	Krowhereso	February 2018
Participant 7 (CFGD)	Krowhereso	February 2018
Participant 8 (CFGD)	Krowhereso	February 2018
Participant 1 (CFGD)	Agogo Ahenbrono	February 2018
Participant 2 (CFGD)	Agogo Ahenbrono	February 2018
Participant 3 (CFGD)	Agogo Ahenbrono	February 2018
Participant 4 (CFGD)	Agogo Ahenbrono	February 2018
Participant 5 (CFGD)	Agogo Ahenbrono	February 2018
Participant 1 (PFGD)	Krowhereso	February 2018
Participant 2 (PFGD)	Krowhereso	February 2018
Participant 3 (PFGD)	Krowhereso	February 2018
Participant 4 (PFGD)	Krowhereso	February 2018
Participant 5 (PFGD)	Krowhereso	February 2018
Participant 6 (PFGD)	Krowhereso	February 2018
Participant 7 (PFGD)	Krowhereso	February 2018
Participant 8 (PFGD)	Krowhereso	February 2018

Participant 1 (PFGD)	Agogo Ahenbrono	February 2018
Participant 2 (PFGD)	Agogo Ahenbrono	February 2018
Participant 3 (PFGD)	Agogo Ahenbrono	February 2018
Participant 4 (PFGD)	Agogo Ahenbrono	February 2018
Participant 5 (PFGD)	Agogo Ahenbrono	February 2018
Participant 6 (PFGD)	Agogo Ahenbrono	February 2018

List of Respondents (Key Informant Interviews)

Interviewee Number	**Name**	**Position**	**Date**
Interviewee 1	Mr. Kweku Nti	Assembly Member, Agogo- Ahenbrono	February 2018
Interviewee 2	Kontihene	Second in Command to Agogo Paramount chief	February 2018
Interviewee 3	Opanyin Amoako	elder	February 2018
Interviewee 4	Mr. Samuel Osei	Assembly Member- Krowhereso	February 2018
Interviewee 5	Mr Samuel Ato Arthur	Unit Committee Member	February 2018
Interviewee 6	Opanyin Kweku Agyeman	Family Head	February 2018
Interviewee 7	Professor Steve Tonah	Lecturer- University of Ghana	February 2018
Interviewee 8	Okyeame Osei	Linguist of the Agogo paramountcy	February 2018

Appendix D- Semi Structured Interview Guide
Interview Guide for Farmers

Lund University
International Development and Management
Semi-structured Interview Guide for Farmers

Topic: Customary land tenure and farmer-herder conflicts: Implications on indigenous farmers' investment decisions.

Thank you for agreeing to take part in this research. The interview will take approximately 25-30 minutes to complete. Be assured that all information provided will be treated with the utmost confidentiality and anonymity and will be used solely for academic purposes.

Basic Information
Name…….
Age…….
Gender……
Name of community……
Occupation……
Status in community…….Migrant/ Indigene
If migrant; place of origin……..
Number of years lived in community……..
Marital status……
If married; Occupation of spouse…….
Number of children……
Level of education……

Land Rights and Ownership

1. Do you have access to your own agricultural land?
2. If yes, what is the land size in acres?
3. How did you acquire the land? (Gift/ inheritance/ sale/ usufructuary acknowledgement from chiefs/ occupancy)
4. Who gave you final rights to use the land?
5. What is the nature of your land holding arrangement?
6. Did you make or still make payments for use of land?
7. If yes, to whom were these payments made?
8. How easily can you expand your land size?

Pastoralists Land Rights and conflicts

9. Do you recognize that pastoralists have land rights in your community?

10. What kind of land rights do they possess in your opinion?
11. How do they acquire these land rights?
12. Do you have knowledge of land transactions with pastoralists?
13. How have you benefited from land sale proceeds collected by land owners?
14. Do you feel pastoralists undermine your land rights?
15. What are the main causes of farmer-herder conflicts?
16. Who should be blamed for the escalation of farmer-herder conflicts?
17. To what extent does the threat of being deprived contribute to the conflict?
18. Do you think the exercise of land use and ownership rights of pastoralists influences farmer herder conflicts?
19. What mechanisms do you use for dispute mediation?
20. What are your thoughts on allegations of corruption by the chiefs in the mediation of the dispute?

Farmer's investment decisions

21. How has the conflict influenced your livelihood?
22. What coping methods do you adopt? (Livelihood diversification and for how long?)
23. Do farmers engage in permanent or temporal livelihood diversification?
24. Have you or are you likely to increase your farm size in spite of the conflict?
25. Do you limit your cultivation during the dry season due to the activities of pastoralists?
26. If yes, for how long do you limit your cultivation?
27. Do you feel insecure about your land rights?
28. Has the conflict influenced you to cultivate different crop types?
29. What kind of crops? Tree crops or early maturing crops
30. Do you engage in other farm or non-farm economic activities due to the risk associated with cropping when activities of pastoralists are rampant?
31. What kind of alternative economic activities do you engage in due to the risk associated with cropping when activities of pastoralists are rampant?

Recommendations

32. How do you think the problem can be amicably resolved?

Interview Guide for Key Informants

Lund University
International Development and Management
Semi-Structured Interview Guide for Key informants

Topic: Customary land tenure and farmer-herder conflicts: Implications on indigenous farmers' investment decisions.

Thank you for agreeing to take part in this research. The interview will take approximately 25-30 minutes to complete. Be assured that all information provided will be treated with the utmost confidentiality and anonymity and will be used solely for academic purposes.

1. What is your position?
2. Who are the principal land owners in the area?
   a. Do you have any sub-group ownership in the community?
   b. What is the nature of these sub-groups?
   c. What rights do these sub-groups hold in land?
   d. Does the central or local government exert land ownership rights?
   e. To what extent do individuals own land?
3. What is the process of acquiring land?

a. Is the process the same for both indigenes and strangers?

b. Under what circumstances can indigenes and strangers lose their land rights?

c. How have the rules governing land acquisition changed?

4. How is land transferred?

   a. What are the conditions and modes for land transfer?

   b. Are indigenes and settlers required to seek the consent of traditional authorities before land transfers?

5. Do you have records on land transaction?
6. What kind of land rights do you grant? others (specify)
7. How is land managed customarily in the community?
8. Who can acquire land and how? (Men, women, youth strangers)
9. What land ownership and use rights do indigenes and settlers have in their land?

a. Are there any restrictions on land use rights?

b. For how long can indigenous people hold land?

c. *How has the right to use land changed over time for indigenes?*

10. To what extent are community members engaged in land management decisions?
11. What rights do pastoralists hold in customary land tenure?
12. What agreements do you have with migrant and settler agro-pastoralists?
13. What covenants or rules govern pastoralists land rights?
14. How effective are the rules that govern pastoralists land access?
15. How do community leaders ensure equitable land tenure security for indigenes and settlers?
16. Do indigenous people and settlers pay for their acquired land?
17. How do you keep records of land transactions?
18. What is the land tenure history between farmers and pastoralists in this area?
19. What in your opinion are the causes of farmer-herder conflicts?
20. Who should be blamed for the escalation of farmer-herder conflicts?
21. What institutional arrangements exist for resolving farmer-herder conflicts?
22. What challenges do you face in farmer-herder conflict resolution?
23. Whose rights supersede the other; farmers or pastoralists?
24. Why do you think the activities of pastoralist are rampant in your community?
25. How has the nature of economic activities changed in the last two decades with growing population pressure?
26. Is agricultural land still available for indigenes? [ ] Yes [ ] No
27. What kind of coping and alternative livelihood strategies do community members adopt as a result of threat of conflict?
28. How has the threat of conflict encouraged out-migration and a move away from agriculture?
29. What do you think are the social and economic effects of the conflict?
30. What would you recommend be done to prevent future conflicts?

Interview guide for Focus Group Discussions

1. How do you acquire land in the community?
2. In your opinion, what kind of rights do you have in the land?
3. How do you think pastoralists/ farmers acquire their lands?

4. In your opinion, what kind of rights do pastoralists/farmers have to the land?
5. In your opinion, what are the causes of farmer-herder conflicts?
6. Who should be blamed for the escalation of farmer-herder conflict in the community?
7. What are the effects of the farmer-herder conflicts on your livelihoods?
8. What are the effects of the farmer-herder conflicts on your investment decisions? (farm size, kind of crops)
9. What coping strategies do you adopt during periods where conflicts are rampant?
10. How can the farmer herder conflicts be resolved?

Appendix E-Consent Forms

Study Background

You have been invited to partake in this study on "*Implications of farmer-herder conflicts and threats to customary land tenure on indigenous farmers' agricultural investment decisions in Agogo, Ghana*". Your views are important because you are involved in farming and understand the dynamics of conflict and land tenure in the Agogo Traditional Area (ATA). The study involves understanding your perceptions of pastoralist's land rights, causes of the conflict, investment decisions you make in the face of land tenure insecurity and coping strategies you use to adapt to the threat to land tenure. The study is in partial fulfilment of the master's degree in International Development and management and a final report will be presented to Lund University in May 2018.

Upon agreement to partake in the study, your views will be recorded and transcribed to form part of data analysis. The study has no foreseeable risks or political connotations. Your views will be held in confidence and treated anonymously to remove all possibilities of traceability of respondents. The interview is scheduled to take between 30-45 minutes to complete. Your cooperation is highly appreciated however you may refuse to answer questions upon discretion of leave the interview at any time. You also have the right to ask further clarification question during the research and may request to have a copy of the transcribed text for verification purposes before data analysis.

CONSENT:

I have understood the provided information above and I consent to partaking in the study. I have also received a copy of the consent forms.

Participant's Name

Participant's signature _____ Date _____

Researcher's signature _____ Date _____