

**THE ROLE OF INSTITUTIONS IN MITIGATING NATURAL RESOURCE-
BASED CONFLICTS BETWEEN FARMERS AND PASTORALISTS IN
KILOSA AND MVOMERO DISTRICTS, TANZANIA**

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**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
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EXTENDED ABSTRACT

Recurrent conflicts between farmers and pastoralists have brought significant impact on both groups and the society at large in Kilosa and Mvomero districts. Mitigation of conflicts between farmers and pastoralists, with the intention of bringing up peace and tranquility in the community is important for empowering farmers and pastoralists in terms of skills in modern farming without encroaching other land, keeping livestock without disturbing others and arbitration mechanisms applied to mitigate conflicts with little success. This study (i) examined drivers and consequences of recurrent conflicts, (ii) determined mitigation strategies that would ameliorate recurrent conflicts arising between farmers and pastoralists in Kilosa and Mvomero districts and (iii) assessed the role of formal and informal institutions in mitigating conflict. A sample size of 203 farmers and pastoralists was chosen using a simple random sampling technique. Data were collected using interview, a questionnaire survey, documentary review and focus group discussions (FGDs) methods. Collected data were analyzed both qualitatively and quantitatively using content analytical and binary logistic regression approaches respectively. The findings show that it would be effective to use a conflict resolution model which is solely based on social order in four main stages: developing expectations for win-win solutions, defining each party's interests, brainstorming creative options, and combining options into win-win solutions. Importantly, the findings revealed that weak governance structures associated with unethical behaviour, regulatory deficiencies, socio-economic and environmental factors are responsible for the recurrence of conflicts between farmers and pastoralists. Consequently, the recurrent

conflicts have resulted into major socio-economic impacts that include loss of lives and property to both farmers and pastoralists. Drawing from conflict and conflict resolution theories, which advocate use of coercive power and participatory approaches to restore peace, respectively; this thesis concludes that no single strategy fits all conflicts given the complexity in which such conflicts occur. In the light of the results, this thesis recommends that the effective way to address farmers-pastoralists conflicts: should twofold i.e. use both coercive and participatory approaches. Therefore, the choice of the appropriate strategy will depend on the context since no single approach fits all types of conflicts. Also the study recommends that various stakeholders such as the local government and civil societies should encourage pastoralists to establishing pasture land. In addition, the LGA should regulate the number of animals per area by formulating bylaws for controlling livestock populations in areas with limited land in order to match its carrying capacity, controlling migration of other ethnic groups and guaranteed water right for farmers and pastoralists for the sake of bringing peace and harmony between farmers and pastoralists. More importantly, the land policy has some deficiencies and contradictions because it does not guarantee security of tenure to some users, especially smallholder groups. Unsecured land tenure system in Tanzania has accounted to the underdevelopment of the land resource in the country. Therefore, the situation has resulted into unethical practices such as corruption. For instance, some village leaders have been receiving bribes from pastoralists thus allowing them to enter in the villages which ... loads to conflicts with crop producer This also creates enmity between farmers and pastoralists. The study recommends that there is a need for the government to effectively establish a transparent and

accountability committee whose obligation will be to critically observe rules, regulations as far as land tenure is concerned. Additionally, the study recommends that there should be investigation conducted by relevant authorities such as the Prevention and Combating of Corruption Bureau (PCCB) in order to identify the sources of these vices and institute legal procedures/actions against the offenders.

DECLARATION

I, Emmanuel Mhoja Falanta do hereby declare to the Senate of Sokoine University of Agriculture that this thesis is my own original work done within the period of registration and that it has neither been submitted nor been concurrently submitted in any other institution.

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TABLE OF CONTENTS

<u>EXTENDED ABSTRACT.....</u>	<u>ii</u>
<u>DECLARATION.....</u>	<u>v</u>
<u>COPYRIGHT.....</u>	<u>vi</u>
<u>ACKNOWLEDGEMENTS.....</u>	<u>vii</u>
<u>DEDICATION.....</u>	<u>x</u>
<u>TABLE OF CONTENTS.....</u>	<u>xi</u>
<u>LIST OF TABLES.....</u>	<u>xviii</u>
<u>LIST OF FIGURES.....</u>	<u>xix</u>
<u>LIST OF APPENDICES.....</u>	<u>xx</u>
<u>LIST OF ABBREVIATIONS AND ACRONYMS.....</u>	<u>xxi</u>
<u>CHAPTER ONE.....</u>	<u>1</u>
<u>1.0 INTRODUCTION.....</u>	<u>1</u>
<u>1.1 Background to the Study.....</u>	<u>1</u>
<u>1.2 Problem Statement.....</u>	<u>4</u>
<u>1.3 Justification for the Study.....</u>	<u>6</u>
<u>1.4 Objectives of the Study.....</u>	<u>8</u>
<u>1.4.1 Overall objective.....</u>	<u>8</u>
<u>1.4.2 Specific objectives.....</u>	<u>8</u>
<u>1.5 Research Questions.....</u>	<u>8</u>
<u>1.6 Literature Review.....</u>	<u>9</u>
<u>1.6.1 Institutions.....</u>	<u>9</u>
<u>1.6.2 Natural resources based conflict.....</u>	<u>9</u>

1.6.3	<u>Institutional effectiveness.....</u>	<u>10</u>
1.6.4	<u>Causes of conflict between farmers and pastoralists.....</u>	<u>10</u>
1.6.4.1	<u>Drought.....</u>	<u>10</u>
1.6.4.2	<u>Traditional beliefs and practices.....</u>	<u>11</u>
1.6.5	<u>Conflict mitigation, resolution and management.....</u>	<u>12</u>
1.6.6	<u>Farmer and pastoralists.....</u>	<u>14</u>
1.6.7	<u>Institutions role.....</u>	<u>14</u>
1.6.8	<u>Theoretical conception and conceptual framework.....</u>	<u>15</u>
1.6.8.1	<u>Conflict resolution theory.....</u>	<u>15</u>
1.6.8.2	<u>Institutional theory.....</u>	<u>16</u>
1.6.9	<u>Conceptual framework.....</u>	<u>16</u>
1.7	<u>Research Methodology.....</u>	<u>19</u>
1.7.1	<u>Description of study area.....</u>	<u>19</u>
1.7.2	<u>Research design.....</u>	<u>21</u>
1.7.3	<u>Sample size determination and unit of analysis.....</u>	<u>21</u>
1.7.4	<u>Data collection.....</u>	<u>22</u>
1.7.5	<u>Data analysis.....</u>	<u>23</u>
1.8	<u>Study Limitations.....</u>	<u>24</u>
1.9	<u>Organization of the Thesis.....</u>	<u>24</u>
	<u>References.....</u>	<u>25</u>
	<u>CHAPTER TWO.....</u>	<u>35</u>
20	<u>Drivers and Consequences of Recurrent Conflicts between Farmers and Pastoralists in Kilosa and Mvomero Districts, Tanzania.....</u>	<u>35</u>
21	<u>Abstract.....</u>	<u>35</u>

22	<u>Introduction.....</u>	<u>36</u>
23	<u>Theoretical Review.....</u>	<u>38</u>
	2.3.1 <i>Conflict Theory.....</i>	38
	2.3.2 <i>Conflict Resolution Theory.....</i>	38
	2.3.3 <i>Drivers of Conflict between Farmers and Pastoralists.....</i>	39
24	<u>Conceptual Framework.....</u>	<u>40</u>
25	<u>Methodology.....</u>	<u>41</u>
	2.5.1 <i>The Study Area.....</i>	41
	2.5.2 <i>Research Design, Sample Size and Sampling Procedure.....</i>	41
26	<u>Results and Discussion.....</u>	<u>42</u>
	2.6.1 <i>Recurrence of Farmers-Pastoralists Conflicts.....</i>	42
	2.6.1.1 <i>Socio-economic factors.....</i>	43
	2.6.1.2 <i>Environmental Factors.....</i>	44
	2.6.1.3 <i>Over Stocking.....</i>	45
	2.6.1.4 <i>Unethical practices.....</i>	47
	2.6.1.5 <i>Policy and regulatory deficiencies.....</i>	48
	2.6.2 <i>Consequences of recurrent natural resource use conflicts between farmers and pastoralists.....</i>	50
	2.6.3 <u>Contribution to theory.....</u>	<u>52</u>
27	<u>Conclusions and Recommendations.....</u>	<u>52</u>
	2.7.1 <u>Conclusions.....</u>	<u>52</u>
	2.7.2 <u>Recommendations.....</u>	<u>53</u>
	<u>Acknowledgements.....</u>	<u>53</u>
	<u>References.....</u>	<u>54</u>
	<u>Copyrights.....</u>	<u>57</u>

CHAPTER THREE.....	58
30 <u>Mitigation of conflicts between farmers and pastoralists in Kilosa and Mvomero Districts, Tanzania.....</u>	58
Abstract.....	58
31 <u>Introduction.....</u>	59
32 <u>Theoretical Framework.....</u>	63
3.2.1 <u>Mitigation of conflicts between farmers and pastoralists.....</u>	65
3.2.2 <u>Execution of mitigation of farmers-pastoralists conflicts.....</u>	66
3.2.3 <u>Significance of mitigation of conflict between farmers and pastoralists.....</u>	68
33 <u>Methodology.....</u>	69
3.3.1 <u>Description of the study area.....</u>	69
3.3.2 <u>Research design, sample size and sampling procedure.....</u>	69
3.3.3 <u>Data collection and analysis.....</u>	70
3.4. <u>Results and Discussion.....</u>	72
3.4.1 <u>Measures in executing mitigation of conflicts.....</u>	72
3.4.1.1 <u>Establishing pasture land.....</u>	73
3.4.1.2 <u>Regulating the number of animals kept.....</u>	73
3.4.1.3 <u>Controlling migration of other ethnic groups.....</u>	74
3.4.1.4 <u>Guaranteed water rights for farmers and pastoralists.....</u>	75
3.4.2 <u>Approaches for mitigation of conflict.....</u>	76
3.4.2.1 <u>Empowering of farmers and pastoralists in mitigation of conflicts.....</u>	76
3.4.2.2 <u>Arbitration.....</u>	77
3.4.2.3 <u>Involving Non-Governmental Organizations (NGOs) in the</u>	

study area.....	77
3.4.3 <u>Expectations of farmers and pastoralists from mitigation of conflict.....</u>	<u>79</u>
3.4.3.1 <u>Increase participation and creativity among the two communities</u> <u>.....</u>	<u>79</u>
3.4.3.2 <u>Having peace and harmony for both farmers and pastoralists.....</u>	<u>80</u>
3.4.3.3 <u>Create strong teamwork and cooperation.....</u>	<u>81</u>
3.4.4 <u>Contribution to the conflict resolution model.....</u>	<u>82</u>
3.5 <u>Conclusions and Recommendations.....</u>	<u>83</u>
3.5.1 <u>Conclusions.....</u>	<u>83</u>
3.5.2 <u>Recommendations.....</u>	<u>85</u>
<u>References.....</u>	<u>86</u>
<u>CHAPTER FOUR.....</u>	<u>93</u>
40 <u>Role of Formal and Informal Institutions in Mitigating Conflicts between</u> <u>Farmers and Pastoralists in Kilosa and Mvomero districts, Tanzania.....</u>	<u>93</u>
<u>Abstract.....</u>	<u>93</u>
41 <u>Introduction.....</u>	<u>94</u>
42 <u>Theoretical Review.....</u>	<u>97</u>
4.2.1 <u>The role of institutions.....</u>	<u>99</u>
4.2.2 <u>Approaches in mitigating conflicts between farmers and pastoralists.....</u>	<u>100</u>
43 <u>Methodology.....</u>	<u>102</u>
4.3.1 <u>The study area.....</u>	<u>102</u>
4.3.2 <u>Research design, sample size and sampling procedure.....</u>	<u>104</u>
4.3.3 <u>Data collection and analysis.....</u>	<u>105</u>
44 <u>Results and Discussion.....</u>	<u>107</u>

4.4.1	<u>The role of formal and informal institutions in mitigating conflicts.....</u>	<u>108</u>
4.4.1.1	<u>Formal institutions and their roles.....</u>	<u>108</u>
4.4.1.2	<u>Informal institutions and their roles.....</u>	<u>111</u>
4.4.1.3	<u>Formal and informal institutions.....</u>	<u>115</u>
4.4.2	<u>Institutions and mitigation of conflicts between farmers and pastoralists.....</u>	<u>118</u>
4.4.2.1	<u>Existing conflict in the study area.....</u>	<u>118</u>
4.4.2.2	Strengthen coordination between two parties to identify modality of dissolving conflicts.....	118
4.4.2.3	<u>Create a common exchange and negotiation platform for local stakeholders.....</u>	<u>119</u>
4.4.2.4	<u>Respecting demarcated boundaries set.....</u>	<u>119</u>
4.4.3	Factors that influence involvement of both formal and informal institutions in mitigation of conflict.....	120
4.4.4	<u>The study's contribution to theory.....</u>	<u>125</u>
45	<u>Conclusions and Recommendations.....</u>	<u>126</u>
4.5.1	<u>Conclusions.....</u>	<u>126</u>
4.5.2	<u>Recommendations.....</u>	<u>127</u>
	<u>References.....</u>	<u>128</u>
	<u>CHAPTER FIVE.....</u>	<u>137</u>
5.0	<u>Summary of Major Findings, Conclusions and Recommendations.....</u>	<u>137</u>
5.1	<u>Summary of Major Findings and Conclusions.....</u>	<u>137</u>
5.2	<u>Recommendations.....</u>	<u>140</u>
5.3	<u>Recommendations for Further Research.....</u>	<u>142</u>

5.4 <u>Contribution of the Study</u>	143
5.4.1 <u>Contribution to the body of knowledge</u>	143
5.4.2 <u>Theoretical reflection</u>	144
<u>APPENDICES</u>	146

LIST OF T

Table 1.1: Number of selected respondents per village.....	20
Y <u>Table 2.1. Number of selected respondents per village</u>	<u>41</u>
<u>Table 2.2. Socio-economic characteristic of respondents (farmers and pastoralists)</u>	<u>44</u>
<u>Table 2.3. Factors accounting for recurrence of farmers-pastoralists conflicts</u>	<u>45</u>
<u>Table 2.4. Regulatory framework</u>	<u>49</u>
<u>Table 2.5. Sense of insecurity</u>	<u>52</u>
Y <u>Table 3.1: Number of selected respondents per village</u>	<u>70</u>
<u>Table 3.2: What measures should be executed for mitigation of conflict?</u>	<u>76</u>
<u>Table 3.3: Outcome of Mitigation of conflict</u>	<u>82</u>
Y <u>Table 4.1: Number of selected respondents per village</u>	<u>104</u>
<u>Table 4.2: The role of formal and informal institutions in mitigating conflict</u> <u>between farmers and pastoralists</u>	<u>114</u>
<u>Table 4.3: Institutions mitigate conflicts between farmers and pastoralists</u>	<u>120</u>
<u>Table 4.4: Test statistics</u>	<u>121</u>
<u>Table 4.5: Estimated results of Binary Logistic Regression (Formal and in</u> <u>formal institution in mitigating conflicts)</u>	<u>123</u>

LIST OF FIGURES

Figure 1.1: Conceptual Framework for Examining Role of Institutions in Mitigating Resource-based Conflicts between Farmers and Pastoralists in Kilosa and Mvomero Districts.....	18
<u>Figure 2.1. Increase in number of cattle.....</u>	<u>47</u>
<u>Figure 2.2. Consequences of conflicts of natural resource use between farmers and pastoralists.....</u>	<u>51</u>
<u>Figure 3.1: The conflict resolution model. Adopted from Davidson and Wood (2004).....</u>	<u>64</u>
<u>Figure 3.2: Approaches for mitigation of conflicts.....</u>	<u>79</u>
<u>Figure 4.1: Location of the study area.....</u>	<u>103</u>

LIST OF APPENDICES

Appendix 1: Formula for sample size determination according to Kothari (2004).....	146
Appendix 2: An interview guide for focus group discussions.....	147
Appendix 3: Sample questionnaire for household survey.....	148

LIST OF ABBREVIATIONS AND ACRONYMS

AICAD	Association of Independent Colleges of Art and Design
ASDS	Agriculture Sector Development Strategy
BATNA	Best Alternative to a Negotiated Agreement
CBOs	Community Based Organizations
CCT	Christian Council of Tanzania
CRM	Conflict Resolution Model
CSOs	Civil Society Organizations
CSSH	College of Social Sciences and Humanities
DALDO	District Agriculture and Livestock Development Officer
DDS	Department of Development Studies
DONET	Dense Ocean floor Network System for Earthquake and Tsunamis
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
IBM	International Business Machines
IT	Institutional theory
KIs	Key Informants
LEDECO	Legal and Development Consultants Limited
LHRC	Legal and Human Right Center
LICADHO	Cambodian League for the Promotion and Defence of Human Rights
LP	Livestock Policy

LWF	Labour Welfare Fund
NBS	National Bureau of Statistics
NGOs	Non-Government Organizations
NIV	New International Version
NLUPC	National Land Use Planning Commission
PAICODEO	Parakuiyo Pastoralists Indigenous Community Development Organisation
PCCB	Prevention and Combating of Corruption Burea
SACSCOC	Southern Association of Colleges and School Commission on Colleges
SPSS	Statistical Package for Social Sciences
SUA	Sokoine University of Agriculture
TNDV	Tanzania National Development Vision
UN	United Nations
UNEP	United Nations Environmental Programme
URT	United Republic of Tanzania
USAID	United States Agency for International Development
VEOs	Village Executive Officers
WEOs	Ward Executive Officers
WLEOs	Ward Livestock Extension Officers

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The term conflict refers to misunderstanding, disagreement, or divergence of ideas, which results into hurting each other, and when management is delayed, it can lead into coercive measures that suggest forceful victory on either party (Wallenstein, 2002). Conflicts between farmers and pastoralists are not new (Benjaminsen *et al.*, 2009). They have been reported in Holy books; for example Abraham and his nephew Lot were in disagreement as to where their cattle would get water and pastures for their animals; because their servants were in scrambling for natural based resource then later they separated, and Lot chose the Jordan while Abraham chose the East for their animal grazing and farming (Genesis 13:5-9). All these are the archetypal examples of the tension between farmers and pastoralists.

In Tanzania, conflicts between farmers and pastoralists have been recurring for a long time and creating major economic impacts to the nation (Semberya, 2014; Mwamfupe, 2014). Conflicts between these two sectoral actors have had lethal consequences in the past. For instance, in Kilosa District, Morogoro Region tragically 38 farmers were killed in December 2000 after clashes erupted between farmers and pastoralists. In October 2013, fights between farmers and pastoralists at Mgongola valley in Mvomero District left six people dead and a dozen of injured farmers who were attacked by the Maasai pastoralists. Also, in January 2014, a conflict between farmers and pastoralists claimed 15 lives, leaving 14 people

severely injured in Kiteto District in Manyara Region (Mwafupe, 2014). Whenever these conflicts occur, the society is seriously affected socio-economically (Saruni *et al.*, 2018).

Conflicts between the above mentioned sectors are over natural resource-use. They are associated with increase of population. **As population continues to rise, and the demand for resources increases, there is significant potential for conflicts.** This is exacerbated by inequitable access to and shortage of land and resource depletion. Researchers suggest that pastoral land is decreasing due to expansion of cultivated areas and the promotion of agriculture (Mwamfupe, 2014).

In Kilosa and Mvomero Districts human population has been increasing for the past three decades. In 1988 the population in Kilosa and Mvomero was 346 526 and 204 345 respectively whereas in 2002 the population increased to 488 191 (Kilosa) and 259 347 (Mvomero) (URT, 2006). Of recent, based on the Tanzanian population and housing census of 2012, Kilosa District had a population of 438 175 while Mvomero District had a population of 312 109 (URT, 2012). This significant population growth increases pressure on land and conflicts involving various sectors including farmers and pastoralists. **As population continues to rise, and hence the demand for natural resources continues to grow, there is significant potential for conflicts over natural resources to intensify** (UNEP, 2009). Arguably, population increase leads to increasing pressure on land those results into land degradation and land conflicts between land users (Lambin and Meyfroidt, 2011).

Various stakeholders including the Government, International Organizations, Non-Governmental Organizations and Community Based Organizations have made

several efforts to combat conflicts between farmers and pastoralists. Such efforts include preparation of land use plans and establishment of various policies. Among these policies are the National Land Policy of 1995; the Agriculture and Livestock Policy of 1997 (LHRC, 2010); the Village Land Act No. 5 of 1999; The Land Disputes Act No. 2 of 2002; the National Livestock Policy of 2006; the National Land Use Plan Act of 2007 and the Grazing Land and Animal Feed Act No. 13 of 2010. Mitigation of conflicts between farmers and pastoralists is among issues described in these policies.

According to Waldman (2009), mitigation of conflicts seeks to reduce threat of violent conflicts by promoting peaceful resolution of differences, reducing violence if it has already broken out, or establishing a framework for peace and reconciliation in an on-going conflict. In other words, mitigation employs the use of various actors such as farmers, pastoralists, government, NGOs, civil groups, as well as engaging leaders among these actors to integrate metrics of the conflict (Maria and Tumpe, 2013). These actors can play various roles in conflicts between farmers and pastoralists (Tanguilig and Tanguilig, 2009) as governed by various institutions.

While institutions have various definitions (Ostrom, 1993; North, 1990; Agrawal and Gibson, 1999), in this study institutions are defined as rules, norms, conventions, and customs governing and shaping interactions of humans and linking various actors involved in the resource-use conflict between farmers and pastoralists (Mahonge, 2010). The institutions in this context can be categorized as formal, informal and hybrid institutions. Formal institutions are rules such as constitutions

and laws enforced by the state (e.g land committee, environmental committees, water committees), whereas informal institutions are constraints such as “codes of conduct, norms of behaviour, and conventions”, which are generally enforced by members of relevant groups (North, 2003) such as farmers and pastoralists. Hybrid institution implies the integration of formal and informal rules (Mahonge, 2010).

However, there has not been any reasonable achievement so far to mitigate farmers-pastoralists conflicts (Mattee and Shem, 2006). Despite the various efforts by different actors to address conflicts between farmers and pastoralists, such conflicts still exist and perhaps are more severe than before (Msuya, 2013). Moreover, farmers and pastoralists are governed by various institutions in their practices. Therefore, the current study aimed at establishing the role of institution in mitigating natural-resources based conflicts between farmers and pastoralists.

1.2 Problem Statement

Conflicts between farmers and pastoralists in Kilosa and Mvomero Districts are most noticeable during periods of drought when there is shortage of pastures and water. During such periods it is common for pastoralists to move herds to places far away from their settlements (transhumance) in search for pastures and water, and sometimes animals graze on crop farms (Mung'ong'o, 2003). Pastoralists in Tanzania include the Maasai nomads from Arusha and Manyara Regions and Wasukuma (agro-pastoralists) from Northwestern regions of Mwanza, Shinyanga, Simiyu and Geita; and whose arrival in Kilosa and Mvomero accelerates the conflicts between farmers and pastoralists in the area (Mattee *et al.*, 2006). Often times conflicts between

farmers and pastoralists in Kilosa and Mvomero Districts leave hundreds of people homeless, food insecure and others dead, following burning of houses and food crops in farms.

Due to the recurrent conflicts in Kilosa and Mvomero Districts the government has intervening by engaging various committees. These include environmental committees, water committees, land conflict mediating committees (e.g. land tribunals) and land use planning committees, as well as judiciary processes in attempt to solve conflicts through discussions as well as by imposing fines; yet, the conflicts still persist (Msuya, 2009). From a research point of view various studies on farmers-pastoralists have been conducted in Tanzania. These include studies on “policy issues for enhancing pastoralists’ resilience to climate variability versus reality” (Mahonge *et al.*, 2014), Kilosa killings involving farmers and pastoralists (Benjaminsen *et al.*, 2009), and how farming and pastoral land could be managed for harmonious coexistence (Mwamfupe, 2014) as well as forms and drivers of conflicts between farmers and pastoralists (Saruni *et al.*, 2018).

Mattee and Shem (2006) in the review of the policy environment in relation to pastoralism argued that whereas pastoralism and pastoralist livelihoods are highlighted in many of the existing policies, strategies and laws, most of these documents are not supportive of pastoralism. In other words, there has been little effort to translate the policies into action to ensure that pastoralists are legally guaranteed access to land and water through clearly demarcated areas. However, the study by Mattee and Shem (2006) focused on formal institutions with a more inclination on pastoralists.

However, most of the above mentioned studies focused on causes of those conflicts and the impacts of those conflicts but did not consider the role of institutions as a rule of the game or rule of the society. Most of the studies have pointed out the role of institutions (formal and informal) that can be effective in mitigating conflicts between farmers and pastoralists. Therefore, the current study aimed at bridging the gap left by the other studies that formal and informal institutions are tools in mitigating conflicts between farmers and pastoralists. That is to say, this study assesses the contribution to the understanding of the concept of formal and informal institutions as tools for mitigating conflicts between farmers and pastoralists.

1.3 Justification for the Study

This study is important in terms of understanding the role of formal and informal institutions, nature, causes and ways of mitigating conflicts in Kilosa and Mvomero Districts with a view of recommending measures for reducing conflicts thereby making farmers and pastoralists use their efforts productively hence, enhancing both agricultural and livestock production.

The study is also in line with policies and acts which were relevant to the study for instance Tanzania Agriculture and Livestock Policy of 1997 which discouraged movement of pastoralists with their cattle. However, there has been arrival of Wasukuma (an ethnic group) migrants in Kilombero valley, Kilosa and Mvomero originating from the Northwestern Tanzanian regions of Mwanza and Shinyanga looking for green pastures for feeding their cattle and cultivate (Mattee and Shem, 2006). Also, the Land Act, 1999 and the Village Land Act, 1999 were referred to the

two land Acts aimed to secure existing rights based on longstanding occupation by: promoting equitable distribution, promoting efficient administration and sustainable development, promoting fair compensation and facilitating market land (UN, 2013). Additionally, the National Water Policy of 2002 which seeks to harmonize human and environmental requirements, so that the human use of water does not individually or cumulatively compromise the long term sustainability of aquatic and associated ecosystems (URT, 2002).

Despite the fact that Tanzania has the National Land policies and Acts, there exist numerous challenges as far as land ownership is concerned. These challenges include: conflicts on land use in rural areas especially between farmers and pastoralists (Mahonge *et al.*, 2014).

The result of this study also provide knowledge that may be used by the government, policy makers as well as decision makers in order to make appropriate interventions that promote peace, harmony and tranquillity between farmers and pastoralists in line with the Tanzania National Development Vision (TNDV) 2025. This vision insists on peace and stability as attributes which must be cultivated, nurtured and sustained as important pillars for the realization of the Vision. The study findings will also extend literature on conflict mitigation strategies and institutional roles in this regard.

1.4 Objectives of the Study

1.4.1 Overall objective

The overall objective of the study was to assess the role of formal and informal institutions in mitigating resource-based conflicts between farmers and pastoralists in Kilosa and Mvomero Districts.

1.4.2 Specific objectives

The specific objectives of the study were to:

1. Examine major drivers and consequences of recurrent conflicts between farmers and pastoralists in the study area.
2. Determine how conflicts between farmers and pastoralists are mitigated in the study area, and
3. Assess the factors of formal and informal institutions in mitigating conflicts between farmers and pastoralists in the study area.

1.5 Research Questions

- 1) Which drivers influence conflict between farmers and pastoralists?
- 2) What are the consequences of conflicts between farmers and pastoralists?
- 3) How are conflicts between farmers and pastoralists mitigated? and
- 4) What are factors of formal and informal institutions that partake in mitigating conflict between farmers and pastoralists?
- 5) What are the roles of these institutions?

1.6 Literature Review

1.6.1 Institutions

According to Agrawal and Gibson (1999), institutions are sets of formal¹ and informal² rules and norms that shape interactions of humans with others and nature. Mahonge (2010) defines institutions as rules, norms, conventions, and customs governing and linking the practices and decisions of users and enforcers of natural resource management. The study adopts a definition of institution by Agrawal and Gibson (1999). This is because the study will look at both formal and informal rules and norms that shape the interaction of farmers and pastoralists which hinge on the use of natural resources such as land, pasture and water.

1.6.2 Natural resources based conflict

There are many perspectives and definitions of the term conflict. Robbins (1994) defines conflict as a process that begins when one party perceives that another party has negatively affected something that the first party cares about. Wallensteen (1988) and Mason and Mullaer (2007) define conflict as a social interaction in which a minimum of two parties strive at the same moment to acquire the same resources. In case of natural resource relations and because resources are limited and scarce, and peoples' needs often exceed availability, this leads to blocking behaviour, with both parties trying to get more of the resources than the others (Idrissou *et al.*, 2013). This study defines the natural resource – based conflicts as disagreements and disputes

1 Formal institutions stipulate rules such as constitutions, laws and property rights.

2 Informal institutions are generally agreed upon arrangements or rules of behaviour such as sanctions, taboos, customs, traditions and codes of conduct (North, 1995).

over access to natural resource and control the use of natural resources. These conflicts often emerge because people have different uses for resources such as water, pastures and land.

1.6.3 Institutional effectiveness

Institutional effectiveness is the systematic, explicit, and documented process of measuring performance against mission in all aspects of an institution (SACS/COC, 2010). On the other hand an institution is effective when it succeeds in solving the problem that led to its creation (Young, 1999). For institutions to be effective in the long run, then, they must be able to adapt not only to variations in the resources themselves, but also to the changing knowledge base and social systems of the resource users (Dietz *et al.*, 2003; Stern *et al.*, 2003). Youg (1999) suggested that institutional effectiveness in mitigating conflict if they have monitoring and enforcement mechanisms, and exchange of information, anticipate that each of the mechanisms may improve cooperation and reduce the chances for conflict. For instance, specific institutional provisions can help monitor behaviour, facilitate enforcement, resolve disagreements over treaty obligations, and help boost the capacity of two communities (e.g. farmers and pastoralists) (Youg, 1999).

1.6.4 Causes of conflict between farmers and pastoralists

1.6.4.1 Drought

Droughts, or period of unusual low rainfall, are part of the expected pattern of precipitation in semi-arid Africa (FAO, 2005). The major impact of drought is the

drying up of water resource and declining of forage for livestock resulting into many conflicts between farmers and pastoralists (Orindi *et al.*, 2007).

Currently, climatic variability also affects distribution and availability of these resources leading to pastoralists migrating into land occupied by farmers hence, conflicts between these two groups. Wijeyaratue (2009) points out that a correlation between drought and conflict already exists in Africa mainly due to increased competition for water and pasture.

1.6.4.2 Traditional beliefs and practices

Most people believe in the spirits of those who came before them. For example, all farmers and pastoralists believe in customs traditions as well as religion. In the agricultural aspect farmers believe that most contributors in economy spectrum are farmers due to its great contribution to the economy, agriculture is often described as the back-bone of the economy and the sector is often referred to as the lead sector in Tanzania which contributes 30.1% of national economy (URT, 2018) not only that agriculture sector facilitate employment to citizen (URT, 2013). Therefore, agriculture not only encompasses the ability to stimulate economic growth; it is also strategically positioned to create the most immediate impact on poverty reduction and livelihood improvement in Tanzania.

This is the situation as it is. The farmers deserve praise for the great contribution which they are making to the very survival of the Nation. On the other hand, the religions of the ethnic minorities are characterized with much colour of ethnicity (Christianity and Muslim). The ethnic minorities are deeply influenced by their

beliefs, from values to the details of daily life. In other words, religion is the main tie in terms of ethnic sentiment maintenance. In addition, some scholars argue that many ethnic minorities with religious and traditional belief had historical experiences (Mwamfupe, 2015). For instance, a Maasai religious belief relates to their traditional religion, based on their god Engai who gave them all the cattle on earth, leading to the belief that rustling cattle from other tribes is a matter of taking back what is rightfully theirs or taking cattle to green pasture is right to them as per their god affirmation (Benjaminsen *et al.*, 2009). Hence, doing such practice may escalate conflicts with adverse consequences.

Pastoralists sometimes engage in deliberate destruction of crops and properties because of the belief that such acts are essential for stock growth/expansion and house prosperity (Ajowun, 2004). This destruction occurs while there is drought which compels the pastoralists move to search for water and pastures for their animals.

1.6.5 Conflict mitigation, resolution and management

Conflicts have always been part of the society due to the multiple and competing demands on resources. In Tanzania, several policies, strategies and acts have been established by government organs such as Agriculture Sector Development Strategy (ASDS) of 2001, Livestock Policy (LP) of 2006, Rural Development Strategy of 2001 and Land Tenure acts (Land Act, Village Act, Village land Act), but yet the conflicts are still encountered.

Conflicts can arise if user groups are excluded from participating in natural resource management (Massawe and Urassa, 2016). Among the factors leading to arise conflict are inequity in resource distribution, policies imposed without local participation, inefficient programme implementation, lack of harmony and coordination between bodies of law and legal procedures (FAO, 2000). Conflict mitigation in this sense seeks to resolve the incompatibilities of interests and behaviours that constitute the conflict by recognizing and addressing the underlying issues, finding a mutually acceptable process and establishing relatively harmonious relationships and outcomes (Waldman, 2009). On the other hand conflicts resolution is conceptualized as the methods and processes involved in facilitating the peaceful ending of conflict and retribution (Massawe and Urassa, 2016). It is best understood as a working model with two key elements, conflict management and negotiation. Importantly, conflict resolutions encompass approaches that address and transform the deep-rooted sources of conflicts (Adebayo and Olaniyi, 2008).

Therefore, conflict mitigation and resolution approaches have challenged the power-political view of conflict, by arguing that communal and identity natured conflicts, "people cannot compromise on their fundamental needs" (Miall, 2004). Therefore, they called for an additional approach, conflict management.

Conflict management is the process of limiting the negative aspects of conflict while increasing the positive aspects of conflict. The aim of conflict management is to enhance learning and group outcomes, including effectiveness or performance in an organizational setting. Conflict management approaches see violent conflicts as an

engrained consequence of power inequalities within society caused by existing institutions and historical relationships. Thus, resolving the conflict is seen as unrealistic (Miall, 2004). Therefore, conflict management brings the conflicting sides together, plans the constructive management of the conflicts and reaches a historical compromise that can contain and settle the hostility. The focus is on the process and the intension of making behavioural, attitudinal ' and structural changes (Massawe and Urassa, 2016). Moreover, it is about fostering new thoughts and relationships, looking at the root of conflicts and establishing creative solutions (Miall, 2004).

Fischer (2006) argues that the use of an integrated approach to conflict mitigation, resolution and management will bring about versatile solutions.

1.6.6 Farmer and pastoralists

In the farming structure of Tanzania, a famer has a permanent settlement and he/she solely depends on agriculture to producing a variety of food products for supporting livelihood (FAO, 2015). On the other hand, a farmer is a person engaged in agriculture, raising living organisms for food or raw materials (Mwamfupe, 2015).

A pastoralist herds livestock, often as a nomadic wanderer without a set farm area. He is a person whose primary occupation is the raising of livestock. Pastoralists have, since the colonial period, been perceived by authorities in Africa as unproductive, unorganized and environmentally destructive as they cause overgrazing and desertification (Scott, 1998). Pastoralists always get into conflict with farmers when their cattle eat farm crops (Turner, 2004).

1.6.7 Institutions role

Institutions provide rules, constraints and incentives that are instrumental to the governance of exchanges (North, 1990). These institutions or governance mechanism can be either formal or informal in nature. According to Campbell and Shackleton (2002), for the role of institutions to be successful, several conditions must be met among which are: the group must address a felt need and a common interest (such as land accessibility for cattle grazing); the benefits of participating in activities of the community for individuals must outweigh the costs; the institution must have the capacity, leadership, knowledge and skills to manage the task; and must own or enforce its own regulations. Although there could be differences among the communities with respect to their functions in organizing collective action and effectiveness, the institutions in each community have primary responsibilities of bringing the people together and fostering harmonious living. Therefore the role of institutions is to bring the community together and experience peace and unity.

1.6.8 Theoretical conception and conceptual framework

1.6.8.1 Conflict resolution theory

The conflict resolution theory as a self-control has developed theoretical insights into the nature and sources of conflicts and how conflicts can be resolved through peaceful methods to effectuate durable settlements (Meha, 2004). Generally, the conflict resolution theory suggests that human behaviour in social contexts results from conflicts between competing groups, in this case farmers and pastoralists (Boundless, 2014). Hence, the conflict resolution theory derives from the ideas of

Karl Marx who contends that a society is a dynamic entity constantly undergoing changes by class conflict. The conflict perspective views social life as competition. Competition over scarce resources is at the heart of all social relationships (Boundless, 2014).

The conflict resolution theory as willpower can stand alone to explain a comprehensive solution of a conflict to resolve conflicts through peaceful methods to effectuate durable settlements (Meha, 2004). Mainly using participatory approach considers peaceful mechanisms in addressing conflicts.

1.6.8.2 Institutional theory

The institutional theory, which is employed in this study, is a social system that consists of multi-level organizations linked together through a historical tradition and a set of norms and beliefs, transmitted through actors and local networks to regulate behaviour (Scott, 2008). Institutional Theory is "policy-making that emphasizes on the formal and legal aspects of government structures" (Kraft's Public Policy, 2007). It considers the processes by which structures; including schemes, rules, norms, and routines become established as authoritative guidelines for social behaviour (Scott, 2004).

The institutional theory offers a framework that can be useful in addressing the relationship with conflict resolution. In this regard, farmers and pastoralists must be involved in the policy making and decisions on natural resource management from the ground/grassroot level (Buckles, 1999; FAO, 2000a).

1.6.9 Conceptual framework

Conflicts between farmers and pastoralists occur because one of these actors perceives that the other party negatively affects its interests, especially when the involved party strives at the same moment to acquire the same resources (Wallensteen, 1988; Mason and Mullaer, 2007). Such resources have characteristics of being limited and scarce, and needs of the two categorical actors often exceed availability (Idrissou *et al.*, 2013). There are a number of factors which potentially drive these conflicts. These could be drought (FAO, 2005) that negatively affects the demanded resources such as water and forage for livestock (Orindi *et al.*, 2007). Shortage of these resources can trigger pastoralists' migration towards land occupied by farmers in their attempts to acquire these resources and hence stirring conflicts between the two sectoral groups (Wijeyaratue, 2009). Other factors could be political, capacity, and beliefs. These could serve as both accelerating drivers and as causative agents. Inequity in resource distribution, policies imposed without local participation, and conflicting bodies of law and legal procedures can be other potential causative agents (FAO, 2014).

Various ways have been used to mitigate conflicts between farmers and pastoralists as they seek to address the underlying causes. The process often involves various mechanisms including negotiation, institutional and diplomacy procedures (Burde *et al.*, 2011). Institutional mechanisms (the focus of this study) could entail formal institutions such as state-based policies, strategies and acts. The institutions could also be informal such as norms, taboos, routine and repetitive practices that have

evolved overtime amongst local sectoral groups of actors such as pastoralists and farmers based on their continued interactions with other social actors but also with their ecological landscapes. The informal and formal institutions could also be religious in nature. This is an indication that, the local field is complex as it includes a myriad of interacting institutions which can result into a hybrid of these institutional mechanisms as well as a proxy for assessing institutional effectiveness (Mwamfupe, 2014). The formal and informal institutions may have an important role in the process of mitigating conflicts between farmers and pastoralists. This role could be negative by causing new or accelerating the already existing conflicts or positive by playing part in preventing the emergence of new or reducing severity of on-going conflicts. There is also a dual possibility whereby the same or various kinds of institutions may influence occurrence of both positive and negative conflictive effects and outcomes at the same or different times and places. In other words, the contribution of institutions in causing/accelerating and/or preventing/reducing conflicts can be used

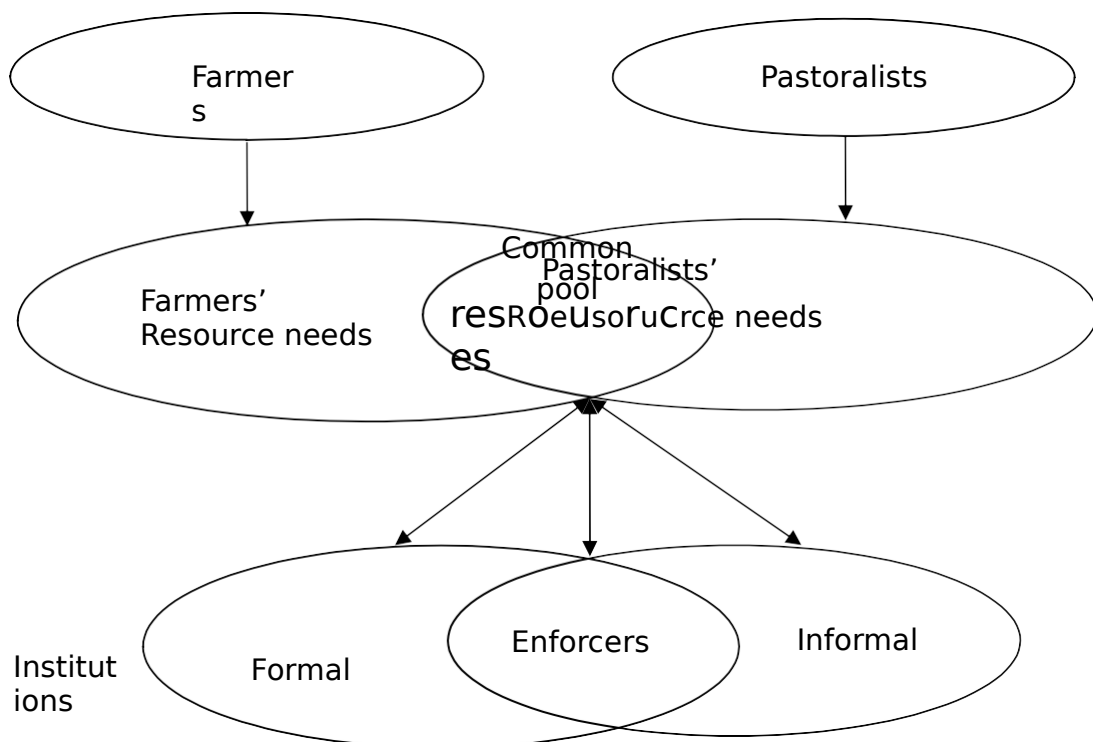




Figure 1.1: Conceptual Framework for Examining Role of Institutions in Mitigating Resource-based Conflicts between Farmers and Pastoralists in Kilosa and Mvomero Districts.

1.7 Research Methodology

1.7.1 Description of study area

This study was conducted in Kilosa and Mvomero Districts of Morogoro Region, in Tanzania. Kilosa and Mvomero Districts are two of the seven [districts](#) of [Morogoro Region](#) of [Tanzania](#) with great potential of economic development and prosperity. Both districts have similar good climate and arable land for agriculture and other economic investments such as pastoralism despite the government geographical boundaries (URT, 2004). Most of the people in the two districts are farmers. There are also pastoralists such as Maasai and agro-pastoralists such as Wasukuma, Wapare. These groups have moved in and settled in the districts in search for grazing lands for their cattle and cultivation. These new settlers have occasionally clashed with existing ethnic groups. The conflicts are always based over the land use and occupancy rights (URT, 2004). Four villages were purposively selected for the study;

two from each district. Villages from Kilosa District were Rudewa and Msowero while from Mvomero District were Hembeti and Mhonda Table 1.1 and Figure 1.2. The selection of the villages was based on the most affected areas by natural resource use conflicts between farmers and pastoralists in Tanzania. Being close to one another, the two districts have had more or less similar types of causes and timing of natural resource-use conflicts. This has captured a lot of stakeholders' interests and attention with regard to how the conflicts unfold, and the underlying causes and effects.

Table 1.1: Number of selected respondents per village

District	Village	Total No. of Population (Census,2012)	Number of selected Respondents		Total No. of Household selected
			Farmer s	Pastoralist s	
Kilosa	Rudewa	18,352	38	30	68
	Msower	29,361	40	32	72
Mvomero	Hembeti	21,057	10	17	27
	Mhonda	20,354	15	21	36
Total		89,124	103	100	203

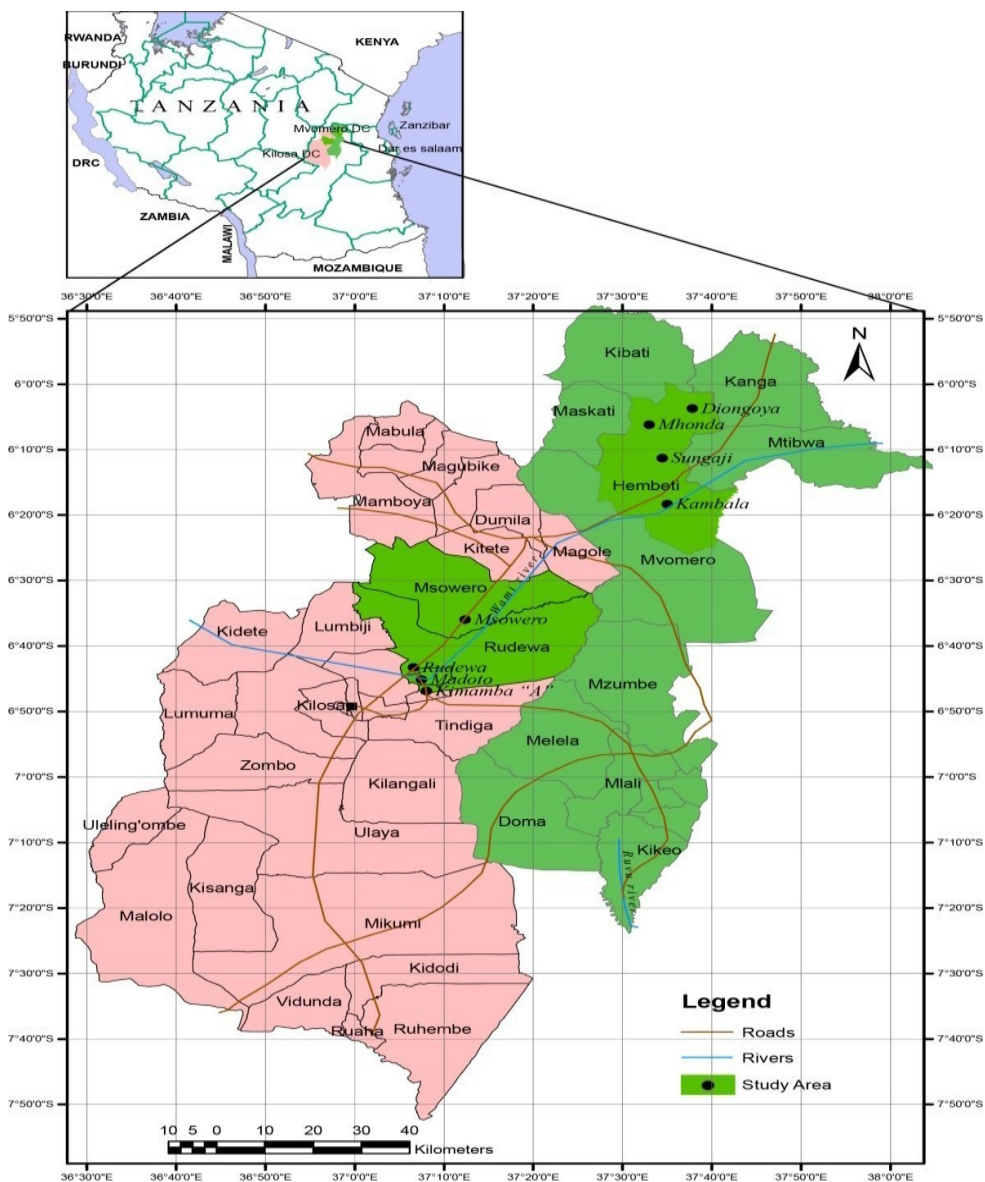


Figure 1.2: Location of the study area

(Source: NBS 2012)

1.7.2 Research design

The proposed study used a cross-sectional research design. Which involves collection of information only once from any given sample of population (Kothari, 2008). This approach was used because the information that was gathered from the respondents and through documentary review represented the existing situation at the time of the study (Bailey, 1994). The design was most appropriate for the study because it allows collection of data on given variables at a given point in time (Amin, 2005). This ensured that all the data required would be collected within a relatively short period of time. Importantly, the design allows collection of both qualitative and quantitative data in a short period of time.

1.7.3 Sample size determination and unit of analysis

The sample size determination formula is presented in Appendix 1. According to URT (2012), the population affected by conflict between farmers and pastoralists in the study area of Kilosa and Mvomero Districts was 56 728 and 58 378 respectively making a total population of 115 106 people. More specific are land users who are direct affected by the conflict between famers and pastoralists, who are likely to benefit from improved natural resource –use. The sample size for the study was, therefore, 203. This was obtained through proportionate stratified sampling, Through this technique four villages were sampled (Redewa, Msowero, Hembeti and Mhonda). A proportion for each village was calculated by dividing the total number of village households to the overall total households for all villages. The selected sample was considered relevant since all villages had the same interest, value and

traditional practices (Ringo *et al.*, 2018). Using proportionate sampling 103 and 100 people were selected from Kilosa and Mvomero Districts respectively. The unit of analysis was the household for both farmers and pastoralists in the study area.

The study areas including districts and villages, participating local organizations and key informants were purposively selected based on the frequency and perceived damage caused by resource use conflicts.

1.7.4 Data collection

Primary data were collected using both qualitative and quantitative data collection techniques. Qualitative data collection methods were used to collect data from key informants who were government officials, reviews of various government documents such as Policies, Guidelines, Acts and By-laws related to the conflicts between farmers and pastoralists and Focus Group Discussions (FGD) with farmers as well as pastoralists. Focus group discussions were held in each selected study area which helped to establish stand points. Checklists of items for discussion were used to guide key informant interviews and focus group discussions (Appendix 2). Face to face interviews were used to collect quantitative primary data from farmers and pastoralists, through the use of a questionnaire. Casual interviews with key informants were carried out to clarify issues arising from other data collection methods.

Both quantitative (descriptive and inferential numeric analysis) and qualitative approaches (description and thematic text and image analysis) of data analysis were used. Using a combination of qualitative and quantitative data can improve an

evaluation by ensuring that the limitations of one type of data are balanced by the strengths of another. This will ensure that understanding is improved by integrating different ways of knowing.

Some of the qualitative themes were also transformed into counts in order to validate quantitative and qualitative findings. Validation and comparison could be done by triangulating data collection methods using a household survey, key informant interviews and focus group discussions.

Secondary data were collected from desk work by reviewing different literature sources relevant to the study including government reports; that is from the government offices at the regional, municipal and district levels existing and various reports from local government offices e.g. minutes of their meetings, non-governmental organisations (NGOs) and community based organisations (CBOs) reports and newspapers. Other sources were from court testimonies, criminal records from the police and acquiring land without observing legal procedure this was regarded as unlawful land acquisition.

1.7.5 Data analysis

Qualitative data were analyzed using content analysis whereby combinations of elements of analysis were employed to come up with information or themes. The identified key information or themes are discussed in details with some quotations from the key informants' interviews and focus group discussions (Creswell, 2009). In this regard, the recorded components of discussion with the respondents were broken down into small units of information or themes to synthesize meaning, values and

attitudes. Quantitative data were analyzed by using IBM SPSS Statistics for windows version 22.0 and whereby descriptive and inferential statistics were determined.

1.8 Study Limitations

With respect to this aspect, a number of study limitations have been identified as follows. One of the limitations was language barrier. This happened so because the interview was conducted in Kiswahili while few of the respondents were unable to communicate through such a language. Although this was identified as one of the critical challenge when conducting this study, the District Livestock Officers from Kilosa and Mvemero Districts identified persons who helped in interpretation whenever a need arose. There was also a challenge in the exercise of collecting data due to absence of male heads of household who were the spokesmen on issues related to livestock keeping. This was addressed by revisiting the study village to particular households.

Another limitation which was identified during the period of this study was fear of speak in front of elders. This was mostly caused by junior respondents who did not like to give right information in presence of their elders. They faced a lot of hesitation and gave information in favour of elders only. To overcome this scenario, the researcher had to conduct face to face interviews in order to get clear information from the respondents.

1.9 Organization of the Thesis

The thesis was developed based on publishable manuscripts set up of Sokoine University of Agriculture. Each manuscript stands as a chapter in this thesis and the entire thesis is divided into five chapters. Manuscripts one to three are placed from chapter two to five while the first chapter covers introduction, statement of the problem, justification as well as overall and specific objectives addressed by the study. Furthermore, chapter two includes theoretical review and two theories, conflict theory and conflict resolution theory, which were used to guide the study. The emphasis of this chapter was to examine major drivers and consequences of conflicts between farmers and pastoralists in the study area. In chapter three, the second manuscript is presented; it determines how conflicts between farmers and pastoralists are mitigated in the study area.

Chapter four of the thesis consists of the third manuscript which assesses the factors of formal and informal institutions in mitigating conflicts between farmers and pastoralists in the study area. Lastly, chapter five, present the overall conclusions and recommendations. The chapter concludes across the previous chapters and gives recommendation to the Government, Non-governmental organizations, policy makers and other stakeholders like interested groups who worked to solve conflicts between farmers and pastoralists.

References

- Adebayo, O. O. and Olaniyi, O. A. (2008). Factors associated with pastoral and crop farmers conflict in derived Savannah Zone of Oyo State, *Nigeria*. *Journal of Human Ecology*, 23(1), 71-74.
- Agrawal, A. and Gibson, C. C. (1999). Enchantment and disenchantment: The role of community in natural resource conservation. *World Development* 27(4): 629-649.
- Amin, E. M. (2005). *Social Science Research: Conception, Methodology and Analysis*. Kampala: Makerere University Printery, Kampala. 22pp.
- Ajowun, S. S. (2004). Managing conflict of interest in community Development- Case Study Conflict in Fadama Communities.
- Bailey, K. D. (1994). *Methods of Social Science Research*. (Fourth Edition). The Free Press. A Division of Macmillan Inc., New York. 588pp.
- Benjaminsen, T. A., Maganga, F. P. and Abdalla, J. M. (2009). The Kilosa killings: Political ecology of a farmer–herder conflict in Tanzania, *Development and Change* [40\(3\)](#): 423–445.
- Boundless, (2014). The conflict perspective. Boundless Sociology [<https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/sociology-1/the-theoretical-perspective-in-sociology-24/the-conflict-perspective-156-974/>] site visited on 15 Des. 2015.

Buckles, D. (1999). Cultivating peace: conflict and collaboration in natural resource management. IDRC/World Bank, Ottawa.

Burde, D., Kapit-Spitalny, A., Wahl, R. and Guven, O. (2011). Education and conflict mitigation: What the aid workers say. USAID. 54pp.

Campbell, B. and Shackleton, S. (2002). The organisational structures for community based natural resources management in southern Africa. *African Studies Quarterly* 5(3). (online), URL: [<http://web.africa.ufl.edu/asq/v5/v5i3a6.Htm>] site visited on 11 May 2015.

Creswell, W. J. (2009). *Research Design. Qualitative, Quantitative and Mixed Approaches*. Third Edition. SAGE Publications, Inc. India. 260pp.

Crossman, A. (2014). Conflict Theory [<http://sociology.about.com/od/Sociological-Theory/a/Conflict-Theory.htm>] site visited on 15 December 2015.

Dietz, T., Ostrom, E. and Stern, C. (2003). The struggle to govern the commons. *Science* 302(5652): 1907-1912.

FAO (2000a). Conflict and natural resource management. Rome, Italy.

FAO (2000b). Conflict and natural resource management. [<http://www.fao.org/forestry/21572-d9d4b43a56ac49880557f4ebaa3534e3.pdf>] site visited on 25 April 2015.

FAO (2005). The state of food and agriculture. Food and Agriculture Organization of the United Nations, Rome. 211pp.

FAO (2014). Document Repository, Social and cultural institutions of pastoralism [<http://www.fao.org/docrep/005/y2647e/y2647e08.htm>] site visited on 27 October 2014 17:55.

FAO (2015). Introducing the UN Decade of family farming. [www.fao.org/home/en/] site visited on 15 June 2016.

Idrissou, L., Aarts, N, van Paassen, A. and Leeuwis C. (2011). The discursive construction of conflict in participatory forest management: The Case of the Agoua Forest Restoration in Benin. *Conservation and Society* 9(2): 119-131.

Ikejiaku, B. (2009). The Relationship between poverty, conflict and development. *Journal of Sustainable Development* 2(1): 15 – 21.

Kothari, C. R. (2008). *Research Methodology Methods and Techniques*, Dharmesh Printers, New Delhi. pp 26-43.

- Kraft, M. E. and Furlong, S. R. (2007). *Kraft's Public Policy: Scott R Public Policy: Politics, Analysis, and Alternatives* (2nd ed). CQ; London : Eurospan [distributor], Washington, D.C. 78pp.
- Lambin E. F. and Meyfroidt, P. (2011). Global land use change, economic globalization, and the looming land scarcity. *Proceedings of the National Academy of Sciences of the United States of America* 108(9): 3465–3472. <https://doi.org/10.1073/pnas.1100480108>.
- Mahonge, C. Mwilawa, A. Ngendello, M. and Mtambuki, A. (2014). Policies issues for enhancing pastoralists' resilience to climate variability versus reality in Longido district Tanzania, [*Livestock Research for Rural Development* 26 \(12\)](#).
- Mahonge, C. P. I. (2010). Co-managing complex social-ecological systems in Tanzania: The case of Lake Jipe wetland. Dissertation for Award of PhD Degree at Wageningen University, The Netherlands. 186pp.
- Maria, E. and Tumpe, N. (2013). Traditional mechanisms of resolving conflicts over land resource: A Case of Gorowa Community in Northern Tanzania. [Traditional Mechanisms of Resolving Conflicts over Land Resource: A Case of Gorowa Community in Northern Tanzania. *International Journal of Academic Research in Business and Social Sciences* [IJARBSS] 3(11): 214–224.

- Massawe, G. D. and Urassa, J. K. (2016). Cause and management of land conflict in Tanzania: A Case of Farmers versus Pastoralists. *Uongozi Journal of Management and Development Dynamics* 27(2): 45-68
- Mason, S. and Muller, A. (2007). Transforming environmental and natural resource use conflicts'. In: Mario Cogoy and Karl, W. Steininger (eds), *The economics of global environmental change*, Edward Elgar: Cheltenham, UK and Northampton, MA, USA. pp 225-272.
- Mattee, A. and Shem, D. (2006). Ambivalence and contradiction; A review of the policy environment in Tanzania in relation to pastoralism, Issue Paper No. 140.
- Meha, D. (2004). *Theories of Conflict Resolution: An Analysis, South Asia – Articles #1531.*
- Miall, H. (2004). Conflict Transformation: A Multi-Dimensional Task, in: Berghof Handbook for Conflict Transformation, Online version. Berlin: Berghof Research Center. [\[www.berghof-handbook.net/documents/publications/miall_handbook.pdf\]](http://www.berghof-handbook.net/documents/publications/miall_handbook.pdf) sit visited on 25/06/2016.
- Msuya, A. J. (2009). Analysis of pastoralists and farmers in northern part of Tanzania from land administration perspective, International Institute for Geo-information science and earth observation enschede, the Netherlands.

- Msuya, D. G. (2013). Farming systems and crop-livestock land use consensus. *Tanzanian perspectives Open Journal of Ecology* 3(7): 473-481.
- Mung'ong'o, C. and Mwamfupe, D. (2003). Poverty and changing livelihoods of migrant Maasai pastoralists in Morogoro and Kilosa Districts, Tanzania. Research Report No. 03.5.
- Mwamfupe, D. (2014). Mitigating farmers and pastoralists in Tanzania, Project Ideal REPOA.
- North, D. C. (2003). The role of institutions in economic development united nations economic commission for Europe Geneva, Switzerland Discussion Paper Series No. 2003.2.
- North, D. (1990). Institutions, institutional change and economic performance.
- Orindi, V., Nyong, A. and Herrero, M. (2007). Pastoral livelihood adaptation to drought and institutional interventions in Kenya. Human Development Report 2007/2008 occasional paper. New York: United Nations Development Programme.
- Ostrom, E. (1993). Crafting institutions for self-governing irrigation systems. *J. stor* 75(4): 399-401.
- Robbin, P. (1994). Managing organisational conflict: A non-traditional approach.

SACS/COC, Southern Association of Colleges and School Commission on Colleges (2010). What is institutional effectiveness? Office of Institution Research, Planning and Effectiveness. Resource Manual.

Saruni, P. L., Urassa, J. K. and Kajembe, G. C. (2018). Forms and drivers of conflicts between farmers and pastoralists in Kilosa and Kiteto Districts, Tanzania. *Journal of Agricultural Science and Technology* 8(2018): 333-349 doi: 10.17265/2161-6256/2018.06.001.

Scott, J. (1998). *Seeing Like A State*. How certain schemes to improve the human condition have failed: New Haven, N. Y. Yale University Press. 338pp.

Scott, W. R. (2004). Institutional theory in Encyclopedia of Social Theory, George Ritzer, ed. Thousand Oaks, CA: Sage. pp. 408-414.

Semberya, D. (2014). Farmers, pastoralists conflicts: Where have we failed? The Guardian.

Stern, P. C., Dietz, T. and Ostrom, E. (2003). Research on the commons: Lessons for Environmental Resource Managers. *Environmental Practice* 4(2): 61-64.

Tanguilig, H. C. and Tanguilig, V. C. (2009). Institutional aspects of local participation in natural resource.

Turner, M. (2004). Political ecology and the moral dimensions of resource conflicts: The Case of Farmer-herder Conflicts in the Sahel; *Political Geography* 23: 863-889.

UN (2013). Natural Resource Management in Transition Settings. UNDG-ECHA Guidance Note. 36pp.

UNEP (2009). From conflict to peace building: The role of natural resources and the environment. United Nations Environment Programme UNEP, Nairobi.

URT (2006). Tanzania census 2002 analytical report. Volume X. National Bureau of Statistics Ministry of Planning, Economy and Empowerment Dar es Salaam.

URT (2007). United Republic of Tanzania, National sample census of agriculture. Regional Report.

URT (2002). National Water Policy. Ministry of Water and Livestock Development. Dar es Salaam.

URT (2013). A study on transforming agriculture in Tanzania. President's Office, Planning Commissions. Dar es Salaam, Tanzania.

URT (2012). Population and Housing Census (PHC) for the United Republic of Tanzania.

URT (2013). Population Distribution by Age and Sex and National Bureau of Statistics Ministry of Finance Dar es Salaam, Office of Chief Government Statistician President's Office, Finance, Economy and Development Planning Zanzibar.

URT (2018). The Economic Survey 2017, Produced by: Ministry of Finance and Planning DODOMA-TANZANIA.

Waldman, T. (2009). Conflict Resolution, Peace building, and youth. SPW Primer.

Wijeyaratue, S. (2009). Fragile Environment, Fragile State: What role for conflict-sensitivity and peace-building? – A discussion paper prepared for the CCIC Policy Round table: Reclaiming the commons: Promoting A North – South Agenda for Environment Justice-January 14, 2009 Ottawa Ontario.

Young, O. R. (1999). The Effectiveness of international environmental regimes, Causal Connections and Behavioral Mechanisms. Suite 2, 1 Duchess Street London, W1W 6AN, UK. pp 2.

CHAPTER TWO

20 Drivers and Consequences of Recurrent Conflicts between Farmers and Pastoralists in Kilosa and Mvomero Districts, Tanzania

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21 Abstract

Recurrent conflicts between farmers and pastoralists have brought significant impacts on both groups. In response to this situation, the government and other actors have taken several measures to mitigate such conflicts with little success. This paper examines drivers and consequences of recurrent conflicts between farmers and pastoralists in Kilosa and Mvomero districts. Using a sample size of 203 respondents, data was collected using interview, documentary review, and focus group discussions. Collected data was analyzed using both qualitative and quantitative analysis. The findings revealed that weak governance structures associated with unethical behaviour, regulatory deficiencies, socio-economic and environmental factors are responsible for the recurrence of conflicts between farmers and pastoralists. Consequently, the recurrent conflicts have resulted into major socio-economic impacts that include loss of lives and property to both farmers and pastoralists. Drawing from conflict and conflict resolution theories, which advocate use of coercive power and participatory approaches to restore peace, respectively; this paper concludes that no single strategy fits all conflicts, given the complexity in which such conflicts occur. In the light of the results, this paper recommends that the effective way to address farmers-pastoralists conflicts is that actors should use both lenses of coercive and participatory approaches, and the choice of appropriate

strategy will depend on the context since no single approach fits all types of conflicts.

Keywords: conflict, drivers, farmer, pastoralist, unethical practice

22 Introduction

The term conflict refers to misunderstanding, disagreement, or divergence of ideas, which result into hurting each other, and when management is delayed, it can lead into coercive measures that suggest forceful victory on either party (Norman, 2013:41). Conflicts are generally relational disputes between two or more parties, for example farmers and pastoralist. Conflicts between farmers and pastoralists are not new phenomena. Conflicts have been reported in Holy books; for instance, in the Bible, we are told about Cain, a farmer who killed Abel who was a pastoralist (Genesis 4: 2-8; NIV, 1984). Also different scholars have reported the tension between farmers and pastoralists in different parts of the world including Africa. (Massay, 2017, Semberya, 2014, Benjaminsen et al., 2009, Areas, 2003, Abba et al., 2008). Despite conflicts becoming a common phenomenon and several efforts made to avert the situation, conflicts are reported to recur.

In Tanzania the recurrence of conflict between farmers and pastoralists is not a new phenomenon it is driven by scarcity of land resource to cater for both groups (Massay, 2017). Along the same line, other scholars have argued that the two groups for a long time have been fighting for the right to use the land which in turn results into death and loss of properties (Benjaminsen et al., 2009; Norman, 2013). Despite the fact that Tanzania is endowed with an area of 94.5 million hectares of land, out of which 44 million hectares are classified as suitable for agriculture, large proportion of land about 37.4 million hectares are protected areas such as game reserves, game controlled areas, wildlife management areas and ramsar sites (Areas, 2003; Bengesi, 2014; Bengesi et al., 2009; Semberya, 2014). These areas are specifically protected for maintenance of biological diversity, natural or associated cultural resources and managed through legal or other effective means such as protected areas. Thus, since this protected land is not free for use, Aarts (2012) argues that the country has been experiencing an increasing magnitude of conflicts over access to land and water resources among land-users particularly between farmers and pastoralists.

The experience in Tanzania shows that recurrent conflicts between farmers and pastoralists are most noticeable during periods of drought. In such periods, pastoralists tend to move their herds to places far away from their settlements (transhumance) in search for pastures and water, and sometimes animals graze on crop farms. These recurrent conflicts between farmers and pastoralists leave hundreds of people homeless, food insecure and others dead, following burning of houses and food crops in farms (Mung'ong'o and Mwamfupe, 2003). The magnitude of the conflicts has been increasing such that state interventions have become necessary. In an effort to address the conflicts between farmers and pastoralists, the

government of Tanzania was prompted to split village lands into areas for farmers and for livestock keepers. For instance, Kambala village in Mvomero District was split into two parts one for each of the major land uses –grazing and crop cultivation” (Mwamfupe, 2015).

Despite these efforts by the government, it has been reported that the conflicts have been recurring whose consequences are becoming unbearable (Mwamfupe, *Ibid*). This situation raises a number of questions as to why such conflicts are persistent. While literature observes that the increasing number of conflicts in various areas of farmers-pastoralists is worrisome (Areas, 2003, Semberya, 2014; Benjaminsen, *et al.*, (2009), it is not known as to what exactly causes the recurrence of this situation. It might be possible that there are new drivers emerging or the applied strategies in addressing such conflicts are not relevant to the prevailing situation, and/or the previously identified drivers have not been dealt with accordingly. With the understanding of this situation, this paper attempts to answer the following questions; why do farmers-pastoralists conflicts recur in Kilosa and Mvomero districts? What are the new drivers of farmers-pastoralists conflicts in Kilosa and Mvomero districts? What could be the measures to address such conflicts in Kilosa and Mvomero districts? What are the consequences of recurrence of farmers-pastoralists conflicts in Kilosa and Mvomero districts?

In light of the above, this paper is organized into the following sections. The first section provides the theoretical review covering issues related to theories. The second section presents the methodology and the last part is on the results and discussion alongside with the conclusion and recommendations. Thus, this paper makes a useful contribution to knowledge on the existing literature and shades light on the practical ways on how to sustainably manage conflict between farmers and pastoralists. Since such conflicts have been recurring and that are currently at an alarming situation, the finding of this paper is useful for decision and policy makers, and other stakeholders such as local government, which is responsible for among other things to ensure peace and security (Komba et al., 2018; Jesse & Bengesi, 2018).

23 Theoretical Review

This paper applied two theories namely conflict theory and conflict resolution theory. The choice of these theories was based on their application in the most important aspects of social life including psychological considerations, which are important in shaping human behavior. In this view, the two theories are applied to frame the concept of drivers and consequences of recurrent conflicts.

2.3.1 Conflict Theory

According to the conflict theory, tensions and conflicts arise when resources, status, and power are unevenly distributed between groups in society, and that these conflicts become the engine for social change (Crossman, 2016. p.1). In addition, Tonah (2006) maintains that conflict theory views constant antagonism over economic resources as the fundamental cause of conflict between economic agents. The economic agents in this context are farmers and pastoralists. The point of conflict is usually when two or more parties do not reach a consensus over resources they need. Karl Marx, through conflict theory emphasizes the role of coercion and power in producing social order (Crossman, 2013). The theory upholds that social order is maintained by domination and power, rather than consensus and conformity. Those with wealth and power try to hold on to it by any means possible, chiefly by suppressing the poor and powerless. In this context, power can be understood as control of material resources and accumulated wealth, control of politics and the institutions that make up society.

However, this paper argues that it is not in all contexts that coercive power is appropriate to resolve conflicts. In other contexts, participatory approaches are much more relevant and effective. As such, this suggests that conflict theory is limited in its scope and may not support context, which requires participatory approaches since its orientation is the use of coercive power as a response to conflicts. In this view a need arises to consider conflict resolution theory, which is focused on peaceful approach of resolving conflicts.

2.3.2 Conflict Resolution Theory

The conflict resolution theory as a discipline has developed theoretical insights into the nature and sources of conflicts and how conflicts can be resolved through peaceful methods to effectuate durable settlements. Boundless (2016) maintain conflict resolution theory believe that human behavior in social contexts results from conflicts between competing groups. The theory works along Karl Marx's contention that "*a society is a dynamic entity constantly undergoing changes by class conflict.*" The conflict perspective views social life as competition. Competition over scarce resources is at the heart of all social relationships (Boundless, 2016.p.4).

In view of the fact that conflict resolution theory considers peaceful mechanisms and more participatory approaches in addressing conflicts. This paper suggests that in situation where coercive approaches are not appropriate the conflict resolution theory is well placed to explain. Given the fact that we do not live in an ideal environment

in such a situation we expect both scenarios i.e. coercive approach and participative approach to apply when dealing with conflicts. However, there are times when you may need a combination of both approaches. It is from this context, this paper postulate that “in the real life it is not realistic to claim that one strategy fits for all types of conflicts, the possibility is that there are situations which requires coercive power and others will require participatory approaches and in some incidences you need a combination of both. In this case this paper suggests that both theories should be considered together.

2.3.3 Drivers of Conflict between Farmers and Pastoralists

Conflicts between farmers and pastoralists have been linked to a number of drivers. Scholars identified various drivers of conflicts such as drought, land use, migration as well as traditional beliefs and practices (Mwamfupe, 2016; Benjaminsen et al., 2009; Abroulaye et al., 2015). However, the implications of these drivers on farmers and pastoralists have been detrimental in most cases. According to FAO (2005), droughts or period of unusual low rainfall is part of the expected pattern of precipitation in semi-arid Africa. Thus, one of serious effect of drought is drying up of water resource and declining of forage for livestock, a situation, which results into conflicts between farmers and pastoralists (Orindi et al., 2007). Climatic variability also affects distribution and availability of these resources leading to pastoralists migrating into land occupied by farmers hence, conflicts between these two groups occur. Mancosu et al. (2015) points out that a correlation between drought and conflict already exists in Africa mainly due to increased competition for water and pasture.

Furthermore, land conflicts often have extensive negative effects on economic, social, spatial and ecological development. This is especially true in developing countries and countries in transition economies where land market institutions are weak and opportunities for economic gain by illegal action are widespread hence, many poor people lack access to land. Land conflicts can have disastrous effects on individuals as well as on groups and even entire nations (Wehrmann, 2008). Many conflicts that are perceived to be clashes between different cultures are actually conflicts over land and related natural resources. This means that everywhere people are competing for the natural resources to enhance their livelihoods.

Migration from one place to another seemed to be patterns due to chronic drought conditions. Initially, this follows pre-established labour migration patterns, and may not differ in intensity from areas with established high rates of temporary, circular migration (Judex & Menz, 2003). In comparison to other disasters where few victims

consider permanently changing location Raleigh et al., (n.d) points out that migration is considered the highest in drought areas.

As Adeoye (2017) accentuates, pastoralists sometimes engage in deliberate destruction of crops and properties because of the belief that such acts are essential for stock growth/expansion and house prosperity. This destruction occurs through bush burning by the farmers for their various benefits, which pastoralists see as a deliberate attempt to deny livestock's access to pasture. Additionally, some pastoralists, for example, the Maasai believe that all the cattle in the world belong to them and were given to them by Enkai, (the god). Such belief has been a source of trouble with other neighboring communities by generating inter-tribal conflicts (Benjaminsen et al., 2009).

24 Conceptual Framework

Natural resources are conceived as anything (e.g. pasture, water, land, wild-fruits, etc) that originates naturally and is depended upon by social actors to derive their basic needs of food, income, shelter, and so forth, and is vulnerable to becoming scarce. The conflicts are operationalized through practices including verbal attacks (low intensity), destruction of property, injuring, and loss of life (high intensity), among others.

Previous studies emphasize that conflicts occur because of interactions between and among social actors (e.g. farmers and pastoralists) that can create struggles for scarce spatially and temporally dynamic natural resources (Mung'ong'o and Mwamfupe, 2003; Enwelu et al., 2015). When such interactions result in adverse intolerable effects, efforts have to be undertaken by diverse stakeholders to address the resource-based conflicts and drivers thereof. In agreement with and beyond previous studies, this paper hypothesized that conflicts recur and are fueled by various drivers within and beyond the boundaries of competition for natural resources including socio-economic, environmental factors, and unethical practice. This conceptual framework is imperative for guiding analysis and enhancing understanding on the diverse drivers for recurrence of conflicts, and its consequences. By employing this framework in operationalizing the study, this research has been able to come up with a thorough knowledge of holistic drivers and consequences of recurrent conflicts and has thus provided inputs in terms of policy recommendations useful for rectifying the situation.

25 Methodology

2.5.1 The Study Area

This study was conducted in Kilosa and Mvomero Districts of Morogoro Region, in Tanzania. Kilosa District is one of the six [districts](#) of [Morogoro Region](#) of [Tanzania](#). Four villages were purposively selected for the study, two from each district. The selection of the villages was based on the most affected areas by natural resource use conflicts between farmers and pastoralists in Tanzania.

2.5.2 Research Design, Sample Size and Sampling Procedure

This study employed cross-sectional research design, which involves collection of information only once from any given sample of population (Kothari, 2008). This design was used because of two main reasons. First, the information gathered from the respondents and documentary review represents the existing situation at the time of the study (Bailey, 1994) and the second reason is based on Amin's (2005) observation that design allows collection of data of given variables at a given point in time. This ensures that all the data required were collected within a short period of time, despite a relatively large sample of répondants.

The unit of analysis for this study were farmers and pastoralists of the household in Kilosa and Mvomero Districts. Using proportionate sampling 103 and 100 respondents were selected from Kilosa and Mvomero respectively to reduce uncertainty.

Table 2.1. Number of selected respondents per village

District	Village	Total No. of Population	Number of selected Respondents	Total No. of Household
Kilosa	Rudewa			
	Msowero			
Mvomero	Hembeti			
	Mhonda			
Total				

2.5.3 Data Collection and Analysis

Primary data was collected using

both qualitative and quantitative techniques. Qualitative data collection methods used to collect data from key informants who were 10 from government officials and focus group

discussions (FGDs) with farmers as well as pastoralists. Two FGDs were conducted in each

selected study area

(district) with seven to ten respondents gathered together which helped to create a trusting atmosphere between the participants themselves and between them and the researcher as a moderator. Checklists were used to guide key informant interviews and focus group discussions. Face to face interviews were used to collect quantitative data from farmers and pastoralists through the use of a questionnaire. This was carried out to clarify issues arising from other data collection methods. Secondary data was also collected from existing documents relevant to the conflicts between farmers and pastoralists obtained from various sources such as government documents including policy documents, guidelines, Acts and By-laws, District profile related to the conflicts between farmers and pastoralists.

Qualitative data was analyzed using content analysis whereby a combination of elements of analysis was employed to come up with information or themes. The identified themes were discussed in detail with some quotations from the key informants interviews and focus group discussions. In this regard, the recorded components of discussion with the respondents were broken down into small units of themes to synthesize meaning, values and attitudes. On the other hand, quantitative data were analyzed using statistical package for the social sciences (SPSS) and results were presented by descriptive and inferential statistics.

2.6 Results and Discussion

This paper answers four questions; why do farmers-pastoralists conflicts recur? What are the new drivers of farmers-pastoralists conflicts? What are the consequences of recurrence of farmers-pastoralists conflicts? What could be the measures to address such conflicts?

2.6.1 Recurrence of Farmers-Pastoralists Conflicts

This paper considers among factors accounting for recurrence conflicts between farmers and pastoralists to include socio-economic factors, unethical practices, environmental factors and regulatory framework which originated from respondents, key informants (KIs) and focus group discussion (FGDs). In the following sections, factors accounting for recurrent of conflicts between farmers and pastoralists are underscored.

2.6.1.1 Socio-economic factors

The socio-economic characteristics of the respondents were examined in relation to conflict between farmers and pastoralists. Households' background information described in this section includes general characteristics of respondents in terms of sex, age, level of education, and main occupation. In this study, 37.4% of the respondents were between the ages of 46 and 64 years, while 29.1% were between 36 and 45 years old (Table 2.2). This implies that majority of respondents were at the age of active working group and responsible for decision making. According to

Mwasha (2016), the age of a person usually is a factor that can explain the level of production and efficiency; it influences individual's experience, wealth and decision-making. Moreover, since the dominant age groups in this paper ranged between 46-64 and between 36-45 year old respectively, it is obvious that the groups were actively engaged in socio-economic activities of farming and pastoralists, which could easily lead to conflict due to each group struggling to fight on the same resource when satisfying their basic needs.

In terms of sex distribution, majority (86.2%) of the respondents were male and few (13.8%) were females (Table 2.2). The presence of more male respondents was attributed to the fact that the focus of this study was on the household heads, which are conventionally men dominant in African societies. With regards to the level of education this paper assumed that the higher the level of education, the higher the ability of addressing issues confronting them (farmers and pastoralists). Based on this assumption, higher level of education was expected to address conflict in a dialogue form with an assumption that elites have higher level of analysis can avoid clashes which could results into loss of life and properties (Bengesi & Abdalla, 2018). Given the fact that the majority (70.9%) had low level of education this may explain why persistence of recurrent conflict was experienced.

With respect to the main occupation, there was slight difference between farmers and pastoralists. The study found that 50.7% were engaged in farming while 49.3% were pastoralists. This suggests that there was almost equal distribution of the two groups in the study area, which may imply that throughout the year there is a competition for farming and grazing over land resource between the two groups since the two groups were either solely engaged in farming or pastoralist which lead to collision. From FGDs, it was reported that occupation has renewed interests in agriculture and further encroachment to areas that were used by pastoralists for grazing and/or as stock routes. As observed directly in the study area, most areas allocated for pastoralists were much more fertile leading to farmers' encroachment (Trespass to land occurs when a person undeviatingly intrudes on another's property without consent or settles upon the land) in search for productive land. As a result this accelerated the occurrence of recurrent conflicts.

Table 2.2. Socio-economic characteristic of respondents (farmers and pastoralists)

Socio-economic variable	Distribution	
	Frequency	Percent
Sex		
Male	175	86.2
Female	28	13.8
Age		
Under 26	12	5,9

Level of education

imate change has long been associated with droughts, occurrence of diseases, floods and the like (Lunyelele et al., 2016). Drought is considered to be one of the factors responsible for recurrence of natural resource use conflict, since it is associated with scarcity of water and pasture, which drives pastoralists to migrate to other areas where they can find water and pastures. Table 2.3 the findings affirm that 59.1 % of the respondents supported that drought is one of factors leading to natural resource use conflict. Similarly, literature has also shown that competition for scarce natural resources such as pasture and water aggravated by frequent droughts (Opiyo et al., 2011; Opiyo et al., 2012; Laiser, 2016). This is perceived as central to the rise of conflicts witnessed in the study area.

Main Occupation

2.6.1.2 *Environmental Factors*

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It is generally open that cattle need drinking water and pasture. The results in Table

2.3 show that the majority (93.1%) of respondents identified searching for water points and pasture as the main factors leading to recurrent of conflict between farmers and pastoralists. However, the search for water points and pastures for the pastoralists is related to lack of security on land that rural producers subsist on. One of the key informants argued:

“When the pastoralist community does not get water, they move from one place to another in search for water, as they move they graze in the agricultural land and conflict erupts. If we can solve the water problem, pastoralists will have enough water and limit their movement in search of water” (Key informant 1, Msowero village, August, 2015).

Migration is common in nomadic life especially during the dry seasons in search of pasture and water. Pastoralists from different parts of Tanzania such as Manyara, Shinyanga and Dodoma Regions migrate to Kilosa and Mvomero Districts to search for pastures and water for their livestock (Ringo et al., 2018a). Table 2.3 illustrates that 55.2 % of the respondents supported that migration from one area to another is one of factors responsible for recurring conflicts between farmers and pastoralists. This is supported by Mung'ong'o and Mwamfupe (2003) that confronted with the loss of grazing land due to several geographical factors and political marginalization, some Maasai have migrated to and/or taken up other economic pre-occupations in addition to livestock keeping in different parts of Tanzania including Morogoro and Kilosa Districts. Also Officer et al., (2016) pointed that pastoralists move with their livestock searching for pastures and water and on their way they graze on farm land which results into crashes with farmers.

Table 2.3. Factors accounting for recurrence of farmers-pastoralists conflicts (n = 203)

Socio-economic attributes	Distribution	
	Frequency	Percent (%)
Search for water and pastures	189	93.1
Migration from one place to another	112	55.2
Shortage of pasture	117	57.6
Drought	120	59.1
Unethical practice		
Corrupt practice	121	59.6
Destruction of crops and properties	104	51.2

2.6.1.3 Over Stocking

The increase in number of livestock is one of the factors leading to recurrent conflict between farmers and pastoralists. The occurrence of such conflicts is generally attributed to growing pressure on natural resources use, caused by large herds and the extension of cultivation. Figure 2.1 shows the number of cattle owned by the pastoralists in the study area; 42.6 % owned herd size of cattle between 101 and 150, while 41.8 % were those with cattle between 1 and 100, those who owned 151 up to 200 cattle were 10.9 % and 2.0 % owned herd size of cattle above 300. From these results, it is obvious; over stocking is one of the main factors which fueled the conflict between farmers and pastoralists. In the sense that, overstocking implies a situation where a piece of land is intensively stocked with more animals that the site can support for a grazing season. In the majority of the cases, animals are more than the average land available for grazing which leads to repeated removal of plant/vegetation material without sufficient amount of time given for the leaf/pasture

mass to regrow. These findings are in line with Ringo et al. (2018b) who reported that overstocking is common since it is a symbol of wealth and command high respect among Masai communities.

According to population statistics of livestock in Tanzania, the number of indigenous cattle in Morogoro region was 455,985 which are 98.9 % of the total number of cattle in the region; including indigenous and improved breeds 5052 cattle equivalent to 1.1% were dairy breeds and 26 cattle equivalent to 0.006% were beef breeds. The census results show that 10,037 agricultural households in the region which is about 88% of the total agricultural households kept 0.46 million cattle. This was equivalent to an average of 46 heads of cattle per cattle-keeping-household. The district with the largest number of cattle was Ulanga which had about 213,593 cattle (46.3%) of the total cattle in the region. This was followed by Kilosa with 77,655 cattle (16.8%), Mvomero with 71,988 cattle (15.6%), Kilombero with 71,511 cattle (15.5%), Morogoro Rural with 21,601 cattle (4.7%) and Morogoro Urban with 4,716 cattle (1.0%). However, Mvomero District had the highest cattle population density compared to other districts in the region, which had about 29 heads per km² (URT, 2007:71). In the light of these statistics, it is evident that the number of cattle is relatively high in relation to the available land size given other land uses. It is from this context, the government launched a nationwide campaigns for the pastoralists to reduce their herd size in order to avoid conflicts with other resource users and to safeguard the environment (Mwamfupe, 2015).

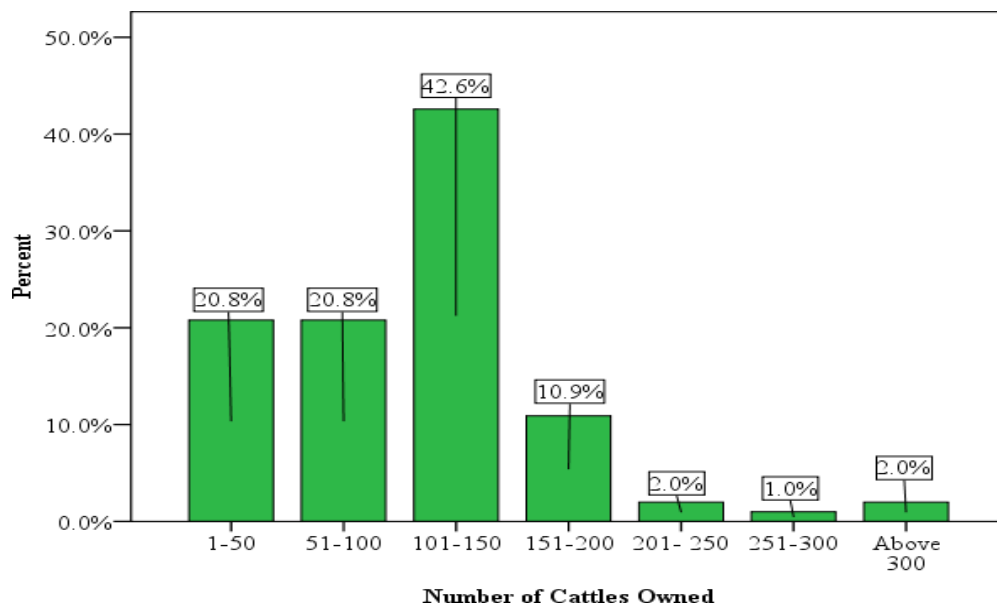


Figure 2.1. Increase in number of cattle

2.6.1.4 Unethical practices

The study revealed that unethical practices (Unethical practice (behaviour) is an action that falls outside of what is considered morally right or proper for a person, e.g. farmers and pastoralists. While criminal practice covers the law, rules, practices and procedures that apply in criminal matters) contribute to the recurring conflicts. Such practices include corrupt practices, destruction of crops and properties and hostile practice (Killing and injuring). The respondents affirmed that unethical practices fueled the natural resource use conflicts between farmers and pastoralists.

Some village leaders have been the sources of the recurrent conflicts. Table 2.4 shows that 59.6% of the respondents said that leaders receive bribes to allow pastoralists to enter their villages. From the household interview, they further uncovered that the same village leaders conspired with farmers and police officers in arresting pastoralists who have trespassed in the farms. According to these respondents, these village leaders and police use pastoralist as their source of income, thus making the situation worse for pastoralists. This also creates hatred between farmers and pastoralists. It was also reported by the respondents that pastoralists bribes to obtain the permits from district officials without prior consultation with the village authorities at their destination. This practice was also reported in Svensson (2005); Blagojević (2011) where pastoralists are accused of bribing the village leaders to get permits to settle and graze their cattle in the village without consent of the village assemblies as required by the Village Land Act No. 5 of 1999.

During FGDs it was stated that *“Livestock keepers, being relatively richer than farmers, use their economic power to win the approval of district and village leaders in their favour. As a result, clashes recur between pastoralists and farmers in such areas.”* In this view, weak governance structures associated with unethical behavior may explain recurrence of conflicts between farmers and pastoralists.

Also, destruction of crops and properties was reported to be a common practice in the study area. For example, 51.2% of the respondents (see. Table 2.4) attribute grazing on crops was among factors leading to conflicts between farmers and pastoralists. This was also supported by a key informant who described the case as follows:

One night in Kilosa District at Msowero village two friends visited my house and complained that the cattle of a pastoralist had grazed on their crops, damaging several bundles of rice they had harvested. On the following day, however, after the crop damage, the male elders met to discuss the crop damage and interviewed only the victim. The pastoralist who caused the damage was not there because he feared of farmers attack. The elders decided, after they had seen bundles of rice that had been damaged, and ordered the pastoralist to pay compensation in the form of Tshs

50 000 in cash. They informed the pastoralist of their decision, giving him one week to comply. The pastoralist sold his livestock to pay for the compensation. (Source; KIs, 2014)

2.6.1.5 Policy and regulatory deficiencies

The Land Policy in Tanzania (through the Land Act No 4 of 1999 and Village Land Act No. 5 of 1999) classifies land as: Reserved land; Village land; and General land. Reserved land is statutorily protected as national parks, land for public utilities, wildlife and game reserves and other land designated by sectoral legislation. Village land is the land, which is within the demarcated or agreed boundaries of any of Tanzania's villages. This land is under the managerial authority of the Village Councils, which are answerable for land management decisions to the Village Assembly (Mwamfupe, 2015:3, Bengesi et al., 2009).

General land is a residual category and includes all public land, which is not reserved land or village land and includes unoccupied or unused village land. The definition of General Land is ambiguous because unoccupied or unused village land is considered as "excess" and thus falls under the jurisdiction of the Land Commissioner rather than the village authorities. The seemingly unoccupied lands (village) may be important areas for seasonal livestock grazing, and other important livelihood uses (Mattee and Shem, 2006). Certainly, this ignores the fact that as the population grows this excess village land will actually be brought into use. However, this is actually the same land, which is, in most cases identified as suitable for agricultural investment.

Thus, the pastoralists occupying semi-arid areas are often subject to efforts to alienate their customary pastures and land holdings, for purposes of commercial investments or establishment of wildlife conservation areas (Mattee and Shem, 2006). Table 2.4 shows that 59.6% of the respondents affirmed that there was insecurity of land tenure which associate to land policy and 55.2% of the respondents were to support much ignoring demarcation set by them and 51.2% of the respondents affirmed that the beacons were deliberately removed. In view to this, the land policy has some deficiencies because it does not guarantee security of tenure to some users, especially smallholder groups. According to Bengesi (2014) and Bengesi et al. (2009) unsecured land tenure system in Tanzania has accounted to the underdevelopment of the land resource in the country. A secure land tenure system allows investment on land development, which could partly address most land use conflicts we observe today.

Similarly, among factors leading to the recurrent conflicts between farmers and pastoralists is the lack of security on land that rural producers subsist on (Hussein et al., 1999). Table 2.4 shows that 53.7% of the interviewees claimed that there was no specific area, which either the government of Tanzania or local government had set aside for grazing. In this case, pastoralists operate under a constrained environment to secure adequate land for their livestock.

Table 2.4. Regulatory framework (n = 203)

	Distribution	
	Frequency	Percentage (%)
Insecurity of land tenure	121	59.6
Ignore to observe demarcation	112	55.2
Beacons removed deliberately	104	51.2
Lack of specific area for grazing	109	53.7

2.6.2 *Consequences of recurrent natural resource use conflicts between farmers and pastoralists*

It is argued that farmers and pastoralists conflicts have grown, spread and intensified over the past decade hence, posing a threat to security in some countries including Tanzania (Oyama, 2014). Figure 2.2 demonstrates that the consequences of recurrent natural resource use conflicts between farmers and pastoralists include death, destruction of properties, destruction of crops, affected social service, hunger, migration, lack of peace, poverty, and economic deterioration. As observed by Wehrmann (2008) that the natural resource use conflicts can be considered as a disastrous agent on individuals as well as on groups and even to an entire nation, Figure 2.2 depicts 18.2% of respondents confirm that the consequences of conflict included loss of life for human. This finding is in line with Paaga (2013) and Benjaminsen et al. (2009) who have affirmed that many conflicts in terms of clashes between the two communities resulted into the loss of people's lives.

Besides death, recurrent conflicts between farmers and pastoralists lead to physical impairment. For example, during data collection at Mkindo village inhabited by farmers, a man was found with his arm broken due to conflict between farmers and pastoralists. In an interview he confirms; "*My arm was broken during clashes between farmers and pastoralists beside been injured there was a case filed at primary court*" He said that his arm was broken during one of the clashes between members of his village and pastoralists from the neighbouring village of Kambala inhabited by pastoralists.. Similarly, Shemdoe and Mwanyoka (2015) reported that in one of the clashes between Mkindo and Kambala villages about six people lost their lives, most of them being males. Such reported incidences have significant effect on

the households, which immediately turns to be female-headed and hence increasing family-caring burden to women.

Also, frequent conflicts between farmers and pastoralists have caused destruction of properties. Figure 2 shows that 20.2% of the respondents identified properties destruction as one of the effects of conflict. According to the information gathered from the respondents, 23.6% have reported that crops destruction were instigated by pastoralists cattle and have made farmers scared to cultivate their land because of crop destruction. Further, 4.9% of the respondents (see.Fig.2.2) said that social and extension services have been affected due to recurrent natural resource use conflict between farmers and pastoralists. The conflict has resulted into poor livestock support services such as water supplies, dips and veterinary services as well as poor provision of social services such as; schools and dispensaries located in the areas of two communities.

It is also important to note that conflicts between farmers and pastoralists have direct impact on the lives and livelihoods of those involved, Figure 2.2 shows that 8.3% of the respondents said that the recurrent conflicts between farmers and pastoralists have consequently resulted in poverty and hunger. This makes other people flee (6.9%) to search for security because there is no peace (3.9%) in the area. This argument is supported by Ukamaka et al., (2017) who argues that shocks associated with conflicts invariably impact on the livelihood of the disputants and communities at large. Abbass (2012) warned that the disharmony between farmers and pastoralists lead to constant conflict among them, and hence time to engage into productive activities is wasted.

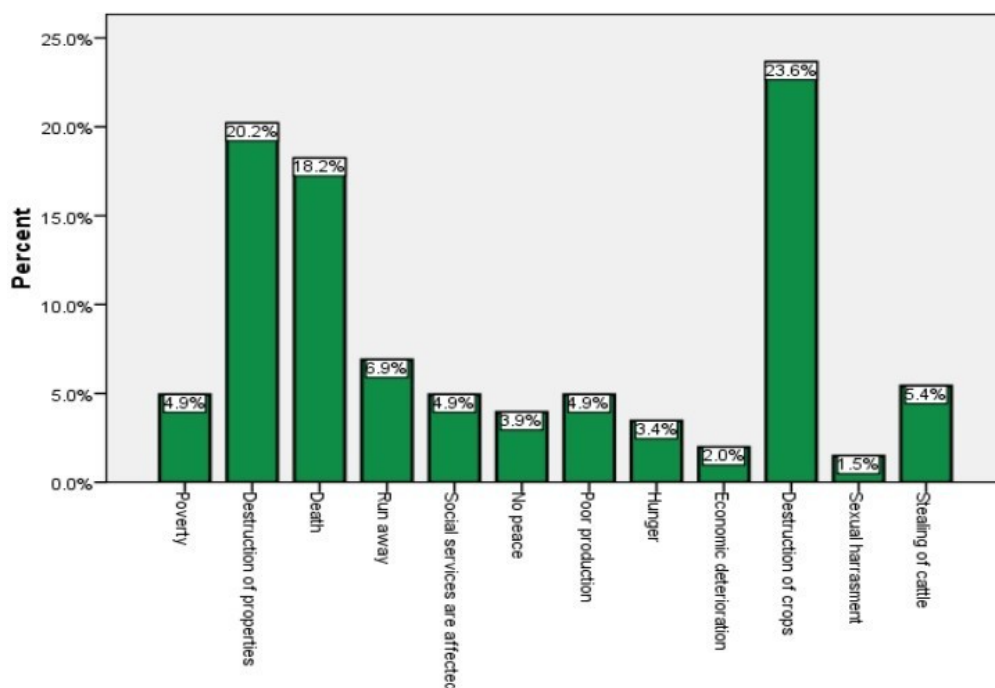


Figure 2.2. Consequences of conflicts of natural resource use between farmers and pastoralists

Table 2.5 shows that farmers (59.1%) were often the most affected by the conflicts between farmers and pastoralists because they are sedentary as affirmed by key informants; as they were settled and have nowhere else to go. On the other hand, pastoralists (31.5%) sometimes embark on raiding activities in communities and then disappear, making it difficult to track them to a particular settlement. Consequently, farmers are afraid to go to their farms and no longer practice the culture of living in the farms as they formerly did, as a result weeds outgrow crops. Thus, there is a general poor harvest because crops are not properly managed by farmers. Conflicts have therefore caused widespread poverty and insecurity in the farmers' community.

Table 2.5. Sense of insecurity (n=203)

Response	Distribution	
	Frequency	Percent
Farmers	120	59.1
Pastoralists	64	31.5
Both	19	9.4
Total	203	100.0

2.6.3 Contribution to theory

This paper has found potential drivers of recurrent conflicts between farmers and pastoralists in Kilosa and Mvomero Districts, which were socio-economic factors, environmental factors, unethical practices, and regulatory framework. The two theories namely conflict theory and conflict resolution theory framed this paper. The conflict resolution theory emphasizes solely on solving conflict through peaceful approach to effectuate durable settlement, while the conflict theory emphasizes on

solving conflict by employing coercion and power dominance to restore social order. However, this paper argues that no single solution fits all conflicts; the issue of whether to use coercive force or participative approach will always depend on the context. There are contexts, which require coercive power; others require participative and others require a combination of both coercive and participative. In this view, the application of these theories depends on the nature of the conflict. This may suggest that no single theory among the two i.e. conflict theory and conflict resolution theory can stand alone to explain a comprehensive solution of a conflict. In events where one needs an intervention it is recommended to use lenses of both theories and chose the appropriate option that most suit the context of the conflicts.

2.7 Conclusions and Recommendations

2.7.1 Conclusions

This paper explored drivers and consequences of recurrent conflicts between farmers and pastoralists. The paper observed that socio-economic factors, environmental factors, over stocking, unethical behaviour, policy and regulatory deficiencies are the key drivers of recurrent conflicts between farmers and pastoralists in Kilosa and Mvomero Districts. Therefore, the paper argues that pastoralist activities such as grazing, and search for water have a higher potential of fueling conflicts than farmers activities who are sedentary in nature. The findings show that farmers were often the most vulnerable to such conflicts for the main reason that they were in sedentary settlements. The paper observed that recurrent of such conflicts was mostly driven by the lack of security of land tenure which was affecting most of smallholder producers who depended more on it for their livelihoods. This was partly caused by policy deficiencies and contradictions which were exploited by corrupt elite at the expense of the poor farmers and pastoralists. Consequently, such conflicts were exposing local people to poverty and insecurities. Therefore, the overall impacts of these conflicts were resulting into instability and would undermine any meaningful efforts toward achieving sustainable development in the country.

Recurrent conflicts between farmers and pastoralists have brought significant impacts on both group; farmers and pastoralists. Consequently, the recurrent conflicts have resulted into major socio-economic impacts that include loss of lives and properties to both farmers and pastoralists destroyed, affected social service, hunger, migration, lack of peace, poverty, and economic deterioration.

2.7.2 Recommendations

Based on the study findings recurrent conflicts are mostly due to lack of land tenure security. The paper, therefore, recommends that government, policy makers and traditional group authority should develop a mechanism to ensure land security among users so that it motivates land owners to invest for land development.

Since policy deficiency and contradictions have resulted into unethical practices such as corruption, there is a need for the government to effectively establish a transparent and accountability committee where their obligation will be critically observing rules, regulations as far as land tenure is concern, furthermore, there should be investigation conducted by the relevant authorities such as the Prevention and Combating of Corruption Bureau (PCCB) in order to identify the source of these vices and institute legal procedures/actions against the offenders.

Although, conflicts between farmers and pastoralists were causing detrimental effects which badly affected the economic base of local communities involved, this paper recommends for government to ensure that various stakeholder such as government actors officers, village leaders, interest groups, farmers and pastoralists to ensure that the interests of these groups are accommodated to avoid further recurrence of such conflicts.

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References

- Aarts, N., & Lokhorst, A. M. (2012). *The role of government in environmental land use planning: towards an integral perspective*. Retrieved February 12, 2018, from <https://library.wur.nl/WebQuery/wurpubs/fulltext/253292>
- Abba Gana Shettima and Usman A. Tar. (2008). Farmer-Pastoralist Conflict in West Africa: Exploring the Causes and Consequences. *Information, Society and Justice*, 1(2), 163-184.
- Abbass, I. M. (2012). No Retreat, No Surrender.'Conflict for Survival between Fulani Pastoralists and Farmers in Northern Nigeria. *European Scientific Journal*, 8(1), 337-352.
- Abroulaye, S., Issa, S., Abalo, K. E., & Nouhoun, Z. (2015). Climate Change : A Driver of Crop Farmers - Agro Pastoralists Conflicts in Burkina Faso. *International Journal of Science and Technology*, 5(3), 92–104.
- Adamson, N., & King, S. (2013). Conflict Management among the Farmers and Pastoralists in Tanzania. *International SAMANM Journal of Business and Social Sciences*, 1(2), 40-50. Retrieved from <https://www.researchgate.net/publication/311934623>
- Adelakun, O. E., Adurogbangba, B., & Akinbile, L. A. (2015). Socioeconomic Effects of Farmer-Pastoralist Conflict on Agricultural Extension Service Delivery in Oyo State, Nigeria. *Journal of Agricultural Extension*, 19(2), 59-70.
- Adeoye, N. O. (2017). Land use conflict between farmers and herdsmen in parts of Kano, Yobe and Borno States of Nigeria : Nomads' viewpoints. *Ghana Journal of Geography*, 9(1), 127–151. Retrieved from <https://www.ajol.info/index.php/gjg/article/download/154660/144240>
- Amin, A. (2005). *Social Science Research, Conception, Methodology and Analysis*. Kampala: Makerere University Printery.
- Areas, P. (2003). *Biodiversity and Protected Areas. Tanzania Biodiversity and Protected Areas – Tanzania*. Retrieved November 10, 2017, from www.vub.ac.be/klimostoolkit/sites/default/files/documents/tanzania_bd.pdf

- Bengesi, K. M. K. (2014). *Assessing Impact of Biofuel Investments on Local Livelihoods in Tanzania: A case of Kisarawe, Bagamoyo and Kilwa Districts*. Retrieved March 15, 2018, from <http://www.mviwata.org/wp-content/uploads/2014/09/Study-Report-on-Biofuel-Investments-July2012.pdf>
- Bengesi, K.M.K and Abdalla, J.O. (2018). Forces Driving Purchasing Behavior of Tourists Hotels along Tourist-Agriculture Supply Chain in Zanzibar, *International Journal of Marketing Studies*, 10:(2):150-168
- Bengesi, K. M. K., Msuya, C. P., Salanga, R. J., & Mwakalobo, A. B. S. (2009). *Implication of Biofuels Production on Food Security in Tanzania*. Retrieved April 13, 2013, from http://www.actionaid.org/sites/files/actionaid/implication_of_biofuels_production_on_food_security_in_tanzania.pdf
- Benjaminsen, T. A., Maganga, F. P., & Abdallah, J. M. (2009). The Kilosa killings: Political ecology of a farmer-herder conflict in Tanzania. *Development and Change*, 40(3), 423–445. <http://doi.org/10.1111/j.1467-7660.2009.01558.x>
- Blagojevi, S. (2011). *Impact of Private Incidence of Corruption on Performance of Firms*. Retrieved January 22, 2018, from www.ef.uni-lj.si/media/document_files/events/Starebei/ICABEC_conf_2011-2.pdf
- Blench, R. (1996). Aspects of resource conflict in semi-arid Africa. *Natural Resource Perspectives*, 16(16), 1–9. Retrieved September 17, 2017, from <http://www.odi.org.uk/resources/download/2153.pdf>
- Boundless. (2016). *The Conflict Perspective*. Retrieved August 15, 2016, from <https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/sociology-1/theoretical-perspectives-in-sociology-24/the-conflict-perspective-156-974/>
- Crossman, A. (2016). *Understanding conflict theory: A brief overview*. Retrieved December 21, 2017, from <https://www.thoughtco.com/conflicttheory-3026622>
- FAO (2005). *Global Forest Resources Assessment 2005 – progress towards sustainable forest management*. FAO Forestry Paper No. 147. Rome. Retrieved November 17, 2017, from www.fao.org/docrep/008/a0400e/a0400e00.htm
- Hussein, K., Sumberg, J., & Seddon, D. (1999). Increasing Violent Conflict between Herders and Farmers in Africa. *Claims and Evidence.Development Policy Review*, 17, 97–418.
- Ikejiaku, B. V. (2009). The Relationship between Poverty, Conflict and Development. *Journal of Sustainable Development*, 2(1), 15–28.
- Jajere, I. A. (2015). Assessment of the Existing Natural Resource Conflict Management Institutions in the North East Arid Zone Of Nigeria. *IOSR Journal Of Humanities And Social Science*, 20(1), 79–85. <https://doi.org/10.9790/0837-20417985>
- Jesse, A. & Bengesi, K.M.K. (2018). Planning Interface for Social Service Delivery between Local Government Authorities and Corporates in Morogoro, Tanzania. *International Journal of Business, Humanities and Technologies*, 8(1):68-80.
- Judex, M., & Menz, G. (2003). *Modelling of land-use changes in a west african catchment*, Center for Remote Sensing of Land Surfaces, University of Bonn, 53113 Bonn, Germany. Retrieved from www.isprs.org/proceedings/XXXVI/part7/PDF/069.pdf

- Kayunze, K. A. (2008). HIV/AIDs and food security in Rufiji District Tanzania (Doctoral thesis, Sokoine University of Agriculture, Morogoro, Tanzania)
- Komba, A.M; Bengesi, K.M.K and Mwangeni, T (2018). Planning: Concept, Theories and Models, In Lifuliro, C., Zilihona, I., Mdendemi, T., Kamanzi, A., Kinyashi, G. & van Djik, T (eds.), Tanzania Planners' Handbook: A guide for Development Planning. African Studies Center, Leiden, Netherlands. Pp.31-41.
- Kothari, C. R. (2008). *Research Methodology, Methods and Techniques* (2nd ed., pp. 109-110). New Delhi: New Age International (P) Limited.
- Laiser, T. J. (2016). *Land tenure systems and conflicts in rural smallholder* (Master Dissertation, Sokoine University of Agriculture, Morogoro, Tanzania).
- Lunyelele, S.P.; Bengesi, K.M.K. & Katani, J.Z. (2016). Awareness of Peri-urban Farmers on the Concept of Climate Change: A Case of Temeke District, Dar es Salaam Region, *Journal of Environment and Earth Sciences*, 6(7):24-34
- Mancosu, N., Snyder, R. L., Kyriakakis, G., & Spano, D. (2015). Water Scarcity and Future Challenges for Food Production. *Water*, 7(3), 975–992. <http://doi.org/10.3390/w7030975>
- Massay, G. E. (2017). In Search of the Solution to farmer-pastoralist conflicts in Tanzania, SIIA Occasional Paper, 257 pp. 1-17. Retrieved January 9, 2018, from www.saiia.org.za/
- Mattee, A. Z., & Shem, M. (2006). Ambivalence and Contradiction: A Review of the Policy Environment in Tanzania in Relation to Pastoralism. Drylands Issue Paper No. 140. IIED, London, UK.
- Msuya, D. G. (2013). Farming systems and crop-livestock land use consensus. Tanzanian perspectives. *Open Journal of Ecology*, 3(7), 473–481. <http://doi.org/10.4236/oje.2013.37055>
- Muhammed, I., Ismaila, A. B., & Bibi, U. M. (2015). An assessment of farmer-pastoralist conflict in Nigeria using GIS. *International Journal of Engineering Science Invention*, 4(7), 2319–6734.
- Mung'ong'o, C., & Mwamfupe, D. (2003). *Poverty and changing livelihoods of migrant Maasai pastoralists in Morogoro and Kilosa districts, Tanzania. Research on Poverty Alleviation.*
- Mwamfupe, D. (2015). Persistence of Farmer-Herder Conflicts in Tanzania. *International Journal of Scientific and Research Publications*, 5(2), 1-8.
- Norman, A. S. (2013). Challenges of managing elections in Africa. *International Journal of Business Economics and Management Research*, 3(5), 1-7.
- Officer, W., Land, I., Forum, R., & District, I. (2016). *A Coalition of Farmers and Pastoralists ; An Alternative Paradigm to Resolving Land Use Conflicts.* Retrieved October 5, 2017, from <https://www.tnrf.org/en/content/coalition-farmers-and-pastoralists-alternative-paradigm-resolving-land-use-conflicts>
- Opiyo, F. E. O., Mureithi, S. M., & Ngugi, R. K. (2011). The Influence of Water Availability on Pastoralist's Resource Use in Mwingi and Kitui Districts in Kenya. *Journal of Human Ecology*, 35(1), 43–52.
- Opiyo, F. E. O., Wasonga, O. V., Schilling, J., & Mureithi, S. M. (2012). Resource-based conflicts in drought-prone North-western Kenya : The drivers and mitigation mechanisms. *WUDPECKER Journal of Agricultural Research*, 1(11), 442–453.
- Orindi, V. A., Nyong, A., & Herrero, M. (2007). Pastoral Livelihood Adaptation to Drought and Institutional Interventions in Kenya. Human Development Report 2007/2008, Fighting climate change: Human solidarity in a divided

- world.: *United Nations Development Programme*. Occasional Paper 54. New York.
- Oyama, S. (2014). Farmer-Herder Conflict, Land Rehabilitation, and Conflict Prevention in the Sahel Region of West Africa. *African Study Monographs*, 50, 103–122.
- Paaga, D. T. (2013). Customary Land Tenure and Its Implications for Land Disputes in Ghana: Cases from Wa, Wechau and Lambussie. *International Journal of Humanities and Social Science*, 3(18), 263–270.
- Ratner, B. D., Meinzen-Dick, R., May, C., & Haglund, E. (2013). Resource conflict, collective action, and resilience: An analytical framework. *International Journal of the Commons*, 7(1), 183–208.
- Ringo, J. J., Bengesi, K. M. K., & Mbagi, M. C. Y. (2018a). Access and Challenges of Health Facilities amongst Agro-pastoralist Communities in Handeni District, Tanzania. *Journal of Population and Social Studies*, 26(1), 153-167
- Ringo, J. J., Bengesi, K. M. K., & Mbagi, M. C. Y. (2018b). Gender Determined Roles and Under-Five Mortality among Agro-pastoralist Communities in Handeni District, Tanzania. *Journal of Population and Social Studies*, 26(3), 218-229.
- Security, F., Development, L., Office, P., & Government, L. (2007). *United Republic of Tanzania National Sample Census*. Retrieved February 12, 2018, from https://www.google.com/search?ei=o-Q9W4yJBUdGApkqGQAQ&q=United+Republic+of+Tanzania+National+Sample+Census&oq=United+Republic+of+Tanzania+National+Sample+Census&gs_l=psy-ab.3...4534.5749.0.6528.2.2.0.0.0.324.324.3-1.2.0....0...1c.1j2.64.psy-ab..0.0.0.0.. 318.hrkSL6gHGWU
- Semberya, B. Y. D. (2014). Farmers, pastoralists conflicts : Where have we failed ? Guardian Newspaper, (January). Retrieved from <http://www.ippmedia.com/frontend/?l=63745>
- Shemdoe, R., & Mwanyoka, I. (2015). Natural Resources Based Conflicts and Their Gender Impacts in the Selected Farming and Pastoral Communities in Tanzania, pp. 83–87. Retrieved September 9, 2017, from https://www.princeton.edu/~dixitak/home/PresAd_F1.pdf
- Svensson, J. (2005). Eight Questions about Corruption. *Journal of Economic Perspective*, 19(3), 19–42.
- Tonah, S. (2006). Managing farmer-herder conflicts in Ghana. *Ibadan Journal of Social Sciences*, 4(1), 35-45.
- Ukamaka, D. M., Danjuma, S. E., Mbolle, C. J., Innocent, E., & Mbadiwe, I. E. (2017). Livelihood issues in herdsman- farmers' conflict among farming communities in Kogi State, Nigeria. *African Journal of Agricultural Research*, 12(24), 2105–2115. <http://doi.org/10.5897/AJAR2017.12319>
- URT (2007). United Republic of Tanzania, National Sample Census of Agriculture, Regional Report: Morogoro Regional.
- Wehrmann, B. (2008). Land conflicts. *A practical guide to dealing with land disputes*. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH 56726 Eschborn, Germany. pp. 122.

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CHAPTER THREE

3.0 Mitigation of conflicts between farmers and pastoralists in Kilosa and Mvomero Districts, Tanzania

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Abstract

Mitigation of conflicts between farmers and pastoralists, with the intention of bringing up peace and tranquility in the community is important. Empowering farmers and pastoralists and arbitration were mechanisms used to mitigate conflicts. This paper determines mitigation strategies that would solve recurrent conflicts arising between farmers and pastoralists in Kilosa and Mvomero Districts. A sample of 203 households was used. Data were collected using interview, documentary review, and focus group discussions (FGDs). Collected data were analyzed by using IBM Statistics software. The findings show that it is effective to use a conflict resolution model which is solely based on social order in four main stages: developing expectations for win-win solutions, defining each party's interests, brainstorming creative options, and combining options into win-win solutions. The majority of the respondents affirmed that addition of alternative strategies was the approach for mitigation of conflicts. This paper suggests that various stakeholders

such as the government and civil societies should willingly practice strategies for the sake of bringing peace and harmony between farmers and pastoralists.

Key words: Conflict, farmers, mitigation, pastoralists.

3.1 Introduction

Mitigation of conflicts applies a range of strategies and activities in a situation of crisis, be it an immediate emergency or protracted crisis, to address causes of conflict and change the way those involved act and perceive the issues. It is a process through which humanitarian, recovery and development activities are reviewed for their effect on the conflict context in which they take place and their contribution to longer-term peace and stability (Norman, 2013). Mitigation of conflict refers to those actions such as arbitration, negotiation, neutralization or control of the means of pursuing either the conflict or the crisis. In addition, it is a processes which ensures conflict sensitivity so as to not fuel tensions or exacerbate violence (i.e. “do no harm”). This also leads to seeking to contribute positively to transforming the causes of conflict in the medium to long-term by altering the structural, behavioural and attitudinal aspects of conflict (Mwamfupe, 2015).

Conflict mitigation is rarely accomplished by direct action and is more frequently achieved only over long periods although the proximate aspects of conflict can sometimes be eliminated by agreement among the parties (Norman, 2013). Moreover, mitigation of conflict strategies can be used for conflict prevention as well as interventions in conflict and post-conflict situations (James, 2015).

The term conflict refers to misunderstanding, disagreement, or divergence of ideas, which result into hating each other (Mwamfupe, 2015), while mitigation is a process taken to reduce loss of life and property by lessening the impact of disasters or eliminate long-term risk to people and property from hazards and their impacts (Davidson and Wood, 2004). Implementing mitigation actions helps achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning. On the other hand, when conflict is mismanaged, it can cause great harm to a relationship, but when handled in a respectful, positive way, can provide an opportunity to strengthen the bond between conflicting groups (e.g. farmers and pastoralists) (Norman, 2013; Sendalo, 2009; Smith, 2005; Harbom and Wallensteen, 2005).

Conflict arises from differences, both large and small. It occurs whenever groups of people disagree over their values, motivations, perceptions, ideas, or desires. Sometimes these differences appear trivial, but when a conflict triggers strong feelings and reaction, a deep personal hurt is often at the core of the problem. These hurts can be as a result of feeling unsafe, insecure, a need to feel respected, valued, or a need for greater closeness and intimacy (Norman, 2013).

Mitigation of conflict among farmers and pastoralists are continuously needed in Africa, Tanzania included (Benjaminsen *et al.*, 2009; Falanta and Bengesi, 2018). Conflicts have existed for many years. In countries such as Nigeria, Kenya and Tanzania, to mention a few, farmers and pastoralists have for a long time found themselves in deadly clashes, most of which resulted into loss of lives, destruction of

property and turning their areas into war zones as they try to clinch the right to use the land (Benjaminsen *et al.*, 2009; Adeoye, 2017; Fasona and Omojola, 2005; Jones-Casey and Knox, 2011).

Conflicts between farmers and pastoralists are most conspicuous during periods of drought. In such periods, pastoralists move their herds to places from their settlements (transhumance) in search of pastures and water, and in the course of such movement animals graze on crop farms (Mung'ong'o and Mwamfupe, 2003). The increased competition for land and water resources further exacerbates everyday conflicts when they occur. For instance, when cattle destroy the crops of a subsistence farmer, it is a direct loss to the farmer's livelihood, and this may exacerbate pre-existing tensions between farmers and pastoralists, sparking broader conflict and violence. Similar examples apply for pastoralists when cattle are attacked and killed, often in retaliation for destruction of farmland (Kwaja, 2014).

Conflicts between farmers and pastoralists leave hundreds of people homeless, food insecure and others dead, following burning of houses and food crops in farms. For example, in January 2014, the conflict between farmers and pastoralists claimed 15 lives, leaving 14 people severely injured in Kiteto District in Manyara Region (Mwamfupe, 2015). Similar events have been documented in Mbarali, Rufiji, Iringa, Kilindi, Hanang and other districts (Massay, 2017). A number of measures were taken to mitigate these conflicts by government at various levels over the years. Unfortunately, these conflicts not only continue to persist, they are fast becoming a nationwide phenomenon (Michael, 2015).

Efforts towards managing, or in some rare cases, mitigating conflicts between farmers and pastoralists have yielded dismal success largely because they are based on erroneous and misplaced understanding of the conflicts. In addition, government interventions have not addressed the underlying problem of lack of security of tenure for lands being used for different activities (Norman, 2013). According to Mwamfupe (2015), the problems underlying government failure to resolve the conflicts are policy deficiencies and contradictions, inadequate capacity of the local institutions, nature of the approaches used to resolve and manage the conflicts, corruption and 'politics of the belly', and lack of coordination in resettling the herders.

Literature indicates that conflict is a normal part of any healthy relationship and they add that learning how to deal with conflict – rather than avoiding it – is crucial (Norman, 2013; Mwashu, 2016). The literature on conflict seem to profess that conflict can hardly be managed (Kasomo, 2010). They indicate few observable cases, from practical point of view, on how such conflicts have been mitigated. It is from this stand point, that there is need for stakeholder and/or the Government of Tanzania to keep on observing the essence of conflicts which have been recurring causing damage to properties and leaving other people homeless due to burning of houses (Mwamfupe, 2015; Norman, 2013). Thus, this paper aims to answer the following questions: 1) How is mitigation of conflicts between farmers and pastoralists executed? 2) What could be the approach for mitigating conflicts between farmers and pastoralists? And 3) What could be the expectations of farmers and pastoralists from mitigation of conflicts?

Therefore, the focus of this paper is to suggest strategies and approaches that would contribute to local communities' ability to mitigate conflicts particularly farmers-pastoralists conflicts. More specifically the strategies related to the changing social relationships among farmers and pastoralists, the social networks utilized in mitigating conflict, local institutions, and political governance.

The rest of the paper discusses the theoretical framework in which the Conflict Resolution Model is used to frame the theme of the study and lead into development of the key questions answered by this paper. It presents the methodology of the study including the research design and data source for this study, the results and discussion and finally the conclusion and recommendations for mitigation of conflict between farmers and pastoralists in the study area.

3.2 Theoretical Framework

This paper is guided by the Conflict Resolution Model (CRM) as propounded by Davidson and Wood (2004). The model assumes that in most cases the underlying issues of mitigation of conflicts are usually not recognized by concerned groups. Consequently, to come up with optimal solutions, one needs to go beyond the initial bargaining positions of the participants in order to explore underlying needs and concerns. This will help to come up with alternatives which adequately address them in a win-win situation. This model has four main propositions which include developing expectation that uphold win-win solutions, a clear definition of the interests of concerned groups, developing creative options and finally generating combined options which enhance win-win solutions. In this regard, the model

(CRM) was considered useful in the context of this paper due to its emphasis on peaceful mechanism and involvement of concerned parties in executing mitigation of conflicts.

A schematic form of the model is presented in Figure 3.1. In this illustration, the stage of developing expectations for win-win solution comes at the head of the model because it relates not only to individual experiences in conflict situations, but also more generally to the prevailing culture and relationship context between farmers and pastoralists.

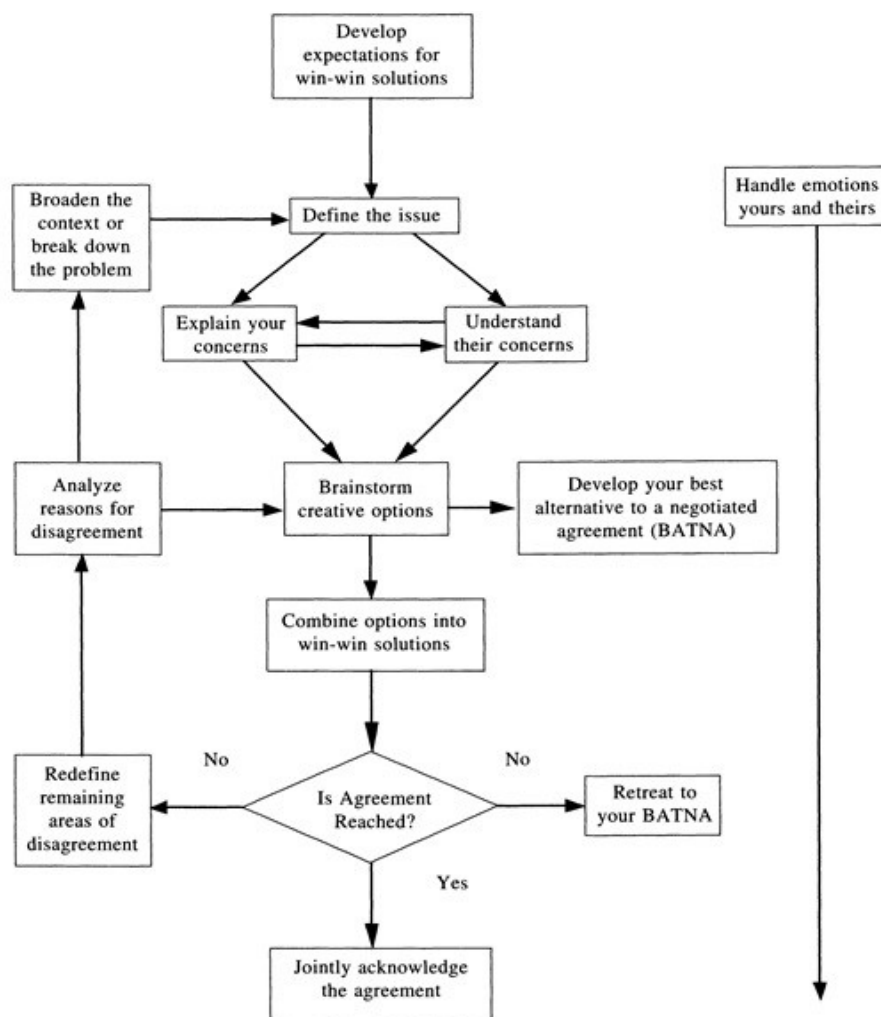


Figure 3.1: The conflict resolution model. Adopted from Davidson and Wood (2004).

3.2.1 Mitigation of conflicts between farmers and pastoralists

Conflicts between farmers and pastoralists in Tanzania have been recurring for a long time claiming lives of many innocent people and creating major economic impacts to the nation (Falanta and Bengesi, 2018; Mwamfupe, 2015). The conflicts are essentially on the scramble for resources such as areas for grazing versus areas for cultivation (Norman, 2013). As population continues to rise, and the demand for resources continues to grow there is significant potential for conflicts over natural resources to intensify. This is exacerbated by demographic pressure, inequitable access to and shortage of land and resource depletion (Mwamfupe, 2015; Benjaminsen *et al.*, 2009).

The Government of Tanzania has intervened in the situation to address the current conflicts between farmers and pastoralists in various ways such as use of standing committees or ad-hoc groups within the country or region, use of dignified leaders within the region who are perceived to be wise and adept at understanding, demarcate village lands into areas for farmers and others for livestock keepers, recommend reduction of herd sizes in order to avoid conflicts with other resource users and safeguard the environment (Mwamfupe, 2015). Despite repeated government interventions the conflict between farmers and pastoralists continues. (Smith, 2005; Harbom and Wallensteen, 2005). Hence, the need to answer the question:

What could be appropriate measures in executing mitigation of conflicts?

Answering this question will therefore lead to identification of ways and methods applied in mitigating conflicts between farmers and pastoralists. So far, the government interventions have not used strategic ways on mitigation of conflicts between farmers and pastoralists. A detailed account of strategic ways in mitigation of conflicts as to mitigate the conflicts is provided in the subsequent sections of this work.

3.2.2 Execution of mitigation of farmers-pastoralists conflicts

Understanding farmers and pastoralists relations is a key to mitigation of conflict. This will improve understanding of the proximate and underlying causes of conflict, the behavioural patterns that are most conducive to provoking or avoiding conflict and the main mechanisms by which conflict between the groups are mitigated (Mwamfupe, 2015).

The conflicts among farmers and pastoralists have been attributed to scarcity of land as large herds of cattle are forced to compete with farms in the same village land. Also literature has revealed that inefficiency of the land use planning committees accelerated the problem where land use plans did not take into consideration the needs of the natives (Mung'ong'o and Mwamfupe, 2003). Also, conflicts often erupt between farmers and pastoralists over access to land and water resources. The conflicts are essentially on the scramble for resources such as areas for grazing versus areas for cultivation (James, 2015).

A number of strategies have been identified to contribute to mitigation of conflict between farmers and pastoralists. These strategies include mediation, dialogue, and stakeholder analysis and engagement, tackling issues related to conflicts between farmers and pastoralists (James, 2015). According to Michael (2015) articulated some strategies in mitigation of conflicts such as use of police force , use of public communication campaign and establishment of a committee related to mitigation of conflicts. In line with these strategies, there should also be a holistic conflict mitigation approach and strategies around land in Kilosa and Mvomero. The approaches should focus at engaging farmers and pastoralists in particular, their institutions and making them an integral part of the solutions.

Nevertheless, factors analysed have proved dysfunctional due to the fact that conflict between farmers and pastoralists still exist and result in the two communities to live in disharmony (Mwamfupe, 2015; Mwashu, 2016; Benjaminsen *et al.*, 2009). This argument was supported also by Hussein and Mwakasangula (2010), who reported impacts of land conflict between farmers and pastoralists that were as follows: more than 400 people fled their homes in Morogoro Region after clashes, more than 31 people (most women and children) were killed and crops being damaged (Mwambashi, 2015). Therefore, in this case, the paper also aims at proposing alternative mechanisms in combating conflicts between farmers and pastoralists in the study area by answering the following question:

What could be the approach for mitigating conflicts between farmers and pastoralists?

The answer to this question will help to show the recommended and accepted approach in mitigating conflicts between farmers and pastoralists in the study area. Through such recommended approach in mitigation of conflict the two communities will identify appropriate mechanisms in resolving the said conflicts and strengthening the fragile relationships thus creating peace and harmony in Kilosa and Mvomero Districts.

3.2.3 Significance of mitigation of conflict between farmers and pastoralists

In recent decades farmers-pastoralists conflicts in many parts of Sub-Saharan Africa have escalated into widespread violence, loss of property, massive displacement of people and loss of lives (Hussein *et al.*, 2000). This situation has been caused by increasing pressure on resources and decreasing efficiency of traditional conflict-management mechanisms (James, 2015).

In Tanzania, the government has on several occasions made efforts to address the conflicts involving farmers and pastoralists (Mwamfupe, 2015). Despite these efforts by the government the conflicts have been escalating and the ensuing consequences are becoming socially and economically unbearable (Falanta and Bangesi, 2018). Literature asserted that part of the reasons for the persistence of farmer and pastoralists conflicts is in the way the conflicts mitigation is being handled. For example, Mwashia (2016) and James (2015) echoed that the use of excessive force involving the police is not only unsustainable but also deepens the hatred between the conflicting parties. In view of this, this study aims at answering the following question:

What could be the expectations of farmers and pastoralists from mitigation of conflicts?

The answer to this question will provide expectations to farmers and pastoralists from mitigation of conflict and planning for enhancing peace and harmony in the two communities. This will help mitigation of conflict to analyze appropriate mechanisms on bringing together farmers and pastoralists as one community.

3.3 Methodology

3.3.1 Description of the study area

This study was conducted in Kilosa and Mvomero districts of Morogoro Region, in Tanzania because Kilosa and Mvomero Districts have similarities in terms of weather, agriculture, The main economic activity in both districts is crop production and livestock keeping (URT, 2005). Kilosa and Mvomero districts are two of the seven [districts](#) of [Morogoro Region](#) of [Tanzania](#). Four villages were purposively selected for the study Rudewa and Msowero villages in Kilosa District, and Hembeti and Mhonda villages in Mvomero District (Table 3.1). The selection of the villages was based on the fact that these were the most affected by natural resource use conflicts between farmers and pastoralists in Tanzania (Mwamfupe, 2015).

3.3.2 Research design, sample size and sampling procedure

This study adopted a cross-sectional research design whereby data were collected at a single point in time (Bailey, 1998; Bryman, 2004; Zheng, 2015). This design was used because of two main reasons. First, the information gathered from the

respondents and documentary review represents the existing situation at the time of the study (Carrie, 2007) and the second reason is based on Amin's (2005) observation that the design allows collection of data of given variables at a given point in time. This ensures that all the data required were collected within a short period of time, despite a relatively large sample of respondents.

The sample size for the study was 203 households. This was obtained through proportionate stratified sampling. Through this technique, four villages (Table 3.1) were sampled. A proportion for each village was calculated by dividing the total number of village households to the overall total households for all villages. The selected sample was considered relevant since all villages had the same interest, values and traditional practices (Ringo *et al.*, 2018). The unit of analysis for this study was the household for both farmers and pastoralists in Kilosa and Mvomero Districts. Using proportionate sampling 103 and 100 respondents were selected from Kilosa and Mvomero respectively to reduce uncertainty.

Table 3.1: Number of selected respondents per village

District	Village	Total Population (2012 census)	Number of households per sector		Total No. of Households selected
			Farmers	Pastoralists	
Kilosa	Rudewa	18,352	38	30	68
	Msowero	29,361	40	32	72
Mvomero	Hembeti	21,057	10	17	27
	Mhonda	20,354	15	21	36
Total		89,124	103	100	203

3.3.3 Data collection and analysis

Primary data were collected using both qualitative and quantitative techniques. Qualitative data collection methods comprised of interviews with 10 government officials including Village Executive Officers (VEOs), Ward Executive Officers (WEOs), Village Chairpersons, Ward Councilors, Extension Officers, Division Officers, and members of ward land tribunals as key informants, and focus group discussions (FGDs) with farmers as well as pastoralists. Three FGDs were conducted. The first FGD comprised farmers, the second one included pastoralists and the third one was a mixture of farmers and pastoralists with each group comprising seven to ten respondents gathered together which helped to create a relationship between the participants themselves and between them and the researcher as a moderator and to avoid bias. Their cooperation was sourced through traditional, local government and religious leaders. Interview schedules were used to guide key informant interviews and focus group discussions. Face to face interviews were used to collect quantitative data from farmers and pastoralists, through the use of a questionnaire. This was carried out to clarify issues arising from other data collection methods.

Secondary data were collected through existing documents relevant to the conflicts between farmers and pastoralists. Data were obtained from various sources such as Government documents including the livestock and agricultural officers at Dakawa and Kimamba A guidelines, Acts such as Land Act No. 4 (1999). All these provide for the machinery to hear and determine all disputes, actions and manner of proceedings concerning land and By-laws related to the conflicts between farmers

and pastoralists which impose legal sanctions for the farmers and pastoralists who would fail to comply with the laws.

Qualitative data were analyzed using content analysis whereby a combination of elements of analysis was employed to come up with information or themes. The identified themes were discussed in detail with some quotations from the key informants' and interviews. FGDs were employed to explore the meanings of survey findings that cannot be explained statistically, also to provide an insight into different opinions among different parties involved in the change process thus, enabling the process to be managed more smoothly.

In this regard, the recorded components of discussion with the respondents were broken down into small units of themes to synthesize meaning, values and attitudes. On the other hand, quantitative data were analyzed using IBM SPSS Statistics for windows version 22.0 and results were presented by descriptive and inferential statistics.

3.4. Results and Discussion

This paper answers three questions: a) What could be appropriate measures in executing mitigation of conflicts? b) What could be the best approach to mitigation of conflict between farmers and pastoralists? and c) What could be the expectations of farmers and pastoralists from mitigation of conflicts?

3.4.1 Measures in executing mitigation of conflicts

Mitigation of conflict is conceptualized as the methods and processes involved in facilitating the peaceful ending of [conflict](#) and [retribution](#) (Forsyth, 2009). Committed group members attempt to resolve group conflicts by actively communicating information about their conflicting motives or ideologies to the rest of the group and by engaging in collective [negotiation](#) (Roberts *et al.*, 2009). The concept of mitigation of conflicts can be thought to encompass the use of non-violent resistance measures by disagreed parties in an attempt to promote effective resolution. This paper has come up with some measures suggested from the study area that can be used for mitigation of conflict.

3.4.1.1 Establishing pasture land

Pasture land in the narrow sense comprises enclosed tracts of farmland, set for grazing animals such as cattle, sheep, goats, donkeys. The findings in Table 3.2 show that 69 % of the respondents affirmed that establishing pasture land will minimize the migration of people with their herds in the search for water and pasture. Lugoe (2011) echoed the idea that the major reason behind the migration of people with their herds is the search for water and pasture, which of late has been necessitated by droughts and poor climate change adaptation options available to pastoralists. In this regard, if and when these resources are available, in other words when established pasture then pastoralists should settle down, look after their stocks and enjoy their livelihoods based on agro-pastoralism in one place. It would then remain for the land administration system to provide tenure security as it should to all citizens in accordance with the Constitution and the National Land Policy (Mwasha, 2016).

3.4.1.2 Regulating the number of animals kept

Results in Table 3.2 depict that 53.7% of the respondents declared that reducing the number of animals would minimize conflict between farmers and pastoralists by maintaining proportional number of cattle herds as stipulated by national campaigns that a pastoralist should have between 10-100 cattle, goats, sheep and donkeys (Olengurumwa, 2016). This has also been suggested in the National Livestock Policy which emphasizes on the importance of value addition in order to access competitive markets and to prolong shelf-life of livestock products. More importantly, Tanzania has 88.6 hectares, excluding national waters, of which 60% is suitable for rangeland and pastoralism with the capacity of carrying 20 million livestock units, yet pastoralists do not access those resources (URT, 2015). Failure to allocate sufficient land for grazing and pastoral activities has been the main cause for mobile pastoral communities, which in turn produce endless clashes between pastoralists and other land users mainly farmers. This study has found out that despite the Government efforts to allocate land for grazing and pastures there is no clear and well spelled out connection between what is planned and what is implemented.

3.4.1.3 Controlling migration of other ethnic groups

Human migration is the movement by people from one place to another with the intention of settling, permanently or temporarily, in a new location. In the case of pastoralists, they migrate to other places after being affected by chronic drought which compels them to look for pasture and water. Table 3.2 shows that 63.1% of the respondents declared that there is a need to control migration of other ethnic groups

by accelerating a conducive environment for them to settle either permanently or temporarily without causing conflicts. One of the KIs stated that *migration of ethnic groups has caused conflicts to the locals by grabbing their land forcefully such as pastoralists who migrate with their herds invading land in search of pasture and water without any consultation. As a result conflicts emerge.* They further declared that *the conflicts are essentially on the scramble for resources such as areas for grazing versus areas for cultivation* (Key informant 1, Rudewa village, September, 2015).

Therefore, there needs to be proper land distribution which is critical due to the increase in population, and increased development activities among the people. So the farmers, pastoralists and other people would live in peace and harmony (Norman, 2013).

3.4.1.4 Guaranteed water rights for farmers and pastoralists

Competition for resources such as water between farmers and pastoralists is a major concern. The results in Table 3.2 depict that 53.2% of respondents affirmed that there should be guaranteed water rights for farmers and pastoralists in all seasons by ensuring improved access to reliable water supplies for livestock development through promotion of small-scale rainwater harvesting, boreholes and dams. Similarly, scholars declared that needs of pastoralists and agro-pastoralists in terms of water, pasture and rangeland infrastructure must be identified in a participatory manner, and land to be used by pastoralists and agro pastoralists must be demarcated

and allocated accordingly (Shem *et al.*, 2005). This will minimize conflict between farmers and pastoralists due to scramble for resources.

Furthermore, during the FGDs it was mentioned that digging of water holes and wells in grazing land for areas subjected to water conflicts between farmers and pastoralists or with similar characteristics like those of Kilosa and Mvomero Districts, can highly contribute to sustainable peace and allow people to engage in development activities. Consequently, in the land administration sphere, the protection of pastoralists' rights in the cases comparable to the study area is probably better served by water rights than by land rights (Msuya, 2009).

Table 3.2: What measures should be executed for mitigation of conflict? (n=203)

Response	Distribution	
	Frequency	Percentage
Establish pasture land	138	69.0
Regulating number of animal to keep	109	53.7
Controlling migration of other ethnic groups	128	63.1
Guarantee water rights for farmers and pastoralists	108	53.2

3.4.2 Approaches for mitigation of conflict

3.4.2.1 Empowering of farmers and pastoralists in mitigation of conflicts

The results shown in Figure 3.1 show that 72.9% of the respondents declared that there should be empowerment of farmers and pastoralists in mitigation of conflicts all the time within the study area in terms of skills in the aspect of good farming without encroaching others land and good ways on keeping livestock animals without disturbing others, making decision in terms of solving conflicts between

farmers and pastoralists and financial support. The actors for such empowerment should be government organs such as Ward Executive Officers (WEOs), Village Executive Officers (VEOs), Traditional leaders such as *Laibon* in the Maasai set up, and who will act as moderators of empowerment of farmers and pastoralists to mitigation of conflicts. For the reason that, facilitation helps the two parties to come together and mitigate problems by themselves in the stage of pre-conflict to defuse the conflict in time and avoid the problem from escalating grow to bring more harm, this strategy has been applied in Mozambique in solving land disputes and it achieved a high level of success (FAO, 2004).

In line with CRM the empowerment of farmers and pastoralists in mitigation of conflict proved to be important because they explain concerns, needs, and interests clearly but not provocatively. The likelihood of a satisfactory outcome is improved when each person feels listened to and valued (Egan, 1986).

3.4.2.2 Arbitration

As shown in Figure 3.1, 72.4% of the respondents affirmed that arbitration (mediation) of conflict between farmers and pastoralists seemed to be an effective way since it reduced backlogs and it seemed to satisfy the parties more than judicial judgments. The FGDs participant affirmed that having arbitration in mitigating conflicts between farmers and pastoralists can bring peace and tranquillity between the two communities because it helps them to agree to an acceptable solution without going to court where it may take a long time to get judgement which on the other hand is costly. This kind of strategy (arbitration) is used in Norway in solving land conflicts in the mining sector. It proved positive and therefore, the Ministry of

Environment in Tanzania proposed a new Building and Planning Act 2003 whereby mediation strategy of dispute resolution was suggested (Msuya, 2009).

3.4.2.3 Involving Non-Governmental Organizations (NGOs) in the study area

Results in Figure 3.1 show that 87.2% of the respondents declared that involvement of NGOs as an actor contributes to strategies in mitigation of conflicts between farmers and pastoralists, by facilitating, sensitizing the impact of conflicts, and opening dialogue between the two communities. When natural resources are well managed conflicts are minimized for instance in Cambodia, human rights organisations and international development organisations like LICADHO and LWF contribute in solving land disputes (Schwedersky, 2010). In Mufindi and Kongwa Districts, NGOs like NLUPC and DONET contribute in land conflict resolutions by facilitating production of land use plans as a way of bringing sustainable solution in land conflicts. If land conflicts will be handled well and NGOs are present, there would be peace for both farmers and pastoralists because NGOs will play their role of stabilizing peace and harmony between the two groups. All land problems including compensations, land tenure and poor governance will be solved (URT, 2013).

Furthermore, NGOs have developed a wide range of conflict prevention and resolution activities including monitoring conflict and providing early warning of new violence; opening dialogue between adversarial parties; playing a direct mediating role; strengthening local institutions for conflict resolution; and helping to

strengthen the rule of law and democratic processes in countries affected by violent conflict (Söderström, 2008).

Some KIs admitted that NGOs facilitate up to date extensive fact-finding missions, engage in dialogue with a wide range of groups involved in conflicts, mapping out strategies for defusing conflict and galvanizing action by national governments and international organisations to help stabilize tense situations. Therefore, NGOs have been accepted to play an important role in mitigation of conflict through their ability to build inter-communal links, facilitate reconciliation and address the root causes for conflicts.

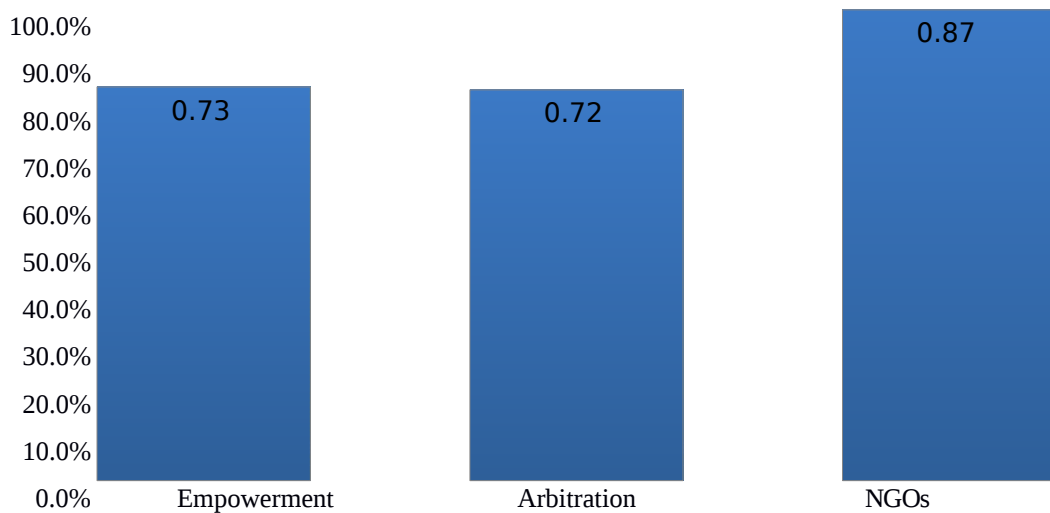


Figure 3.2: Approaches for mitigation of conflicts

3.4.3 Expectations of farmers and pastoralists from mitigation of conflict

3.4.3.1 Increase participation and creativity among the two communities

According to the results in Table 3.3, 84.7% of the respondents declared that the increase of participation and creativity among the two communities in mitigation of

conflicts will enable them to express their concerns, vision, and worry hence eliminating hatred and enmity between themselves. This will enable them to reach compromise between the conflicting parties and attempt at reaching a mutually acceptable solution. Both parties give up something in order to reach a decision and leave with some degree of satisfaction for the sake of maintaining the relationship among the involved parties.

KIs affirmed that “when conflict is handled in a respectful and positive way, conflict provides an opportunity for growth, ultimately strengthening the bond between two people. By learning the skills of mitigation of conflicts successfully, you can keep your personal and professional relationships strong and growing.

Literature advocates the increase of participation as a way to reach a point of resolving conflict between farmers and pastoralists. On the other hand, the community participation in mitigation of conflict activities is encouraged and should draw upon and strengthen local capacities (Msuya, 2009). URT (2006) also reported that ideally, decentralization provides an opportunity for much more active participation of local communities in decisions with direct impact on their livelihoods. It also provides opportunities for district authorities to respond more effectively to the needs and aspiration of their constituents, through the use of more participatory planning approaches.

3.4.3.2 Having peace and harmony for both farmers and pastoralists

The results in Table 3.3 indicated that 98.0% of the respondents are of the opinion that having peace and harmony for both farmers and pastoralists through mitigation of conflict will make the two communities to share resources, establish friendship, have exchange visits, exchange goods and build social solidarity. Engaging all these will eliminate conflicts between farmers and pastoralists because there would be social co-existence among them.

Based on FGDs articulation that if peace and harmony prevailed among farmers and pastoralists there would be close relationship hence, conflicts will be rare. This impression is supported by Mwamfupe (2015) that at the local level where farmers and pastoralists live village leadership has the responsibility of maintaining peace and security. Lugoe (2011) reported that cultural neighbourhood describes two groups that are ethnically and culturally different but live in the same community or geographical location and engage in peaceful interactions such as trade, whilst occasionally engaging in competition and mitigation of conflict. However, although conflict is inevitable, especially when working in complex environments, yet with proper mitigation measures, conflicts can be channeled in positive and constructive ways to prevent violence and decrease deep-rooted tensions consequently the two groups will harmonize each other in peace and tranquility (Davidson and Wood, 2004).

3.4.3.3 Create strong teamwork and cooperation

Results in Table 3.3 reveal that 96.6% of the respondents articulated that having

mitigation of conflict procedure in the study area will create strong teamwork and cooperation which will strengthen the relationship between farmers and pastoralists, because farmers and pastoralists will eventually dialogue together, be able to exchange feelings, discuss and mitigate issues together and arriving at mutual decisions together. Scholars reported that the two groups have for a long time found themselves in deadly clashes, most of which resulted in the loss of lives, destruction of property and turning the areas into war zones, as they try to clinch the right to use the land (Benjaminsen *et al.*, 2009; Adeoye, 2017; Fasona and Omojola, 2005; Jones-Casey and Knox, 2011). Therefore, having mitigation of conflict in the areas will enhance the relationship among the two groups to have the spirit of co-existence and mutual respect to one another and acting together for common good.

The KIs added that *if mitigation of conflict is done in successful ways the two groups (farmers and pastoralists) who have been in conflict for too long would come together and share their needs. The needs referred to are to feel secure, protected, a need to feel appreciated and respected, or a need for greater closeness and self-assurance, there would be no conflict between farmers and pastoralists.*

According to Norman (2013), cooperation and coordination between ranges of participants can draw on the strengths of each and help overcome the limitations between farmers and pastoralists. Therefore, having teamwork and cooperation between farmers and pastoralists would eventually bring peace and harmony.

Table 3.3: Outcome of Mitigation of conflict (n=203)

Distribution

Response	Frequency	Percentage
Increased participation and creativity among the two communities	172	84.7
Having peace and harmony for both farmers and pastoralists	199	98.0
Create strong teamwork and cooperation	196	96.6

3.4.4 Contribution to the conflict resolution model

The model upholds social order in four main stages: developing expectations for win-win solutions, defining each party's interests, brainstorming creative options, and combining options into win-win solutions. This paper suggests that all the stages upheld by the model will not stand alone to explain a comprehensive solution of a conflict. In the event that there is need for intervention it is recommended to use alternative strategies and measures as an extension of the model to strengthen strategies upheld such as empowering the conflicting parties through imparting skills on mitigation of conflicts, involving NGOs around so as to sensitize the impact of conflicts. More also, increase participation and creativity among the conflicting groups and create strong teamwork and cooperation which will reinforce the relationship between farmers and pastoralists. In line with additional strategies the paper has suggested that the conflict resolution model would therefore be useful in addition to strategies found in the area of study to bring harmony in mitigation of conflict.

Importantly, the overall strategy is through increasing control of resources by beneficiaries (farmers and pastoralists), providing a wider choice in service providers to decrease competition of natural resource based, ensuring that resource allocations

are more transparent and equitable, and integration with existing government financing and planning systems to ensure sustainability, and avoid un-harmonised.

3.5 Conclusions and Recommendations

3.5.1 Conclusions

This paper came up with strategies in mitigation of conflict between farmers and pastoralists. The paper observed that the strategies for mitigation of conflict were contributors to peace and harmony between farmers and pastoralists due to recurrence of conflicts between the two groups.

The recurrence of conflict was associated with competition for natural resources such as pastures and water. Therefore, the paper perceived that, in order for the two communities to be able to live together in peace and harmony, there should be mitigation of conflicts using ways that have worked elsewhere.

The thesis suggests comprehensive strategies for mitigation of conflict between farmers and pastoralists which will involve establishing pasture land and keeping minimize cattle into manageable sizes. Facilitating favourable atmosphere for farmers and pastoralists to settle down and improve access to reliable water supplies for livestock is another strategy. Additionally, the thesis observed that the approach for mitigation of conflict between farmers and pastoralists would be to empower farmers and pastoralists to come together and mitigate problems facing them, having arbitration, a form of alternative dispute resolution and involving NGOs such as Parakuiyo Pastoralists Indigenous Community Development Organisation (PAICODEO), Legal and Development Consultants Limited (LEDECO) for the sake

of facilitating, sensitizing the impact of conflicts and opening peaceful dialogue between the two communities.

Therefore, engaging all these strategies will eliminate conflicts between farmers and pastoralist because there would be social co-existence among them. These conclusions have relevant implication to CRM in several ways such as developing expectation and combining acknowledgement between farmers and pastoralists. However the CRM did not work because conflicts between the two parties still exist.

From the study, this thesis shows that the recommended measures for mitigation of conflict that are propounded by government and various stakeholders including civil societies are important for the mitigation of conflict. In this study, it has been noted that farmers and pastoralists are just as other organs, need to utilize the potentials and comprehensive strategies in mitigation of conflicts.

3.5.2 Recommendations

The Government of Tanzania should not underestimate its own potential if it wants to maintain peace and tranquility between famers and pastoralists. The paper recommends that the government, through stakeholders and civil societies, should adopt strategies for mitigation of conflict between farmers and pastoralists stipulated in this thesis such as establishing pasture land, regulating number of animals kept, controlling migration of other ethnic groups and guaranteed water right for farmers and pastoralists to bring up peace and harmony between farmers and pastoralists.

Moreover, the paper recommends that the government should engage fully in establishing specific areas for pastures for pastoralists and land for farmers to minimize clashes between the two groups thereby creating a conducive environment for farmers and pastoralists to settle down, without ignoring improved access to reliable water supplies for livestock as well as farmers.

This paper recommends that the government and interested stakeholders should ensure that availability of alternative mechanisms such as increased participation and creativity in solving such conflicts between farmers and pastoralists are equally important so as to create a strong teamwork and cooperation which would reinforce the relationship between the conflicting groups.

This paper further recommends that, for the sake of having peace, harmony and tranquility; there should be an increase of participation and creativity among the two communities in mitigation of conflicts so as to express their fear and vision, worry, eliminate hatred and enmity between themselves. Further to that, more studies on determining factors for adaptation of the strategies on mitigation conflicts between farmers and pastoralists are recommended in order to enable interventions, which will improve adaptive capacity among the local communities including farmers and pastoralists.

References

- Adeoye, N. O. (2017). Land use conflict between farmers and herdsmen in parts of Kano, Yobe and Borno States of Nigeria: nomads' viewpoints. *Ghana Journal of Geography* 9(1): 127–151.
- Amin, A. (2005). *Social Science Research, Conception, Methodology and Analysis*. Kampala: Makerere University Printery.
- Bailey, K. D. (1998). *Methods of Social Research*. (4th Ed.), the Free Press, New York. 587pp.
- Benjaminsen, A., Maganga, F., Moshi, J. and Abdallah, H. (2009). The Kilosa killings: Political. ecology of farmer-herder conflict in Tanzania. *Development and Change* 40(3): 423-455.
- Bryman, J. (2004). *Social Research Methods* Bureau of Statistics, Dar es Salaam. *Bulleting Ankel Niehof* 20(2): 1-7.
- Carrie, W. (2007). Research Methods. *Journal of Business and Economic* 5(3): 65-71.
- Davidson, J. and Wood, C. (2004). A Conflict Resolution Model. *Theory into Practice* 43(1): 6-13. [<http://www.jstor.org/stable/3701559>] site visited on 09/11/2018.
- Egan, G. (1986). *The Skilled Helper: A Systematic Approach to Effective Helping* (3rd ed.). Monterey, CA: Brooks/Cole. 392pp.

Falanta, E.M. and Bengesi, K. M. K. (2018). Drivers and consequences of recurrent conflicts between farmers and pastoralists in Kilosa and Mvomero Districts, Tanzania. *Journal of Sustainable Development* 11(4): 13-26.

FAO (2004). The State of food insecurity in the world. monitoring progress towards the world food summit and millennium development goals.

Fasona, M. J. and Omojola, A. S. (2005). Climate change, human security and communal clashes in Nigeria. paper at international workshop in human security and climate change, Holmen Fjord Hotel, Oslo Oct. 21-23, 2005.

Forsyth, D. R. (2009). *Group Dynamics* (5th ed.). Boston, MA: Wadsworth Cengage Learning.123pp.

Harbom, L. and Wallensteen, P. (2005). “Armed conflict and its international dimensions, 1946-2004”, *J. Peace Res.* 42: 5-17.

Hussein, A. and Mwakasangula, E. (2010). Report on environmental problems and conflicts between farmers and pastoralists in Kilosa District.

Hussein, K., Sumberg, J. and Seddon, D. (2000).Increasing violent conflict between herders and farmers in Africa: Claims and Evidence. *Development Policy Review* 17: 397–418. <http://doi.org/10.1111/1467-7679.00094>.

James, H. (2015). Analysis of pastoral and farmers land conflict in Tanzania: a case study of Arumeru District. A Dissertation Award degree of Master of Science of Human Resource Management at Mzumbe University. 86pp.

Jones-Casey, K. and Knox, A. (2011). Farmer-herder conflicts in mali: Planning land rights at the heart of development. Focus on Land Africa [www.focusland.com] site visited on 6/7/2014.

Kasomo D. (2010). The position of African traditional religion in conflict Prevention. *International Journal of Sociology and Anthropology* Vol. 2(2): 023-028.

Lugoe, F. (2011). Aligning and harmonizing the livestock and land policies of tanzania. The Economic and Social Research Foundation (ESRF). Paper No. 35.

Massay, G. E. (2017). In search of the solution to farmer-pastoralist conflicts in Tanzania, SIIA Occasional Paper, 257. pp. 1-17. [www.saiia.org.za/] site visited on 9 January, 2018,

Michael, M. S. (2015). Assessment of sustainability of strategies for management of conflict between farmers and pastoralists over land use in Makomelo Village, Igunga District, Tanzania. A Dissertation for Award degree of Master of Science in Agricultural Education and Extension of Sokoine University of Agriculture. Morogoro, Tanzania. 845pp.

Msuya, J. A. (2009). Analysis of pastoralists and farmers in northern part of Tanzania from land administration perspective; Netherlands.

Mung'ong'o, C. and Mwamfupe, D. (2003). "Poverty and changing livelihoods of migrant Maasai pastoralists in Morogoro and Kilosa Districts of Tanzania". Research Report No.03.5, REPOA. Mkuki and Nyota Publishers. Dar es Salaam.

Mwambashi, E. R. (2015). Assessing the impact of land conflict between Farmers and Pastoralists in Tanzania: A case of Ulanga District Council. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award of Master's Degree on Public Administration of Mzumbe University. 98pp.

Mwamfupe, D. (2015). Persistence of Farmer-Herder Conflicts in Tanzania. *International Journal of Scientific and Research Publications*, 5(2).

Mwasha, D. I. (2016). Farmer-pastoralist conflict in Kilosa District, Tanzania: A climate change orientation. a dissertation submitted in a partial fulfilment of the requirements for the Degree of Master of Arts in Rural Development of Sokoine University of Agriculture. Morogoro, Tanzania. 89pp.

Norman, A. S. (2013). The challenges of managing elections in Africa. *ZENITH International Journal of Business Economics and Management Research* 3(5): 001-007.

Olengurumwa, P. O. (2016). An assessment of the Tanzania livestock policy of 2006 and its impact on the livelihoods of pastoral communities in Tanzania. Master of research and Public Policy Dissertation for Award Degree at University of Dar es Salaam. 128pp.

Ringo, J. J., Bengesi, K. K. M. and Mbago, M. C.Y. (2018). gender determined roles and under-five mortality among agro-pastoralist communities in Handeni District, Tanzania. *Journal of Population and Social Studies* 26(3): 195 – 206
DOI: 10.25133/JPSSv26n3.014.

Roberts, A., Ash, B. and Timothy, G. (2009). Civil resistance and power politics: The experience of Non-violent Action from Gandhi to the Present. Oxford, UK: [Oxford University Press](#). 58pp.

Schwedersky, L. H. (2010). Mechanisms of land conflict resolution in Rural Cambodia. Bachelor Thesis, for Award Degree at Humboldt-Universität zu Berlin Geographisches Institut. 125pp.

Sendalo, D. S. C. (2009). Review of land tenure policy implications on pastoralism in Tanzania. Ministry of Livestock Development and Fisheries. Dar es Salaam Tanzania.

Shem, M. N., Mtengeti, E. and Mutayoba, K. S. (2005). Development of livestock management and policy strategies for pastoralists in Kilosa, Morogoro Region, Tanzania Final Report for AICAD.

Smith, D. (2005). Trends and causes of armed conflict, in David B, Martina F, Beatrix S (eds). Bergh of handbook for conflict transformation, Berlin, [\[http://www.berghofhandbook.net/article/smith_handbook.pdf\]](http://www.berghofhandbook.net/article/smith_handbook.pdf) site visited on 15/08/2016.

Söderström, J. (2008). NGO Conflict Resolution Efforts – Drop in the Ocean or Drop that Ripples the Ocean? A Field Study in Georgia of the Effect of NGO-Strategy on the occurrence of Ripple Effects. Department of Peace and Conflict Research Uppsala University. 78pp.

URT (2005). Farming systems and crop-livestock land use consensus: Tanzania Perspectives. [\[http://www.scirp.org/journal/PaperInformation.aspx\]](http://www.scirp.org/journal/PaperInformation.aspx) site visited on 24/05/2016.

URT (2013). National Agriculture Policy. Ministry of Agriculture, Food Security and Cooperatives, Dar es Salaam, Tanzania.

URT (2006). Ministry of Livestock Development. National Livestock Policy, mimeo, Dar es Salaam.

URT (2015). Livestock Modernization Initiative. Ministry of Livestock and Fisheries

Development. Government Printer: Dar es Salaam

Zheng, M. (2015). Conceptualisation of cross-sectional mixed methods studies in health science: A Methodological review. *International Journal of Quantitative and Qualitative Research Methods* 3(2): 66-87.

CHAPTER FOUR

4.0 Role of Formal and Informal Institutions in Mitigating Conflicts between Farmers and Pastoralists in Kilosa and Mvomero districts, Tanzania

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Abstract

Recurrence of conflicts between farmers and pastoralists is a threat to the welfare of the society at large. This paper examines the role of formal and informal institutions in mitigating conflicts between farmers and pastoralists in Kilosa and Mvomero Districts. A sample of 203 farmers and pastoralists was chosen using a simple random sampling technique. Data were collected using a questionnaire survey, interview, FGDs and documentary review. Collected data were analyzed both qualitatively and quantitatively using content analytical and binary logistic regression approaches. Study findings show that there was involvement of formal and informal institutions as a rule of the game in mitigating conflicts between the two communities. What is missing is working in cooperation with one another. As a consequence, there was instability and disharmony between farmers and pastoralists in the study area. Drawing from the institutional theory based on social relationship, this paper recommends that formal and informal institution can jointly work together in mitigating conflicts between farmers and pastoralists. This implies that no single application between formal and informal institutions, can stand alone to mitigate conflicts, but rather a combination of the two can be an appropriate way to mitigate conflicts between farmers and pastoralists. Various stakeholders such as the government actors officers, village leaders, interest groups, farmers and pastoralists should jointly work together to mitigate conflicts.

Key words: Mitigation of conflicts, formal institutions, informal institutions, farmers, pastoralists.

4.1 Introduction

Conflicts are generally relational disputes between two or more parties, for example between farmers and pastoralists. Different scholars have reported the tension between farmers and pastoralists in different parts of the world including Africa (Massay, 2017; Semberya, 2014; Benjaminsen *et al.*, 2009; Areas, 2003; Abba *et al.*, 2008). Despite conflicts becoming a common occurrence and several efforts made to avert the situation, conflicts are reported to recur (Falanta and Bengesi, 2018). A conflict, as defined by sociologists, is a social stance in which at least two parties are involved and whose origins are differences either in interests or in the social position of the parties (Nzogela, 2014). Therefore, this paper takes conflicts involving inter-ethnic groups as pastoralists (Maasai) against the crop cultivating ethnic groups (Wasagala, Wakaguru, Wasukuma and Wabena). The dispute arises from crop damages caused by livestock and competition over land resource use.

The recurrence of conflicts between farmers and pastoralists in Tanzania is not a new manifestation; it is mainly driven by scarcity of land resource to cater for both groups (Falanta and Bengesi, 2018; Massay, 2017). Along the same line, other scholars have argued that the two groups have been fighting for a long time in an attempt to get access and user rights to the land which in turn has resulted into deaths and loss of properties (Benjaminsen *et al.*, 2009; Norman, 2013). Hence, the country has been experiencing an increasing magnitude of conflict among land-users particularly between the farmers and pastoralists. Similar examples play out for herders when cattle are attacked and killed, often in retaliation to destruction of farmland. In Tanzania, the worst conflict between pastoralists and farmers occurred in December

2000 in Kilosa district, Morogoro region, where 38 farmers were killed. Hostilities reignited in 2008, eight people lost their lives, several houses were set alight and livestock stolen (Makoye, 2014).

Several studies express concern on conflicts based on land use between farmers and pastoralists in Tanzania. For example, Massoi (2015) wrote on Land conflicts and the livelihood of Pastoral Maasai Women in Kilosa district of Morogoro, Tanzania. The study's aim was to explore the impact of conflicts on women and land use in Kilosa. Also the effect on existing gender relations among the pastoral Maasai community. Benjaminsen *et al.* (2009) researched on the Kilosa Killings: Political Ecology of a Farmer–Pastoralists Conflict in Tanzania, pointed out that conflicts should be analysed within a broader historical and policy context because for instance in the Kilosa District in Tanzania, cited above, it was a national tragedy to lose such a magnitude of lives.

Therefore, there should be amicable approaches and enforcement through which land conflicts between the pastoralists and farmers can be resolved. Communities ought to enter into agreements that solve their central incompatibilities, accept each other's continued rightful existence as parties and cease all violent actions against each other (Nzogela, 2014; Mwamfupe 2015; Wallenstein, 2002:8). Some studies show that there are ways to mitigate conflicts such as discussion, agreements and payment of disciplinary fines (Msuya, 2009; Kisoza, 2007). Also the government in her efforts to cultivate peace has tried to involve institutions in both the formal and informal sectors. The formal rules include the written laws, regulations and procedures while

the informally established procedures, norms, customs, practices, and patterns of behaviours form the institutional framework to dissolve conflicts between farmers and pastoralists (Kajembe *et al.*, 2000). However, these efforts have not yet managed to end this problem (Mwasha, 2016).

Due to amicable conflict resolution strategies between farmers and pastoralists other researchers seem to agree that community setting plays a major role in conflict mitigation. The highest level is the village assembly in the aspect of decision making and the lowest the hamlet (Homewood, 2004; Kisoza, 2007; Msuya, 2009). In addition to this multi-causality, some argue that it is more likely that the role of formal and informal institutions in mitigating conflict between farmers and pastoralists has not been taken by government organs to seriously combat the conflicts between the two parties (Benjaminsen *et al.*, 2009). It is this thrust that this paper concentrates and the focuses on formal and informal institutions as rules of the society or rules of the game to mitigate conflicts between farmers and pastoralists. The rules of the game are guidelines, or governing principles of how something is done or how one should behave in a given situation or endeavour, especially those that are informal or unspoken (Kisozi, 2007).

The involvement of both formal and informal institutions in mitigating conflicts between farmers and pastoralists has become the prime theme for different studies in the fields of economics, political science and sociology, just to mention a few. It is crucial to involve formal and informal institutions for the sake of bringing harmony between the two groups because institutions can bring people together (Mahonge,

2013). They can nurture human interactions and eliminate uncertainty by providing a structure to human life (Khan and Mehmood, 2016).

Although Tanzania has encouraged and engaged different institutions to resolve conflicts between farmers and pastoralists, conflicts have been escalating and the ensuing consequences are becoming socially and economically unbearable (Falanta and Bengesi, 2018). It is important to investigate the role of formal and informal institutions in mitigating conflicts between farmers and pastoralists. Formal and informal institutions may play an effective role in mitigating these conflicts and solving other complex issues in the agrarian and pastoralist communities. Informal institutions are unwritten rules such as customs, conventions and norms which are relevant to social relations among the community members (Mageka and Mahonge, 2013), while formal institutions are the written ones such as rules, laws and constitutions. These institutions embody implementation and enforcement characteristics (Khan and Mehmood, 2016).

This paper is organized into the following sections. The first section provides the theoretical review. The second section presents the methodology used in the study and the third section presents the results and discussion of the study findings. The last section presents conclusions and recommendations emanating from the study.

4.2 Theoretical Review

This paper applies the institutional theory to frame the concept of mitigating conflicts between farmers and pastoralists. The choice of the theory was based on involvement

of institutions in the aspects of social life including psychological considerations, which are important in shaping human behaviour. It considers the processes by which structures, including schemes; rules, norms, and routines, become established as authoritative guidelines for social behaviour (Scott, 2004) and how these elements are created.

The institutional theory attends to the deeper and more resilient aspects of social structure. It examines how these elements are created, diffused, adopted, and adapted over space and time; and how they fall into decline and disuse (Scott, 2004). Indeed, institutions constitute the very basis for human interaction in analyzing social phenomena, that views the social world as significantly comprised of institutions – enduring rules, practices, and structures that set conditions on action. Institutions are fundamental in explaining the social world because they are built into the social order, and direct the flow of social life (Lawrence and Suddaby, 2006). They are the constants that determine the rules of variation (Mahonge, 2013).

Institutions thus bring order to social relations, reduce flexibility and variability of behaviour and hence, limit the possibility of unilateral exercise of personal interests and impulses. By providing the proper conduct of individuals, they increase the degree of predictability and ensure continuity of social relations which is needed among farmers and pastoralists communities (Tonoyan and Strohmeyer, 2010; Marquis and Tilcsik, 2016).

4.2.1 The role of institutions

The key role of institutions lies in the need to create the preconditions for establishment of a stable structure of human interaction, by reducing the level of uncertainty in the society, influencing the community's decision making signalling which conduct is legitimate and acceptable and which is not (Kajembe *et al.*, 2004). Formal and informal institutions are interdependent and complement each other. For example, informal institutions may play an effective role in resolving conflicts and solving complex issues and become rules in their own rights when they are accepted by the society, while formal mechanism e.g. police and other law enforcing agencies failed to provide public security and to resolve conflict (Bandaragoda, 2000).

The institutional framework serves to reduce the uncertainty for human actions and thereby have a stabilising effect on a society. However, the stabilising effect of institutions does not mean that institutions are static. As society and its priorities change, institutions (conventions, codes of conduct, norms of behaviour, laws, contracts) tend to evolve and continually alter the choices available to individuals (Kajembe *et al.*, 2004). This is particularly crucial in different settings under which farmers and pastoralists systems operate in Tanzania. In these systems, the extent and character of observed gaps between declared rules and rule of the game and their implications on the resources and resource use relationship is not well known. In view to this, the paper aimed at answering the following question:

- (1) *What are roles of formal and informal institutions in conflicts mitigation in the study area?*

The results of this question provide insights to identify the role of each institution formal and informal found in the study area to enhance co-existence between farmers and pastoralists. According to Nkhambaku (2014), local authority officials representing formal institutions demonstrated that strategies used by local government institutions in mitigating conflicts between farmers and pastoralists are still not readily available. This notion was supported by Etekepe (2011) who indicated that African scholars have developed several methods and strategies of conflict management and peace building, but they have not been widely popularised as role models. Other authors also echo the conception (Norman, 2013; Imobighe, 2003; Afisi, 2009). Furthermore, in Mali whereby the government gave local authorities the mandate to play a role in conflicts mitigation. This can be termed as a decentralization reform where more powers are placed into the hands of local officials to resolve conflicts related to land and natural resources (Jones-Casey (2011).

4.2.2 Approaches in mitigating conflicts between farmers and pastoralists

Despite the fact that institutions have an important role to play in conflict mitigation between farmers and pastoralists the efforts have not yet managed to end this problem. Mechanisms used by institutions were to create awareness to the community on policies, proper land use and partitioning, also the use of method in participation through negotiation between conflicting parties competing over resource use applied yet the situation remains the same (Mwasha, 2016). These circumstances lead us to the next question.

(2). How do institutions mitigate conflicts between farmers and pastoralists?

Different institutions have diverse approaches in mitigating conflicts. Scholars have proposed different ways in mitigating conflicts between farmers and pastoralists (Mwafumpe, 2015; Mwasha, 2016). The mechanisms of mitigating the conflicts such as negotiation, mediation have been weakened and that the tendency is more towards calming down conflicts rather than solving them (Norman, 2013). Therefore, paper provides appropriate ways or mechanisms to the government and other stakeholders on how formal and informal institutions can mitigate conflicts between farmers and pastoralists. This will also point out that state actors are not neutral arbitrators but they are instrumental in the production of institutional uncertainty and create a discrepancy between resources inflow and weak regulations which in turn generate room for opportunistic behaviours and conflict emergence (Meur *et al.*, 2006; Mwafumpe, 2015; Adeoye, 2017). From empirical evidence, the police have been found to be corrupt, to detain people and to delay cases unduly, circumstances which have led to frequent conflicts between farmers and pastoralists (Mwamfupe, 2015). This condition also leads us to another question.

(3)What factors influence the involvement of both formal and informal institutions in mitigating conflicts between farmers and pastoralists?

In mitigating conflicts between farmers and pastoralists this paper has come up with factors influencing the involvement of formal and informal institutions. In answering this question the paper will uncover factors influencing formal and informal institutions to be involved in mitigating conflict between farmers and pastoralists. Scholars have propounded some factors such as inadequate grazing reserve and stock routes; changes in land tenure system; insufficient legislation pastoralism; expansion in agricultural policies; economic factors and climate change have also been

identified as the long-term causes of the conflicts (Mwamfupe, 2015; Benjaminsen *et al.*, 2009).

4.3 Methodology

4.3.1 The study area

The study on which this paper is based was conducted in Kilosa and Mvomero Districts in Morogoro Region. The selection of the study districts was based on the following criteria: presence of a higher population of farmers and pastoralists, recurrence of conflicts and consequences of conflicts in terms of loss of human life and destruction of crops and properties.

Kilosa District was selected because it was a hotspot for conflicts between farmers and pastoralists since 2000. On the other hand Mvomero was selected because of existing conflicts among farmers, pastoralists and investors where large areas of land have been set aside for private individuals at the expense of small scale farmers and pastoralists. In the government and development reports and in national newspapers, the districts are often referred to as areas of land scarcity and conflicts (Saruni *et al.*, 2018).

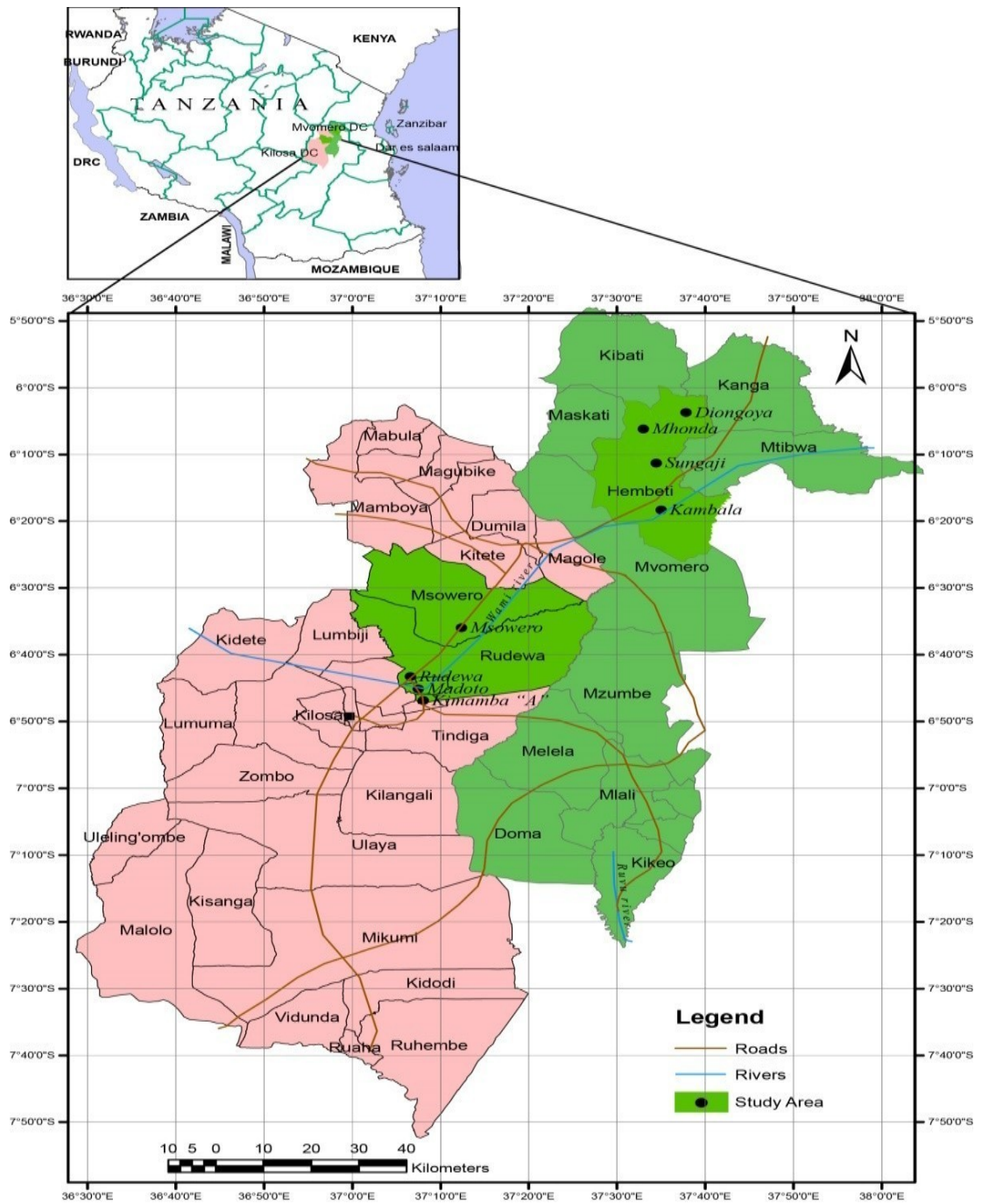


Figure 4.1: Location of the study area

(Source: NBS 2012)

4.3.2 Research design, sample size and sampling procedure

This study employed a cross-sectional research design which involves collection of information only once from any given sample of population (Kothari, 2004) (Appendix 2). This design was used because of two main reasons. First, the information gathered from the respondents and documentary review represents the existing situation at the time of the study (Barley and Tolbert, 1997) and the second reason is based on observation, made by Amin's (2005) that the design allows collection of data of given variables at a given point in time. This ensures that all the data required were collected within a short period of time, despite a relatively large sample of respondents.

The sample size for the study was 203 households calculated based on a formula by Kothari (2004). The unit of analysis was a household for both farmers and pastoralists in Kilosa and Mvomero Districts. Using proportionate sampling 103 and 100 respondents were selected from Kilosa and Mvomero Districts respectively.

Table 4.1: Number of selected respondents per village

District	Village	Total No. of Population (Census, 2012)	Number of selected Respondents		Total No. of Household selected
			Farmers	Pastoralists	
Kilosa	Rudewa	18 352	38	30	68
	Msower	29 361	40	32	72
Mvomero	Hembeti	21 057	10	17	27
	Mhonda	20 354	15	21	36
Total		89 124	103	100	203

4.3.3 Data collection and analysis

Primary data were collected using both qualitative and quantitative techniques. Qualitative data collection methods comprised interviews to gather information from government officials i.e. Key Informants (KIs) and Focus Group Discussions (FGDs) with farmers and pastoralists. Two FGDs were conducted in each of the selected study districts. The size of the groups ranged from 7 to 10 participants including farmers and pastoralists to collect information on mitigating conflict in their areas. Four village leaders and six district government leaders were consulted and these provided valuable insights into the findings. Face to face interviews were used to collect quantitative data from farmers and pastoralists through the use of a questionnaire. This was carried out to clarify issues arising from other data methods (Creswell, 2009). Secondary data on conflicts between farmers and pastoralists were collected through field reports which were found from ward offices. Other secondary information were obtained from government documents including land tenure policies 1995 and 1999, guidelines, Village land Act No. 5 1999, Land Act No. 4 1999 as well as By-laws related to the conflicts between farmers and pastoralists.

Qualitative data were analyzed using content analysis whereby a combination of elements of analysis was employed to come up with information or themes. The identified themes were discussed in detail with some quotations from the key informants interviews and FGDs. In this regard, the recorded components of discussion with the respondents were broken down into small units of themes to synthesize meaning, values and attitudes.

On the other hand, quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) to generate descriptive and inferential statistics. In order to model the involvement of formal and informal institutions in conflicts mitigation in the study area, data were analyzed using the binary logistic regression. The model was used because it is a powerful and popular one in social sciences at predicting a dependent variable (land use conflict in this case) (Berman, 2013). On the basis of continuous and or categorical independent variables, determining the percent of variance in the dependent variable explained by the independent variables, gauging the impact of covariate control variables, and ranking the relative importance of independent variables.

Therefore, binary logistic regression model was adopted to determine factors that influence both formal and informal institutions in conflicts mitigation between farmers and pastoralists. The dependent variable is the probability that formal and informal institutions contribute in conflicts mitigation assigned numeric value 1 and the probability that formal and informal institutions do not participate in conflicts mitigation between farmers and pastoralists assigned numeric value 0.

$$\text{Lg} (P/1-P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_n + \epsilon_i$$

Where P= chances of formal and informal institutions being involved in mitigating conflicts

1-P = chances of formal and informal institution not being involved in mitigating conflict

$\beta_0, \beta_1, \beta_2, \dots, \beta_k$ = constant coefficient

ϵ_i = error term

X_1 to X_n = independent variables entered in the model, which were:

X_1 = institutions controlling grazing = 0 if the answer was no and 1 if the answer was yes

X_2 = rules limiting stocking rate = 0 if the answer was no and 1 if the answer was yes

X_3 = presence of informal institutions = 0 if the answer was no and 1 if the answer was yes

X_4 = presence of formal institutions = 0 if the answer was no and 1 if the answer was yes

X_5 = community willingness to mitigate conflicts = 0 if the answer was no and 1 if the answer was yes

X_6 = expectations from formal and informal institutions = 0 if the answer was no and 1 if the answer was yes

X_7 = institutions participation in conflicts mitigation = 0 if the answer was no and 1 if the answer was yes

4.4 Results and Discussion

This section presents results on the role of formal and informal institutions in mitigating conflicts between farmers and pastoralists in the study area. The results answered the following questions: (1) What are the roles of formal and informal institutions in conflicts mitigation in the study area? (2) How do institutions mitigate conflicts between farmers and pastoralists? (3) What factors influence the involvement of both formal and informal institutions in conflict mitigation between farmers and pastoralists?

4.4.1 The role of formal and informal institutions in mitigating conflicts

Institutions have been categorized into formal, informal and hybrid institutions. Each institution has potential in mitigating conflicts between farmers and pastoralists.

4.4.1.1 Formal institutions and their roles

The findings presented in Table 4.2 show that 12.8% of the respondents indicated that the role of formal institutions is to promote social justice, equality and ensure the government remains accountable. Social justice and equality are in the constitution of Tanzania. This is done by forming committees and local government leaders to be responsible for addressing and interpreting the constitution to farmers and pastoralists. This implies that, from the study area the respondents were aware of the existence of the constitutions that could be means of mitigating conflicts if implementation of them was done appropriately. However, the recurrence of the conflicts means that the enforcers were not playing their part in promoting social justice and equality such as Village land committee, Ward land committee, and Village water committee. Literature, similarly, affirms that the constitution advocates that all human beings are equal and the right of equality has to be promoted with justice (Leftwich and Sen, 2010; Berman, 2013).

The findings show that 10.8% of the respondents declared that formal institutions act as guideposts for community (Table 4.2). This indicates that the community should be directed to abide by what is advocated in the village land Act No. 5 1999. The Act provides the basic law in relation to land management including, settlement of land

disputes. This suggests that if the community would abide by what has been stipulated in the land law, there would be no conflicts between farmers and pastoralists. This was supported by KI from the study area who said that “*the presence of village land Act No. 5 1999 is to allocate land according to the requirement of the community equally and fairly,*” This implies that the Act should promote and ensure land tenure system in Tanzania that protects the rights in land for all its citizen by recognizing both customary and statutory right of occupancy as being equal in the law to be established.

The short fall of Village Land Act is that, it does not recognize grazing land as a separate category, but pastoralists can assert customary rights of occupancy to grazing land (USAID, 2010). As per the Village Land Act 1999, which governs village land, falls into one of three categories: (1) communal land (e.g., public markets and meeting areas, grazing land, burial grounds); (2) occupied land, which is usually an individualized holding or grazing land held by a group; and (3) vacant land, which is available for future use as individualized or communal land (specifically encompassing unoccupied land within the ambit of village land, as opposed to general land) (USAID, 2010).

Therefore, if land was administered in accordance with law then the occurrence of conflicts would be minimal. Previous studies have indicated that, it is a crime to use land without justification or approval, doing so generally constitutes the crime of assault (Berman, 2013). According to Chawene (2012) Land law should be in a manner which can be readily understood by all citizens. From the findings these

formal institutions would play the role smoothly to mitigate conflicts between farmers and pastoralists because it is understood by the community.

According to the finding, 10.3% of all respondents agreed that the provision of guidance of land tenure as articulated in the National Land Policy 1995 aims at solving problems which arise from land sector in the country (Table 4.2). This indicates that the National Land Policy has provided farmers, pastoralists and local government leaders with the appropriate ways of solving problems related to land use. Formation of land committee at village level, providing base maps for land use providing land registration system and information. This implies that there should be committee relevant in solving conflicts between farmers and pastoralists. The study finding that the National Land Policy was formed in 1995, its general objective was to promote and ensure secure land tenure system, encourage the optimal use of land resource and facilitate broad-based socio-economic development without affecting the environment. Importantly, the policy was to address the specific objectives such as to promote an equitable distribution of and access to land by all citizens, to ensure the existing rights in land are recognized, clarified and secured in law and to set ceilings on land ownership which will later be translated into statutory ceilings to prevent or avoid the phenomenon of land concentration (i.e. grabbing) Similarly, KIs indicated that establishment of land committees is important towards solving land utilization conflicts, as substantiated by the quote below:

“...at Msowero village, a conflict resolution committee was formed, and it was used to mitigate conflicts through setting rules as follows: specific stock routes to access drinking water along Msowero river, a specific area where livestock could drink water, and a designated area for dry season cultivation

along Msowero riverbank.” (Key informant 3, Msowero village, October, 2016).

This result suggests that the measures taken at local level had reduced conflicts between farmers and pastoralists. The finding from the KI harmonizes with that of Wehrmann (2008) who stated in order to come up with amicable resolution over land disputes of farmers against pastoralist, can be achieved through consensual approaches. The government organs are village land committee, village environmental committee, village land committee. Consensual approaches means that the mitigating conflicts strategies are arranged in a way that a compromise that is acceptable to all parties involved and which can best re-establish peace, respect and even friendship among the parties is implemented. The goal of the strategy is not just to end the conflict, but also to solve the problem so that all parties in conflict feel satisfied.

4.4.1.2 Informal institutions and their roles

The findings in Table 4.2 depict that 26.6% of all respondents affirmed social capital on other members of the community is a life style. Social capital in this study refers to social norms, such norms where people shake hands when they are formally introduced or normal greetings, dress appropriately for the environment you are in, respecting elderly, visiting neighbours, supporting one another in time of crisis such as burying the deceased, treating and curing for those who were sick or injured caused by accident or fighting between farmers and pastoralists.

This implies that having social norms in the society and practise accordingly will guide and monitor behaviour and will act as way or mechanism to mitigating conflicts. This way will reduce conflicts between farmers and pastoralists in the study area. These express solidarity in the community. Those who do not follow the norms will suffer disapproval or may even be outcast from the group. This expectation accounts for relationship within the society (farmers and pastoralists). Msuya (2009) declared that some social norms are enforced by legal sanctions; for example, taking somebody property without his/her consent often becomes a legal offence that could result in arrest. For instance, pastoralists taking their animals to farmers land without prior consent it is misbehaviour as far as social norms are concerned, consequently conflicts between farmers and pastoralists emerge. Therefore, having such attitude to conform to social norms will result in peace and harmony to the community. Based on key informant interview (KIs) *if people could typically feel strong pressure to conform to norms there would be no conflicts between farmers and pastoralists* (Key informant 4, Mhonda village Mvomero, October, 2016).

The empirical finding revealed that 20.7% of all respondents claim informal institutions can manage and control social relationships (Table 4.2). In this study, a social relationship refers to as custom and traditions. This implies that custom and tradition include such practices as pastoralists migrating from one place to another for search of pastures and water, meetings and farewells, meal and sitting arrangements, celebration and sanctification related with transition periods, attitude and behaviour to be exercised in such cases as “in mourning”, “in offering condolences”, words to be uttered and farming. These practices bring harmony among farmer-pastoralist community once the abide as per stipulation and mitigating conflicts can be done to strengthen peace and harmony.

For instance, pastoralists who are known as nomads by nature exercise traditional migratory pattern that can vary from time to time looking for water and forage for their herds. As they migrate everything that stands at that point is destroyed together with farm crops as a result conflicts emerge. This custom and tradition for pastoral societies is common in rangelands where in general vegetation is very low with forage supply and its quality varying over time (Kasomo, 2010).

According to Norman (2013), custom and tradition are belief or behaviour passed down within a group or society with symbolic meaning or special significance with origins in the past, for example some of people especially pastoralist women remained speechless and do not participate much according to their Wasuukuma and Maasai customs that they have nothing to say in front of men (Kisoza, 2007; Mwambashi, 2015).

Additionally, in Kilosa and Mvomero Districts the study identified that the pastoralists, exclusively Maasai are led by the traditional leaders known as *Laibon*. The *Laibon* are the ritual and spiritual leaders of the Maasai society, whose authority is based on their mystical as well as medicinal/healing powers. They are aided in their tasks by age-group leaders called *olaiquenani (laigwanani)*, who are chosen before circumcision to lead their age-group until old age. Their role is multiple: to officiate and direct ceremonies and sacrifices, to heal people of physical and/or mental or spiritual ailments, and to provide advice to elders on the spiritual aspects of community matters, to supervise customs and taboos such that Maasai are not

allowed to eat wildlife meat in respect ornament: bead jewellery, earlobes, shuka (traditional sheet) which are used in daily life of the local people (Massoi, 2015). Therefore, abiding all these traditional rituals and customs will result the community who were in conflicts (farmers and pastoralists) to stay in peace and harmony.

Ritual is another type of informal institution as a rule of the game identified during the survey. Rituals in Kilosa and Mvomero Districts have connection with mitigating conflict between farmers and pastoralists. Table 4.2 shows that 18% of respondents reported the existence of rituals practise such as circumcision rite for young men, marriage, divine consultation, tradition dancing were found in study area and the role of rituals was to provide a sense of stability, security and loyalty to groups (farmers and pastoralists) as well as to each individual person. The practice ritual was to demonstrate values and beliefs, to pray and sometimes just to reinforce group solidarity. Implementation of these rituals in the society will in enhance the relationship between the farmers and pastoralists who are always in conflicts and if the community would abide by rituals articulated there would be minimal conflicts between the two parties.

Table 4.2: The role of formal and informal institutions in mitigating conflict between farmers and pastoralists

Institutional role	Distribution	
	Frequency	Percent
Formal Institutions To promote social justice and equality (Constitutions)	26	12.8
To act as guidepost for the community Land law 1999– (Laws)	22	10.8
To provide guidance Land Tenure Policy 1999 (Policy)	21	10.3
Informal Institutions To show social capital on other member of the community (Social norms)	54	26.6
To manage and control social relationship (Custom and Tradition)	42	20.7
To provide a sense of stability, security and loyalty to groups (Religious Ritual)	38	18.7
Total	203	100.0

According to the key informants religious rituals are still practised in Kilosa and Mvomero Districts but not in accessible despite the ancestral tombs are still located in those areas, yet people are restricted from accessing them, such religious ritual are special dress, consumption of special food, drink and performance of traditional songs and dance, although there is declining practise due to the increase of migration of farmers and pastoralists from neighbouring districts and regions for instance, people from Kiteto in Manyara Region, Handeni and Kilindi in Tanga Region, Kongwa in Dodoma Region who came in with their different style of living and ignore what is found in the study area as result conflict still exists.

However, the information from one key informant ritual activities are done under the custodian of ritual leaders and has helped to discipline the community found in the study area. Also added that no tribe had a mandate to set up a land tenure system for others and when disputes arose over its usage, customary systems were applied in settling them. These ritual activities have contributed in reducing conflict between farmers and pastoralists by solving disputes through applying ritual guideline. What was unique in this phase was that; principles of equality and justice were undefined and unapplied

within the limits of clan jurisdiction and the access to land ownership which accelerate the conflicts between the two conflicting parties (Shivji and Kibamba, 2002).

4.4.1.3 Formal and informal institutions

From the findings, institutions reflect their purpose in contribution to reduce the uncertainties inherent in the human interaction that occur as a result of the complexity of the conflicts between farmers and pastoralists to be solved and the manner in which the communities solve their disputes. For example, one of the key informants argued that: *if formal and informal institutions were in place, they would have solved co-ordination challenges between individuals and provide 'standard solutions to recurring social interaction problems'*. another key informant affirmed strongly that *It is therefore important to create an institutional environment that will promote the certainty that the commitments will be respected, which will in turn result in solving conflicts between farmers and pastoralists* Key informant 5, Hembeti village Mvomero, October 2016).

This suggests that institutions connect social activity over time, between actors and situations thus, bringing structure and stability to society. Therefore, social institutions (both formal and informal) play a critical role in reducing the social uncertainties in the system by making the actions of the agents more predictable.

Institutions are legal frameworks which bind together farmers and pastoralists. Scholars have documented that the existence of formal and informal institutions is to bring up harmony and peace for two parties (Mwamfupe, 2015; Khan and Mehmood,

2016; Meur *et al.*, 2006). This argument was supported by FGDs participants who revealed that when stakeholders from the two groups (i.e. farmers and pastoralists) join forces, they bring their different experiences and expertise to bear in pursuit of shared objectives.

In view of this, amicable resolution over natural resource disputes between pastoralists and farmers could therefore be achieved through consensual approaches. By consensual approaches it means that the conflict resolution strategies are arranged in a way that a compromise that is acceptable to all parties involved and which can best re-establish peace, respect and even friendship among the parties is implemented (Wehrmann, 2008). This is to say, consensual approaches are negotiations that aim to re-establish a positively functioning relationship and to agree on terms for future interaction.

FGDs and KIs have indicated that conflicts between farmers and pastoralists can be managed only if formal and informal institutions were effectively involved in terms of enforcing rules of the game. From practical point of view on how such formal and informal institutions can be enforced, FGDs and KIs participants argued that there is a need for the government of Tanzania and stakeholders such farmers, pastoralists, traditional leaders and religion leaders to establish relevant mechanisms. This mechanism would be used to reach out the two communities (farmers and pastoralists) with the thrust centered on contribution of the use of rule of the game. The use of mechanism will be to mitigate/solve the present conflicts for the benefits

of the present and future generations, through observing holistic thinking commonly known as systemic thinking.

The findings from this study indicate that formal and informal institutions are interdependent. This paper suggests that in situations when formal institutional approaches are not appropriate in mitigating conflicts, informal institutions can do that and the vice versa. Given the fact that we do not live in an ideal environment we expect use of both formal institution and informal institutions when dealing with conflicts. It is from this context this paper argues that “in the real life it is not realistic to claim that one strategy fits all types of conflicts, the possibility is that there are situations which require formal institutions and others will need informal institutions and in some incidences you need a combination of the two to mitigate conflicts.

4.4.2 Institutions and mitigation of conflicts between farmers and pastoralists

4.4.2.1 Existing conflict in the study area

The findings presented in Table 4.3 show that 98.5% of the respondents reported that existence conflict in the study area. The respondents identify the following to be the causes; loss of human life, loss of livestock, destruction of properties and more declines in rangeland resources. Unless conflicts are managed properly range resources and farmers and pastoral livelihoods will continue to deteriorate (Mwamfupe, 2015; Malisa, 2016). Furthermore, conflict affects development and provision of crucial services in farmers and pastoralists area by limiting access of range resources (Massoi, 2015).

4.4.2.2 Strengthen coordination between two parties to identify modality of dissolving conflicts

Table 4.3 shows that 46.7% of the respondents reported that strengthening coordination between farmers and pastoralists would help in identifying relevant modality of dissolving conflict between farmers and pastoralists. The program used in strengthening coordination of the two groups will be through dialogue and mediation as tools for building and strengthening intercultural understanding between the farmers and pastoralists; as well as supporting efforts towards the conflict prevention, management and resolution as the case may be. Through the use of mediation, involved in series intervention with some degree of success that are linked to fostering harmony, rebuilding trust and the cessation of violence in several communities throughout the Middle Belt (Kwaja, 2018).

Civil Society Organizations (CSOs) and Non-Government Organizations (NGOs) can provide technical and financial assistance to traditional and community leaders to strengthen mediation and non-violent conflict management skills. Since traditional and community leaders are often the first line of support called upon in times of violence, enabling them with conflict management skills can help de-escalate conflicts when they emerge (Kwaja, 2018; Massoi, 2015).

4.4.2.3 Create a common exchange and negotiation platform for local stakeholders

Results in Table 4.3 show that 89.2% of the respondents in the four villages (Rudewa, Msowero, Hebenti and Mhonda) reported that creating a common

exchange and negotiation platform for local stakeholders will dissolve conflicts between two conflicting parties. These stakeholders included representatives of the conflicting parties – farmers and pastoralists – as well as government officials at national and subnational levels, and local non-governmental organizations. Participants met regularly to assess ongoing conflicts, identify stakeholder perceptions and competing claims on resources, and to make decisions about land use planning that are agreeable to both parties (Norman, 2013; Kasomo, 2010).

4.4.2.4 Respecting demarcated boundaries set

Through discussion with local community 87.2% of the respondents in four villages indicated that respecting demarcated boundaries set by government or local authority will eventually diminish conflict between farmers and pastoralists (Table 4.3). This position would maintain the area under conservation and alternative land respectively. With respect to Tanzanian Land Act of 1999, Tanzanian land territory is at present divided into general land (Government land), reserved land and village land. Village land refers to land with properly established and demarcated boundaries set through legal or administrative procedures mainly during the Villagization programme of 1973 and 1976 (Norman, 2013).

**Table 4.3: Institutions mitigate conflicts between farmers and pastoralists
(n=203)**

Response	Distribution	
	Frequency	Percentage
Identify the existing conflicts	200	98.5
Strengthening coordination two parties	141	69.5
Create a common exchange and negotiation platform	181	89.2
Respecting demarcated boundaries set	177	87.2

4.4.3 Factors that influence involvement of both formal and informal institutions in mitigation of conflict

Binary logistic regression model was used to estimate the probability of formal and informal institutions involvement in mitigating conflict between farmers and pastoralists in the study area.

The model fits very well as indicated by Hosmer and Lemeshow Test being above 0.05 ($p=1.000$) (Table 4.4). Results from the binary logistic equation indicate that the variables influencing the role of institutions (formal and informal) in mitigating conflict contributed by 6.2% and 43.6% as explained by Cox and Snell R square and Nagelkerke R square values respectively (Table 4.4). Table 4.5 shows that Wald statistics (Chi square) are non-zero values, which implies that there is relationship (association) between the dependent and independent variables. According to Norusis (1990) and Powers and Xie (2000), the non-zero Wald statistic values indicate the presence of relationships between the dependent and explanatory variables.

Table 4.4: Test statistics

Tests	χ^2	df	P-value
Model evaluation (overall):			
Likelihood ratio test (Omnibus Tests of Model Coefficients)	13.051	7	0.071
Goodness-of-fit test:			
Hosmer and Lemeshow test (H-L test)	0.128	6	1.000
Cox & Snell $R^2 = 0.062$			
Nagelkerke $R^2 = 0.436$			

With respect to factors that were postulated to influence the involvement of formal and informal institutions in conflicts mitigation between farmers and pastoralists, four out of seven independent variables were found to be statistically significant. These were presence of institutions responsible for controlling grazing, community willingness to partake in combating conflicts among themselves, community's expectation from role played by formal and informal institutions in mitigating conflicts, and presence of institutions participating in resolving conflicts.

Result from binary logit Table 4.5 revealed that presence of institutions responsible for controlling grazing has a positive influence on the role played by formal and informal institutions in mitigating conflicts. This variable was found to be statistically significant at the probability of 10% ($p=0.064$). This finding is consistent with results of other studies which reported similar findings on presence of grazing institutions and their corresponding influence on the role of formal and informal institutions in mitigating conflicts (Zenger *et al.*, 2002; Khan and Mehmood, 2016).

According to focus group discussions, the institution entitled to controlling grazing such as village land committee, water committee and environmental committee had to ensure that pasture, either native or improved is available for animals year-round and that soil remains healthy. Similar arguments were made during the key informant interviews. For example, one of the elderly respondents (a pastoralist) said that *“grazing and land health (ecosystem functions) are much better when grazing with time control. Ideal time control would not allow the same plant to be grazed twice in the same grazed period; it would allow adequate recovery of plants before the*

pasture is grazed again if this method would be granted and maintained there would be no conflict between farmers and pastoralists.”

Community willingness among themselves in mitigating conflicts between farmers and pastoralists has a positive influence on the role played by formal and informal institutions in mitigating conflicts (Table 4.5). This variable was found to be statistically significant at the probability level of $p < 0.05$. This finding is supported by Msuya (2009) that institutional setting plays a major role in conflict mitigation only if the farmers and pastoralists are willing to settle their disputes. Several studies have emphasized on importance of conflict mitigation. For example, Etekpe (2011); Falanta and Bengesi (2018); Malisa (2016) indicated that African scholars have developed several methods and strategies of conflict management and peace-building. Other authors also echo the conception (Norman, 2013; 2011; Imobighe, 2003; Ikeleghe, 2001; Afisi, 2009).

The presence of institutions (formal and informal) participating in conflict mitigation has a positive influence on the role played by formal and informal institutions in mitigating conflicts (Table 4.5). This variable was found to be statistically significant at the probability level of 5% ($p = 0.010$). This finding is consistent with observations from previous studies which reported similar findings on the presence of formal and informal institutions participating in solving conflicts and their matching influence on the role of formal and informal institutions in mitigating conflicts between farmers and pastoralists in Kilosa and Mvomero (Lugoe, 2011; Benjaminsen *et al.*, 2009). Findings from regression analysis were similar with those from the FGDs which maintained that *“strong institutions and good leadership are vital in addressing conflict between farmers and pastoralists.”*

Table 4.5: Estimated results of Binary Logistic Regression (Formal and informal institution in mitigating conflicts)

Variable in the equation	B	S.E.	Wald	Sig.	Exp (B)
Institutions controlling grazing	1.550	0.83	3.433	0.064*	4.711
		7			
Rules limit stocking rate	0.836	0.79	1.094	0.295	2.308
		9			
Presence of informal institution	0.146	0.73	.039	0.843	1.157
		5			
Presence of formal institution	0.538	0.85	.392	0.531	1.713
		9			
Community willingness to mitigate conflicts	0.605	.289	4.361	0.037*	1.830
				*	
Expectations from formal and informal institutions	-1.416	.580	5.966	0.015*	.243
				*	
Institutions participating in conflicts mitigation	2.518	.980	6.609	0.010*	12.408
				*	
Constant	17.490	5.311	10.84	0.001	.000
			5		

Note: ** and * indicate significance level at 5% and 10% respectively

Contrary to the previous variables discussed earlier, community's expectations from formal and informal institutions (as an independent variable) in mitigating conflicts was found to have a negative influence on the role played by formal and informal institutions. This variable was found to be statistically significant ($p < 0.05$). This particular finding seems to contradict previous similar empirical study which reported community's positive expectation from the role played by formal and informal institutions in resolving similar conflicts. The probable explanation behind this prediction of findings would be exacerbated by geographical set up and historical background of the intense conflict in Kilosa and Mvomero. Where unethical practise (corruption), leadership interest and land use mapping have significantly they contributed to the negative influence on the role played by formal and informal institutions.

Similarly, from different scholars related this negativity to the scenario of pastoralists whom by nature critically considered as the marginalised groups who lose their right over land to other groups due to the fact that in the categorisation of land, there is no land set aside for pastoral. Hence, the pastoralists encountered difficult to lead their cattle during search for pastures and water (Mwambasi, 2015; Mwamfupe, 2015).

The expectation of the community from formal and informal institutions is to stop or reduce conflict between farmers and pastoralists. This affirmation was echoed by scholars who contended that the importance of formal and informal institutions in mitigating conflicts between farmers and pastoralists is well recognised, however, empirical studies have seldom been conducted to thoroughly understand how formal and informal institutions mitigate the conflicts (Mwamfupe, 2015; Falanta and Bengesi, 2018; Khan and Mehmood, 2016).

4.4.4 The study's contribution to theory

This paper has examined the role played by formal and informal institutions in mitigating conflicts between farmers and pastoralists in Kilosa and Mvomero Districts. The formal institutions are encompassed to promote social justice and equality (constitution), guidepost for the community (land law 1999), to provide guidance (policy), while informal institutions are: to show impression on other member of the community (social norms), to manage and control social relationship (custom and tradition), to provide sense of stability, security and loyalty to groups (rituals) assertion.

The institutional theory (IT) emphasizes solely on bringing order to social relations, reducing uncertainties so as to ensure continuity of social relations. However, this paper argued that the application of this theory depends on the context of the conflict. There are contexts, which need the application of formal institutions such as constitutions, laws policy to implement social relations, other contexts require informal institutions such social norms, custom and traditions, ritual to bring up the relationship of the society, some would need a combination of the two types of institutions.

In this view, the application of the IT depends on the nature of the conflict. Therefore, with the respect of this theory, the paper pointed out that institutional theory supports the study because the theory affirms to bring up social relationship and reduce uncertainties, while the thesis is also advocates for strengthening the relationship between farmers and pastoralists by promoting social justice and equality, providing security and trustworthiness so as to live in harmony and tranquillity.

This may suggest that institutional theory can apply both ways in coming up with resolution of conflicts between the two community. This to say that no single application among the two i.e. formal and informal institutions can stand alone to mitigate conflicts rather the combination can be appropriate to mitigate conflict.

4.5 Conclusions and Recommendations

4.5.1 Conclusions

The paper explored the involvement of formal and informal institutions in mitigating conflict between farmers and pastoralists. The role of formal and informal institutions in mitigating conflicts were to promote social justice and equality, act as guidepost, provide appropriate ways of mitigating conflicts, respecting one another, managing and controlling social relationship and finally maintain sense of stability and loyalty. Therefore, the application of formal and informal institutions can work cooperatively to bring social relationship and harmony to the society in mitigating conflicts between farmers and pastoralists. This is to say that institutions (formal and informal) cannot work separately; rather they work cooperatively to support and complement each other in mitigating conflicts.

Furthermore, the findings revealed that the presence of institutions responsible for controlling grazing, community willingness and formal and informal participation in conflicts mitigation have statistically significant influence on the role played by formal and informal institutions in conflicts mitigation which implies conflicts solving.

4.5.2 Recommendations

Governmental organs such as village land committee, village environmental committee, village land committee should emphasize more on cooperation between

institutions (formal and informal) the paper observed that in order to achieve amicable solution over land disputes There should be intense cooperation, solidarity in order to attained peace and tranquillity between farmers and pastoralists through consensual approaches.

Involvement of institutions (formal and informal) in mitigating conflicts between farmers and pastoralists can play a big role. Therefore, there is a need for government actors and traditional leaders such as Land Officers, District Agricultural and Livestock Development Officer (DALDO), Ward Livestock Extension Officer (WLEO), Ward Executive Officer (WEO), Traditional leaders to work together with farmers and pastoralists so as to enhance their roles in mitigating conflicts between farmers and pastoralists in the study area.

References

- Abba G. S. and Usman A. T. (2008). Farmer-pastoralist conflict in west africa: Exploring the Causes and Consequences. *Information, Society and Justice* 1(2): 163-184.
- Adeoye, N. O. (2017). Land use conflict between farmers and herdsmen in parts of Kano, Yobe and Borno States of Nigeria: nomads' viewpoints. *Ghana Journal of Geography* 9(1): 127-151.
- Afisi, O. T. (2009). Tracing contemporary Africa`s conflict situation to colonialism: A breakdown of communication among natives. *Philosophical Papers and Reviews* 1(4): 059-066.
- Amin, A. (2005). *Social Science Research, Conception, Methodology and Analysis*. Kampala: Makerere University Printery. 462pp.
- Areas, P. (2003). Biodiversity and Protected Areas. Tanzania Biodiversity and Protected Areas – Tanzania. Retrieved [from www.vub.ac.be/klimostoolkit/sites/default/files/documents/tanzania_bd.pdf] site visited on 10 November 2017,
- Bandaragoda, D. J. (2000). A framework for institutional analysis for water resources management in river basin context. Working paper No.5. IWMI. 55pp.

- Benjaminsen, T. A., Maganga, F. P., & Abdallah, J. M. (2009). The Kilosa killings: Political ecology of a farmer-herder conflict in Tanzania. *Development and Change*, 40(3), 423–445. <http://doi.org/10.1111/j.1467-7660.2009.01558.x>
- Bengesi, K. M. K. (2014). Assessing impact of biofuel investments on local livelihoods in Tanzania: A case of Kisarawe, Bagamoyo and Kilwa Districts. Retrieved from [http://www.mviwata.org/wp-content/uploads/2014/09/Study-Report-on-Biofuel-Investments-July_2012.pdf.] site visited on March 15, 2017,
- Barley, S. R. and Tolbert, P. S. (1997). Institutionalization and structuration: studying the links between action and institution. *Organization Studies*18(1): 93–117.
- Benjaminsen, T. A., Maganga, F. P. and Abdallah, J. M. (2009). The Kilosa killings: Political ecology of a farmer-herder conflict in Tanzania. *Development and Change* 40(3): 423–445. <http://doi.org/10.1111/j.1467-7660.2009.01558.x>
- Berman, J. (2013). Utility of a conceptual framework within doctoral study: A researcher's reflections. *Issues in Educational Research* 23(1): 1-18.
- Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative and Mixed Methods Approach* (3rd ed.) London: Sage Publications, Incorporated. 342pp.

- Etekpe, A. (2011). Role models in Peace building in Africa: An assessment of selected characters. *Afr. J. of Political Sci. and International Relations* 6(8): 181-190.
- Falanta, E. M. and Bengesi, K. M. K. (2018). Drivers and consequences of recurrent conflicts between farmers and pastoralists in Kilosa and Mvomero Districts, Tanzania. *Journal of Sustainable Development* 11(4): 13-26.
- Ikeleghe, A (2001). Civil society, oil and conflict in the Niger delta region of Nigeria: Ramification of civil society for a regional resource struggle. *J. Mod. Afr. Std*, 39(3).
- Imobighe, T. A. (2003). The OAU (AU) and OAS in regional conflict management: A comparative assessment, Ibadan: Spectrum Books.
- Jones-Casey, K. and Knox, A. (2011). Farmer-Herder Conflicts in Mali: Planning Land Rights at the Heart of Development. Focus on Land Africa [www.focusland.com] site visited on 6/7/2015.
- Kajembe, G. C., Shemweta, D. T. K., Luoga, E. J. and Nduwamungu, J. (2004). Incentives for sustainable forest management in Tanzania. In Proceeding of the IFRI East African Regional conference: Institutions, incentives and conflicts in forest management: a perspective (Edited by Shemweta, D. T., K., Luoga, E. J., Kajembe, G. C. and Madoffe, S. S.) 12th_13th January 2004. Moshi, Tanzania. pp 80-92.

- Khan, A. J. and Mehmood, T. (2016). *The Role of Informal Institutions in Conflict : an Assessment Study in Swat, Pakistan. Journal of Grobal Peace and Conflict* 4(2): [1–19. http://doi.org/10.15640/jgpc.v4n2a1](http://doi.org/10.15640/jgpc.v4n2a1)
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques*. 2nd Edition, New Age International Publishers, New Delhi. 365pp.
- Kothari, C. R. (2008). *Research Methodology, Methods and Techniques* (2nd edNew Delhi: NewAge Inter- national (P) Limited. pp. 109-110.
- Lawrence, T. B. and Suddaby, R. (2006). Institutions and institutional work. *Handbook of organization studies*, 2nd edn. London: Sage. pp. 215–254.
- Leftwich, A. and Sen, K. (2010). *Beyond Institutions. Institutions and organizations in the politics and economics of poverty reduction - a thematic synthesis of research evidence*. IDPM, School of Environment and Development, University of Manchester, Arthur Lewis Building, Oxford RoadManchesterM13 9PL. [www.ippg.org.uk] site visited on 8 June 2016.
- Lugoe, F. (2011). *Aligning and harmonizing the livestock and land policies of Tanzania*. Retrieved from [www.esrftz.org] site visited on 8 June 2016.
- Mahonge, C. P. I. (2013). *Out-scaling of hybrid institution for socio-economic development and environmental conservation: the case of Mbinga district*

Tanzania. *International Journal of Research in Social Sciences (IJRSS)*:
3(12): 460-471.

Mageka, R. and Mahonge, C. (2013). Informal institutions and female students ' school engagement : A case of Mvomero district ward schools. *International Journal of Education and Research* 1(8): 1–12.

Malisa, E. T. (2016). Interplay of Formal and Informal Grassroots Institutions. Dissertation for Award of PhD Degree at Sokoine University of Agriculture. 185pp.

Massay, G. E. (2017). In Search of the solution to farmer-pastoralist conflicts in Tanzania, SIIA Occasional Paper, 257 pp. 1-17. Retrieved January 9, 2018, from [www.saiia.org.za/] site visited on 8 June 2016.

Marquis, C. and Tilcsik, A. (2016). Institutional Equivalence: How industry and community peers influence corporate philanthropy. *Organization Science* 27(5): 1325–134. <http://dx.doi.org/10.1287/orsc.2016.1083>.

Massoi, L. W. (2015). Land conflicts and the livelihood of Pastoral Maasai Women in Kilosa District of Morogoro, Tanzania. Department of Conflict and Development Studies, Ghent University. Reports. *Afrika Focus* 28(2): 107-120.

Meur, P. L., Hochet, P., Shem, M. and Touré, O. (2006). Conflict over access to land and water resources within sub-saharan dry lands: Underlying actors, conflict dynamics and settlement processes GRET-FAO LEAD Final Report.

Msuya, A. J. (2009). Analysis of Pastoralists and Farmers in Northern part of Tanzania from Land Administration perspective Analysis of Pastoralists and Farmers in Northern part of Tanzania from Land Administration perspective. *Geo-Information Science*. 76pp.

Mung'ong'o, C. and Mwamfupe, D. (2003). *Poverty and changing livelihoods of migrant Maasai pastoralists in Morogoro and Kilosa districts, Tanzania. Research on Poverty Alleviation*.

Mwamfupe, D. (2015). Persistence of farmer-herder conflicts in Tanzania. *International Journal of Scientific and Research Publications* 5(2).

Mwasha, D. I. (2016). Farmer-pastoralist conflict in Kilosa District, Tanzania: A climate change orientation. A Dissertation for Award Degree of Master of Arts in Rural Development of Sokoine University of Agriculture. Morogoro, Tanzania. 98pp.

Nkhambaku, W. E. (2014). Assessing the role of local authority institutions on peasants-pastoralists land use conflicts mitigation in Tanzania: A Case of

Kishapu District in Tanzania. A Dissertation for Award Degree of Master of Human Resource Management of Open University of Tanzania. pp 1-81.

Nzogela, M. L. (2014). Land conflicts between pastoralists and farmers in Tanzania: Approaches for Amicable Enforcement. Land Management and Valuation Ardhi University Dar es Salaam-Tanzania.

Norman, A. S. (2013). The challenges of managing elections in Africa. *ZENITH International Journal of Business Economics and Management Research* 3(5): 001-007.

Oyama, S. (2014). Farmer-Herder Conflict, Land Rehabilitation, and Conflict Prevention in the Sahel Region of West Africa. *African Study Monographs* 50: 103–122.

Powers, D. A. and Xie, Y. (2000). *Statistical Methods for Categorical Data Analysis*. London: Academic Press. 301pp.

Raleigh, C., Jordan, L. and Salehyan, I. (n.d.). Assessing the Impact of Climate Change on Migration and Conflict.

Saruni, P. L., Urassa, J. K. and Kajembe, G. C. (2018). Forms and Drivers of Conflicts between Farmers and Pastoralists in Kilosa and Kiteto Districts, Tanzania, 8, 333–349. <http://doi.org/10.17265/2161-6256/2018.06.001>.

Scott, W. R. (2004). Institutional Theory : Contributing to a Theoretical Research Program.

Security, F., Development, L., Office, P. and Government, L. (2007). United Republic of Tanzania National Sample Census, V(December).

Semberya, B. Y. D. (2014). Farmers, pastoralists conflicts : Where have we failed ? Guardian Newspaper, (January). Retrieved from [<http://www.ippmedia.com/frontend/?l=63745>] site visited on 8 June 2016.

Shivji, I. G. and Kibamba, D. (2002). Mwongozo wa Haki za Ardhi Tanzania. HAKIARDHI, Dar es Salaam.

Tonoyan, V. and Strohmeier, R. (2010). Corruption and entrepreneurship: How formal and informal institutions shape small firm behavior in transition and mature market economies. *Entrepreneurship Theory and Practice* 34(5): 803–831.

Ukamaka, D. M., Danjuma, S. E., Mbolle, C. J., Innocent, E. and Mbadiwe, I. E. (2017). *Livelihood issues in herdsman- farmers' conflict among farming communities in Kogi State, Nigeria*, 12(24): 2105–2115. <http://doi.org/10.5897/AJAR2017.12319>.

USAID (2010). Tanzania Property Rights and Resource Governance Profile. 40pp.

Wehrmann, B. (2008). Land Conflicts-A practical guide to dealing with land conflicts, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH German.

Zenger, T., Lazzarini, S. and Poppo, L. (2002). Informal and formal organization in new institutional economics. *New Institutionalism in Strategic Management* 19: 277–305. <http://doi.org/10.2139/ssrn.319300>.

CHAPTER FIVE

5.0 Summary of Major Findings, Conclusions and Recommendations

5.1 Summary of Major Findings and Conclusions

This thesis aimed to assess the role of formal and informal institutions in mitigating natural resource-use conflicts between farmers and pastoralists in Kilosa and Mvomero Districts. The specific issues addressed were to examine major drivers and consequences of conflicts between farmers and pastoralists, to determine how conflicts between farmers and pastoralists are mitigated in Kilosa and Mvomero districts and to assess the role of formal and informal institutions in mitigation of conflicts.

To address the issues highlighted above, the study explored drivers and consequences of recurrent conflicts between farmers and pastoralists. The study observed that socio-economic factors, environmental factors, over stocking, unethical behaviour, policy and regulatory deficiencies were the key drivers of recurrent conflicts between farmers and pastoralists. Therefore, the study observed that pastoralist activities such as grazing, and search for water have a higher potential of fueling conflicts than farmers activities who are sedentary in nature. The findings of this study show that farmers were often the more vulnerable group to such conflicts for the main reason that they were in sedentary settlements. This suggests that recurrence of such conflicts is mostly driven by lack of security of land tenure on that most smallholder producers depend for their livelihoods. Policy deficiencies and contradictions have

been exploited by corrupt elite to the detriment of the poor farmers and pastoralists, in such a way that pastoralists use their economic power to bribe magistrates and the police instead of compensating the farmers whose crops have been damaged. Such practices expose local people to poverty and insecurity. Therefore, the overall impact of these will result in instability and would undermine any meaningful efforts toward achieving sustainable development in the country.

This study explored the involvement of formal and informal institutions in mitigating conflict between farmers and pastoralists. The role of formal and informal institutions in mitigating conflicts were to promote social justice and equality, act as guideposts, provide appropriate ways of mitigating conflicts, respecting one another, managing and controlling social relationship and finally maintain sense of stability and loyalty. Therefore, the application of formal and informal institutions can work cooperatively to bring social relationship and harmony to the society in mitigating conflicts between farmers and pastoralists. This is to say that institutions (formal and informal) cannot work separately, rather cooperatively, to support each other in mitigating conflicts.

Furthermore, the findings revealed that the presence of institutions responsible for controlling grazing, community willingness and formal and informal participation in conflicts mitigation had statistically significant influence on the role played by formal and informal institutions in mitigation of conflicts which implies the two communities (farmers and pastoralists) stay together in harmony means conflicts solving.

This thesis came up with strategies in mitigation of conflict between farmers and pastoralists such as establishing pasture land, regulating number of animals to keep, controlling migration of other ethnic groups and guarantee water right for farmers and pastoralists. The thesis observed that the strategies for mitigation of conflict were contributors to peace and harmony between farmers and pastoralists due to recurrence of conflicts between the two groups. This recurrence of conflicts was associated with competition for natural resources based such as pastures and water. Therefore, the paper perceived that, in order for the two communities to be able to live together in peace and harmony, there should be mitigation of conflicts using ways that have worked elsewhere.

Therefore, engaging all these strategies will eliminate conflicts between farmers and pastoralist because there would be social co-existence among them. These conclusions have relevant implication to CRM in several ways such as developing expectation and combining acknowledgement between farmers and pastoralists. However the CRM didn't work because the conflicts between the two conflicting parties were still existing.

From the study, this thesis shows that the recommended measures for mitigation of conflict that are propounded by government and various stakeholders including civil societies are important for mitigation of conflict.

The thesis concludes on roles of institutions in mitigation of natural resource-use conflicts that confirms conflict theory according to Karl Marx states that conflict can

be mitigated (resolved) through use of force (coercive measures). Also the thesis concludes not only conflict theory being applicable to resolve conflict but rather conflict resolution theory can be also applied to resolve conflicts by using peaceful approach. Therefore this thesis concludes that it depends on the context – there is no one shoe fits all – both coercive measures and peaceful approaches can be used depending on the context or in some mix depending on the context. So this thesis confirms and extends the two theories.

5.2 Recommendations

The thesis recommends that having development of comprehensive strategies for mitigation of conflict between farmers and pastoralists would be useful for mitigation of conflicts between farmers and pastoralists and this would empower both groups thus enabling them to come together and mitigate their problems facing them.

Since policy deficiency and contradictions have resulted into unethical practices such as corruption, there is a need for the government to effectively establish a transparent and accountability committee where their obligation will be critically observing rules, regulations as far as land tenure is concerned. Additionally, the thesis recommends that alleged corrupt practices and the reluctance among government officials in relation to taking action in time in conflict affected areas should be investigated by the relevant authorities such as the Prevention and Combating of Corruption Bureau (PCCB) in order to identify the source of these vices and institute legal procedures/actions against the offenders.

Governmental organs such as village land use committee, village environmental committee, village land council should emphasize more cooperation between institutions because by doing so it becomes easy to achieve amicable solutions over land disputes. This cooperation can be attained through consensual approaches.

Involvement of institutions (formal and informal) in mitigating conflicts between farmers and pastoralists can play a big role. Therefore, there is a need for government actors and traditional leaders such as Land Officer, District Agricultural and Livestock Development Officer (DALDO), Ward Livestock Extension Officer (WLEO), Ward Executive Officer (WEO), Traditional leaders to work together with farmers and pastoralists so as to enhance their roles in mitigating conflicts between farmers and pastoralists in the study area.

Based on the study findings it is recommended that the government through the Ministry of Agriculture and Ministry of Livestock and Fisheries should ensure that pastoralists are provided with the essential services such as water in order to minimize movement of their herds of livestock from their designated villages to other areas in search for water. This would, as a result, minimize farmers' crop damage which has been a major source of conflict.

This study recommends that; for the sake of having peace, harmony and tranquility there should be an intensification of participation and creativity among the two communities in mitigation of conflicts so as to express their fear and vision, worry,

eliminate hatred and enmity between themselves. Further to that, more studies on determining factors for adaptation of the strategies on mitigation conflicts between farmers and pastoralists are also recommended in order to enable interventions, which will improve adaptive capacity among the local communities including farmers and pastoralists.

5.3 Recommendations for Further Research

After assessing the role of formal and informal institutions in mitigating resource-based conflicts between farmers and pastoralists in Kilosa and Mvomero districts, it is clear that the problem is not land use, pasture and water. Even though the conclusion is that physical planning should be done so as to protect farmers and pastoralists' rights through preventing others from invading the farmers and pastoralists lands, research on that arena is required to grasp what exactly is the problem, despite the government interventions having been done conflicts between the two groups still persists.

While examining the role of formal and informal institutions in mitigating conflicts between farmers and pastoralists were considered essential in determining how such conflicts were mitigated, stakeholders such as the government, non-governmental organisation (NGOs) and communities should adopt these strategies found in order to improve the existing strategies which will lead to permanent solutions or eradicate conflicts between farmers and pastoralists.

The study observed that the strategies for mitigation of conflicts were contributors to peace and harmony between farmers and pastoralists due to recurrence of conflicts between the two groups. This recurrence of conflict was associated with competition for natural resources such as pastures and water. Therefore, the Government and stakeholders will come up with more appropriate strategies for interventions which will eventually eradicate conflicts between farmers and pastoralists.

The study has revealed that there is lack of mitigation skills, participation determinants of adaptation measures in dissolving conflict between farmers and pastoralist. Thus, there is a need for further studies on determining factors for mitigation and adaptation measures to identify barriers confronting local communities in addressing conflicts. A study of this nature is crucial as it will come up with the possible recommendations on how to help local communities improve their capacity to mitigate conflicts in peace and harmony without hurting others.

Further to that, more studies on determining factors for adaptation of the strategies on mitigation conflicts between farmers and pastoralists are also recommended in order to enable interventions, which will improve adaptive capacity among the local communities including farmers and pastoralists.

5.4 Contribution of the Study

5.4.1 Contribution to the body of knowledge

The study makes a contribution on academic debate on roles of institutions in mitigation of natural resource-use conflicts. Particularly, the thesis contributes to the

body of knowledge on confirms conflict theory according to Karl Marx states that conflict can be mitigated (resolved) through use of force (coercive measures). Also adheres to conflict resolution theory according to Tonah states that conflict can be resolved using peaceful approach. This thesis contribute to the body of knowledge that it depends on the context – there is no one shoe fits all – both coercive measures and peaceful approaches can be used depending on the context or in some mix depending on the context. So this thesis confirms and extends the two theories.

5.4.2 Theoretical reflection

In this study, Conflict Theory, Conflicts Resolution Theory and Institutional Theory were applied to describe how communities respond to conflicts catastrophe through socio-economic activities contributing to their livelihood.

Theoretically, the study findings concur with the explanations offered by the above mentioned theories. For instance, the conflict theory affirms the use of power and coercion in finding solutions between farmers and pastoralists however, to some extent this approach can be used to calm the conflicts but not solving it, while conflict resolution theory use participatory method in a peaceful way to get solution between the conflicting parties and institutional theory solely used to brining order to social relations, reducing uncertainties so as to ensure continuity of social relations which need the application of formal institutions such as constitutions, laws, policy to implement social relations, other contexts require informal institutions such social norms, custom and traditions, ritual to bring up the relationship of the society.

This thesis has adapted the theories which have contributed comprehensive approach on dissolving conflicts between farmers and pastoralists that those theories can be applied to bring peace and tranquillity between the conflicting parties.

The Conflict Resolution Model offers a systematic approach for understanding occurrence of a conflict and individuals' responses to it. Such responses are geared towards reducing the likely impacts and sustaining the livelihood under conflicts resolution. This study regards conflicts between farmers and pastoralists as a disaster affecting farmers, pastoralists and community. In responsibly to this catastrophe (conflicts), farmers and pastoralists should adopt mitigation strategies and adaptation measures for the sake of reducing or eradicating conflicts between farmers and pastoralists so as to create co-existence between conflicting parties.

Importantly, institutional theory apart from maintaining the application of formal and informal institution in bring co-existence between the two parties yet there should be awareness about land conflict and their effects should be provided so that if something happens against each part, they should look for negotiation instead of going into fighting which leads to death of people, property destruction and reduction of motivation of investment. However, education with respect to land laws and regulations should be provided to both pastoralists and farmers through campaign as most of pastoralists.

APPENDICES

Appendix 1: Formula for sample size determination according to Kothari (2004)

$$n = \frac{Z^2 pqN}{e^2 (N-1) + Z^2 pq} \quad (\text{Kothari, 2004})$$

Where: n = Size of sample

N= size of population of the community =115106

P:= population reliability (or frequency estimated for a sample size (n), where P is 0.5 which is taken for all developing countries population and p+q=1

e=Margin of error considered is 5% for this study

$Z_{\alpha/2}$ =Normal reduced variable at 0.05 level of significance Z is 1.96

The sample size according to the above formula will Kilosa and Mvomero study

$$\text{areas will be: } n = \frac{(1.96)^2 \times 0.5 \times 0.5 \times 115106}{0.05^2 \times (115106 - 1) + [(1.96)^2 \times 0.5 \times 0.5]} = 384 \text{ Individuals}$$

Proportionally, based on the wards population, the sample size for both Kilosa and Mvomero will be calculated as follows:

Sample size for @ specific district=

$$\frac{\text{ward population } (n_1)}{\text{Universal population } (N)} \times \text{Samplesize } (n)$$

$$n = \frac{56728}{115106} \times 384 = 189$$

Sample for Kilosa = ¹ 115106

$$n = \frac{58378}{115106} \times 384 = 195$$

Sample size Mvomero = ² 115106

**Appendix 2: An interview
guide for focus group
discussions**

- Main natural resources available
- Main use of the available natural resources
- Natural resource use conflict and underline causes
- Existing institutions for mitigating resource use and conflict resolution in the study area
- Incentives and disincentives for people's participation in mitigating conflict resolution

5. In what ways do you think different user groups in agricultural villages/ localities

Causes

1. What are the causes of the conflicts?
2. Which group frequently instigates the conflicts than the other?
3. Why these conflicts are outstanding in this area?
4. What internal and external catalysts to the conflicts?
5. How can you relate nomadism to the causes of the conflicts?

Socio-economic impact of the land use conflicts

1. What are socio-economic impacts of land use conflicts?
2. Which group is mostly affected by land use conflicts?
3. Can social and psychological damaged by land conflicts be cured?

Resolution and Management

1. What are solutions to the conflicts at grassroots level?
2. What measures to be considered in solving the conflicts at higher (district, regional, national) levels?
3. Which measures are experienced to be effective?
4. Are the solutions/measures in favour of any user group? If yes. How do you manage to maintain peace?

can both use land
peacefully?

1. Employed in a public service ()
2. Wage labourers ()
3. Searching for new grazing areas ()
4. New farming area ()
5. Schooling ()
6. Escaping conflict ()
7. Others (Specify)

1.15 What is your ethnicity

1.16 What is the domicile area of your ethnicity group

1.17 Have ever migrated

1. Yes (), 2. No ()

1.18 If answered yes in number 1.17 above, indicate the frequency of shifting

Period	Place	Number of shift	Reason of shift
0-5 past years			
6-10 past years			
11-15 past years			
>15 years			

1.19 What were main reasons for shifting?

1. Search for grazing land ()
2. Search for agriculture land ()
3. Search for water points ()
4. Avoiding livestock disease ()
5. Avoid resource conflicts ()
6. Easy access to market facility ()
7. Others (Specify)

2.0 INFORMATION ON LAND USE AND OWNERSHIP

2.1 What is the type of land ownership?

1. Communal ()
2. State ()
3. Private ()
4. Open access ()
5. Others (Specify)

2.2 Total land owned by the household (ha)

2.3 What type of land acquisition?

1. Bought ()
2. Rented ()
3. Inherited ()
4. Hired ()
5. Village government allocation ()
6. Others (Specify)

24 How do you use your land?

- 1. Cultivating ()
- 2. Grazing ()
- 3. Both ()
- 4. Others (Specify)

25 For how have been using this land

- 1. Less than 1 year ()
- 2. 1 to 3 years ()
- 3. 4 to 8 years ()
- 4. More than 8 years ()

26 Is the land you own adequate for the activity mentioned in number 2.4

- 1. Yes (), 2. No ()

27 If answered no in number 2.6 above, how do you manage such scarcity?

- 1. Reduce crops ()
- 2. Reduce number of animals ()
- 3. Buy additional food ()
- 4. Others (Specify)

2.8.If land was bought, how much did you pay per plot (Tshs)

2.9 If the land is rented, how much do you pay per plot (Tshs)

2.10 Is the land owned enough for farming/livestock production?

2.11 If not, why?

2.12 How many livestock do you have and what feeding system are you using? Fill this table

Livestock type	Number	Feeding system
Cattle		
Goat		
Sheep		
Donkey		
Pigs		

2.13 If keeping livestock where do you graze your livestock?

- 1. Communal grazing land ()
- 2. In the farming field after harvesting ()
- 3. In the farming field before harvesting ()
- 4. Fallow land ()
- 5. Open access land ()
- 5. Established pastures ()
- 6. Privately owned pastures ()
- 7. Others (Specify)

- 2.14 If there are access to crop residue of field, which terms do you use?
1. Free ()
 2. Purchase ()
 3. Barter exchange ()
 4. Others (Specify)
- 2.15 If you are not allowed by farmer, what do you do?
1. Leave ()
 2. Graze by force ()
 3. Negotiate ()
 4. Others (Specify)
- 2.16 Is the available grazing land adequate?
1. Yes (), 2. No ()
- 2.17 If answered no in question number 2.16 above, what is the main reason?
1. A large number of animals ()
 2. Poor pasture ()
 3. Encroachment by farmers ()
 4. Increased population pressure ()
 5. Others (Specify)
- 2.18 Do you face pasture shortage?
1. Yes (), 2. No ()
- 2.19 If answered yes in the questions number 2.11 above, at what time of the year do you face pasture shortage?
1. Dry season ()
 2. Rain season ()
 3. All year around ()
 4. Others (Specify)
- 2.20 How do you alleviate the situation mentioned in question number 2.12 above?
1. Use crop residue ()
 2. Move herds to grazing areas in other villages ()
 3. Others (Specify)
- 2.21 If you use crop residues how do you access it?
1. Readily available ()
 2. Purchase ()
 3. Exchange with manure ()
 4. Negotiate with farmers ()
 5. Others (Specify)
- 2.22 Is there any institution that control grazing procedures in your village?
1. Yes (), 2. No ()
- 2.23 If answered yes in question 2.22 above, which institution control grazing matter?
1. District council authority ()
 2. Village government authority ()

- 3. Customary leadership ()
- 4. Farmers groups ()
- 5. Pastoralist groups ()
- 6. Central government ()
- 7. Others (Specify)

2.24 Are there any regulations that limit stocking rate in your village?

- 1. Yes (), 2. No ()

2.25 If answered yes in question number 2.24 above, how do the regulations limit stocking rate?

- 1. Each livestock keeper is restricted to keep not more than 70 animals units ()
- 2. Each livestock keeper is restricted to keep not more than 50 animals units ()
- 3. Each livestock keeper is restricted to keep not more than 100 animals units ()
- 4. Others (Specify)

2.26 If answered yes in question number 2.25 above, which institution is responsible for stocking rate regulations?

- 1. District council authority ()
- 2. Village government authority ()
- 3. Customary leadership ()
- 4. Grazing management group ()
- 4. Farmers groups ()
- 5. Pastoralist groups ()
- 6. Central government ()
- 7. Others (Specify)

2.27 Are there any regulations that restrict grazing in certain areas?

- 1. Yes (), 2. No ()

2.28 If answered yes in question number 2.27 above, what are the restricted area?

- 1. Crop farms ()
- 2. Forest reserves ()
- 3. Game reserves ()
- 4. Lake shores ()
- 5. Others (Specify)

2.29 What institutional right do you have over your farm holdings?

.....

2.30 How does the land right over utilization and choice decision making

- 1. Limit expansion of farm holdings ()
- 2. Limit improvement of my farming systems ()
- 3. Limit diversification of enterprises ()

2.31 Are there in-migration of other ethnic group affect the farm/land holding you previously had?

- 1. Yes () 2. No ()

2.32 If yes in 2.31 above, how do you handle the situation?

- 2.33 What are the reasons for the existing land scarcity?
1. Increased Human population ()
 2. Increase of livestock population ()
 3. Increase of acreage for both cash and farm crops ()
 4. In migration of people from other places ()
- 2.34 How do you do to solve problems of land scarcity?
- 2.35 Which types of crops do you grow?
1. Annual..... ()
 2. Perennial..... ()
 3. Both..... ()
 4. Others (Specify)
- 2.36 Do you allow pastoralists to feed their livestock on crop residue and land you own?
1. Yes (), 2. No ()
- 2.37 If answered yes in number 2.36 above, in what terms do you allow pastoralists to use your crop residues after harvest?
1. Give freely ()
 2. Sell ()
 3. Barter exchange ()
 4. Others (Specify)
- 2.38 If answered no number 2.36 above, did they ever graze their livestock in your farm without permission?
1. Yes (), 2. No ()
- 2.39 If answered yes in number 2.18 above, what did you do?
1. Report to the authority ()
 2. Keep quite ()
 3. Resolve with pastoralists ()
 4. Revenge by destroying their properties ()
 5. Others (Specify)

3.0 INFORMATION ON NATURAL RESOURCES CONSERVATION, UTILIZATION AND POSSIBLE CONFLICTS

- 31** What are the available natural resources in the area?
1. Grazing/arable land ()
 2. Water catchments area ()
 3. Forest resources for different use ()
 4. Others (Specify)
- 32** Who make decisions on the use of the available land resources like water, grazing land?
1. Village leaders ()
 2. Environmental committees ()

3. Village government ()
4. Others (Specify)
- 33** What are the uses of available natural resources in your village?
- 34** What are the types of conflicts in the area?
1. Conflict over land use and water between farming and livestock producers ()
 2. Between farmers and farmers ()
 3. Between pastoralists and pastoralists ()
 4. Between elders and young ()
 5. Others (specify)
- 35** What are causes of existing conflict in the area?
1. Crop damage by pastoralists ()
 2. Human injury and/or loss of human life ()
 3. Destruction of water points for domestic use by pastoralists ()
 4. Socio-economic and demographic factors ()
 5. Destruction of properties e.g. house burnt ()
 6. Others (Specify)
- 36** What are the other factors underlying conflicts in 3.5 above?
1. Increase of human population ()
 2. Increase of livestock population ()
 3. Land scarcity for farming and grazing ()
 4. Farm are located near the pastureland ()
 5. Village itself is very close to farming land or pastureland ()
 6. Water shortage during the dry season forcing pastoralists to move to water points ()
 7. Farms are located to the route/corridor of pastoralists ()
- 37** Mention the main types of crops damaged and types of animals responsible as shown 3.5 above.

4.0 INFORMATION ON LOCAL INSTITUTIONS FOR CONFLICTS MITIGATION

- 4.1** Are there any institutions for mitigating conflicts in the village?
1. Yes () 2. No ()
- 4.2** If yes, what are these institutions?
1. Formal institutions ()
 2. Informal institutions ()
- 4.3** How do these institutions deal with the use of resources in the area?.....
-

- 44 What are the existing informal institutions in the area?
1. Council of village elder ()
 2. Traditional guards ()
 3. Traditional healers ()
 4. Others (Specify)
- 45 What are the existing formal institutions in the area?
1. Village natural resources committees ()
 2. Village government ()
 3. Ward tribunal ()
 4. Police ()
 5. Religious ()
 6. Magistrate ()
 7. Others (specify)
- 46 How these institutions contribute in mitigating resource-based conflict in your area?
-
- 47 Which institution (s) regulates resource-based conflict in the village?
1. Customary authority ()
 2. Farmers groups ()
 3. Pastoralists groups ()
 4. Grazing management group ()
 5. Formal institution set by Government ()
 6. Village government ()
 7. Others (Specify)

CONFLICT MITIGATION

1. Do you know the existence of resource-based conflict between farmers and pastoralists in your village? 1. Yes (), 2. No ()
2. If answered yes in question number 1 above, when was resource-based conflict between farmers and pastoralists were first reported in the village?
 1. Five year (5) ago ()
 2. Ten year (10) ago ()
 3. Fifteen year (15) ()
 4. More than fifteen (15) years ago ()
 5. Others (Specify)
3. During which time of the year do incidents of resource-based conflict between farmers and pastoralists severely occur?
 - i. During the rain season ()
 - ii. During the dry season ()
 - iii. All over the year ()
 - iv. Others (Specify)
4. In which land do resource-based conflict between farmers and pastoralists regularly occur?

- i. In communal grazing land ()
 - ii. In forest reserve land ()
 - iii. In farms with planted crops ()
 - iv. In harvested field ()
 - v. Others (Specify)
5. What are the main cause of resource-based conflict between farmers and pastoralists?
- i. Destruction of crops by pastoralists cattle ()
 - ii. Blocking of stock routes by crop farmers ()
 - iii. Encroachment of grazing land by farmers ()
 - iv. Scrambling for water between farmers and pastoralists ()
 - v. Others (Specify)
6. Do resource-based conflict between farmers and pastoralists have any significant effects on the community cohesiveness?
1. Yes (), 2. No ()
7. If answered yes in question number 6 above, what are effects of existing resource-based conflict between farmers and pastoralists?
- 1. Victims sustaining physical injuries and sometimes death ()
 - 2. Affected farmers run away due to insecurity caused by violence ()
 - 3. Interruption of livestock production ()
 - 4. Children stop going to school ()
 - 5. Others (Specify)
8. Is this community aware of the existing resource-based conflict between farmers and pastoralists?
1. Yes (), 2. No ()
9. If answered yes in question number 8 above, what are the peoples' attitudes toward the resource-based conflict between farmers and pastoralists?
- 1. Strongly positive ()
 - 2. Positive ()
 - 3. Neutral ()
 - 4. Negative ()
 - 5. Strongly negative ()
10. Are there any local committees that resolve resource-based conflict between farmers and pastoralists in this village?
1. Yes (), 2. No ()
11. If answered yes in question number 10 above, what mechanisms are used to resolve resource-based conflict between farmers and pastoralists locally?
- 1. Local leader are used to mitigate resource-based conflict between farmers and pastoralists. ()
 - 2. Village government leadership is used to mitigate social conflicts between farmers and pastoralists ()
 - 3. Ward leadership used to mitigate social conflicts between farmers and pastoralists ()
 - 4. Court at primary and district level are used to mitigate individual conflict mitigation between farmers and pastoralists. ()

5. Religion leaders are used to mitigate social conflict between farmers and pastoralist. ()
6. Other (Specify)
12. If answered yes in question 11 above, do the committees involve representatives from both farmers and pastoralists communities?
1. Yes (), 2. No ()
13. If answered yes in question number 12 above, what is the composition of the committee
1. It consists of indigenous elders
2. Consists of prominent members of local community
3. Consists of religious leaders
4. Others (Specify)
14. If answered yes in question 12 above, how do you rate the effectiveness of the committee in resolving social conflicts?
1. Extremely poor ()
2. Below average ()
3. Average ()
4. Above average ()
5. Excellent ()
15. In your opinion do you think that the committee encounters and problems in conflict resolving resource-based conflict between farmers and pastoralists?
1. Yes (), 2. No ()
16. If answered yes in the question 15 above, what are problems uncouncted by the committee?
1. It is not powerful ()
2. Its member has little skill in conflict in conflict mitigation ()
3. Some of its members are corrupt ()
4. Others (Specify)
17. Are there any bylaws in the village for resource-based conflict mitigation between farmers and pastoralists?
1. Yes (), 2. No ()
18. If answered yes in question 17 above, how do you rate the effectiveness of the bylaws in mitigating resource-based conflict between farmers and pastoralists?
1. Extremely poor ()
2. Below average ()
3. Average ()
4. Above average ()
5. Excellent ()
19. Are there bylaws at a ward level for resource-based conflict mitigation?
1. Yes (), 2. No ()
20. If answered yes in question number 19 above, how do you rate effectiveness of the bylaws for mitigating resource-based conflict between farmers and pastoralists?
1. Extremely poor ()
2. Below average ()
3. Average ()

4. Above average ()
5. Excellent ()
21. Do individual village leader participate in resource-based conflict mitigation between farmers and pastoralists?
1. Yes (), 2. No ()
22. If answered yes in the questions number 21 above, how do you rate their individual effectiveness in resolving resource-based conflict between farmers and pastoralists?
1. Extremely poor ()
2. Below average ()
3. Average ()
4. Above average ()
5. Excellent ()
23. Do individual ward leaders participate in resource-based conflict mitigation between farmer and pastoralists?
1. Yes (), 2. No ()
24. If answered yes in the question number 23 above, how do you rate their individual capacity in resource-based conflict mitigation between farmers and pastoralists?
1. Extremely poor ()
2. Below average ()
3. Average ()
4. Above average ()
5. Excellent ()
25. Do religious leaders participate in resource-based conflict mitigation between farmer and pastoralists?
1. Yes (), 2. No ()
26. If answered yes in the question number 25 above, how do you rate their religious leaders capacity in resource-based conflict mitigation between farmers and pastoralists?
1. Extremely poor ()
2. Below average ()
3. Average ()
4. Above average ()
5. Excellent ()
27. What is the role of local government at district level in resource-based conflict mitigation between farmers and pastoralists?
1. Enforcement of bylaws ()
2. Enforcement of land use planning ()
3. Enforcement of land tenure ()
4. Educating the community ()
5. Others (Specify)
28. What is the role of the central government in resource-based conflict mitigation between farmers and pastoralists in your village?
1. Enforcement of bylaws ()
2. Enforcement of land use planning ()
3. Enforcement of land tenure ()

4. Others (Specify)
29. How do rate the effectiveness of the central government in resolving resource-based conflict between farmers and pastoralists in your village?
1. Extremely poor ()
 2. Below average ()
 3. Average ()
 4. Above average ()
 5. Excellent ()
30. Is there any bribe giving/receiving in resource-based conflict mitigation farmers and pastoralists in your village?
1. Yes (), 2. No ()
31. If answered yes in question 30 above, who usually starts to bribe the other?
1. Farmers ()
 2. Pastoralists ()
 3. Leaders ()
 4. Others (Specify)
32. What are your suggestions for effective resource-based conflict mitigation between farmers and pastoralists?
1. At village level
 - i. Reinforcement/Establishment of traditional conflicts mitigation committee between farmers and pastoralists ()
 - ii. Reinforcement/Establishment of conflicts mitigation committee between farmers and pastoralists by village government ()
 - iii. Enforcement of existing bylaws ()
 - iv. Others (Specify)
 2. At ward level
 - i. Reinforcement/Establishment of conflict mitigation committee between farmers and pastoralists ()
 - ii. Enforcement/Establishment of existing bylaws ()
 - iii. Accountability of ward leaders in enforcement of bylaws established by villages and district ()
 - iv. Others (Specify)
 3. At district level
 - i. Reinforcement of conflict mitigation committee at district level ()
 - ii. Enforcement of existing bylaws ()
 - iii. Demarcation of land for different uses ()
 - iv. Educating the community and community leaders (At village and ward levels) on strategies for conflict mitigation between pastoralists and crop farmers ()
 - v. Accountability of leaders ()
 - vi. Others (Specify)

THANK YOU FOR YOUR COOPERATION