

**LAND USE PLAN AND FARMERS-PASTORALISTS CONFLICT IN MVOMERO
DISTRICT: IT'S IMPLICATIONS ON HOUSEHOLD FOOD PRODUCTION**

BY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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ABSTRACT

This research has been done in Mvomero District to examine the effects of land use plan on farmers-pastoralists conflict and its implication on food production at the household. Specifically, the study examining people's attitude towards land use plan, assessing effects of land use plan on farmers-pastoralists land conflict between and to examining the effects of land use plan programme on household food production. A cross section research design was adopted. Systematic random sampling was used to acquire a total sample size of 120 farming households, 60 from a village with land use plan and 60 from a village without land use plan. Data were collected through administered questionnaires, key informant interview and focus group discussion. Statistical Package for Social Science programme was used for analysing quantitative data, whereby descriptive statistics, cross tabulation and t-test analysis were carried out. The content analysis was used to analyse qualitative information. The findings show that the average conflict cases were two and three per farming season in the village with and without land use plan, respectively. However, the findings were not significantly different at $p=0.05$ level. On food production, results show that the average number of maize bags produced in the land use plan village was 5.49 compared to 4.42 bags per acre in the village without land use plan. Based on the study findings, it is concluded that land use plan has no significant effects on household food production since cases of land conflicts in the study areas still persist. The study recommends that land use plan needs a strong institutional organ and committed leadership.

DECLARATION

I, NHOJO ALLAN KUSHOKA, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and has never been submitted nor concurrently being submitted for a degree award in any other institution.

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The above declaration is confirmed

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DEDICATION

This work is dedicated to my father Mr. Allan M.M. Kushoka, my mother Sarah S. Itolya, and my beloved wife Grace John Mashimba.

TABLE OF CONTENT

ABSTRACT.....	ii
DECLARATION.....	iii
COPYRIGHT.....	iv
ACKNOWLEDGEMENT.....	v
DEDICATION.....	vi
TABLE OF CONTENT.....	vii
LIST OF FIGURES.....	xi
LIST OF ABBREVIATIONS.....	xii
CHAPTER ONE.....	1
1.0 INTRODUCTION	1
1.1 Background Information.....	1
1.2 Problem Statement.....	2
1.3 Problem Justification.....	3
1.4 Objectives of the Study.....	3
1.5 Research Questions.....	4
CHAPTER TWO.....	5
2.0 LITERATURE REVIEW.....	5
2.1 Overview.....	5
2.2 Land conflict.....	5
2.3 Food Security.....	8
2.5 Land Use Plan.....	10
2.6 Tanzania National Land Policy.....	12
2.7 Village Land Use Planning and Procedures.....	13

2.8 Related Previous Studies.....	16
2.9 Research Gap.....	17
2.10 Conceptual Framework of the Study.....	17
3.0 RESEARCH METHODOLOGY.....	20
3.1 Overview.....	20
3.2 Study Location and Justification of the Study Area.....	20
3.3 Research Design.....	21
3.4 Sampling Procedure.....	22
3.6 Data Collection Methods.....	22
3.7 Data Processing and Analysis.....	24
3.8 Ethical Considerations.....	25
4.0 RESULTS AND DISCUSSION	26
4.1 Overview.....	26
4.2 Demographic and Socio-Economic Characteristics of Respondents	26
4.3 Household Farming Characteristics.....	28
4.4 Conflicts on Land Uses.....	32
Respondents of the study were argue that land committees are biased and corrupt and that is why people prefer taking their cases to VEOs rather than to the committees. They said that, “land court is too far and its cost us”. That’s why they have trust on VEOs because these are community leaders elected by the people themselves as opposed to committee members who are nominated. They said that, “village leaders are our people, although we report cases but are either delayed or not processed at all”.....	37
4.5 Respondents attitude towards LUP.....	37
4.6 Effect of LUP on Food Production	39
CHAPTER FIVE.....	43

5.0 CONCLUSION AND RECOMMENDATION.....	43
5.1 Overview.....	43
REFERENCES.....	46
APPENDICES.....	50
Appendix 1: Questionnaire.....	50
Appendix 2: Checklist.....	53

LIST OF TABLES

Table 1: Socio-demographic characteristics of respondent (N=120).....	28
Table 2: Mean size of farm in acre owned and cultivated by the household.....	29
Table 3: Type of crops produced.....	30
Table 4: Farming inputs applied by the households (N=120).....	32
Table 5: Respondents who face land conflict (n=107).....	32
Table 6: Correlation of a walking time taken and land conflict cases.....	34
Table 7: Institutions where farmers report land conflict cases.....	36
Table 8: Source of information about LUP (n=52).....	38
Table 9: Comparison of maize harvested between village with and without LUP.....	40
Table 10: Time for consumption on produced maize.....	41

LIST OF FIGURES

Figure 1: Means of land acquisition in the village with LUP and non LUP village.....30

Figure 2: A maize farm destroyed by herd of Pastoralists.....34

Figure 3: Factors contribute to land conflicts.....36

Figure 4: Respondents attitude on land use plan (n=52).....39

LIST OF ABBREVIATIONS

BLC	:	Baseline Survey
CA	:	Content Analysis
CDO	:	Community Development Officers
DED	:	District Executive Director
DILAPS:		Dar Es Salaam Institute for Land Administration and Policy Studies
DLC	:	District Land Council
FAO	:	Food and Agriculture Organization
FGD	:	Focus Group Discussion
Fig	:	Figure
FPC	:	Farmers-Pastoralists Conflict
HBS	:	Household Budget Survey
LUP	:	Land Use Planning
MoLHS:		Ministry of Lands and Human Settlement
NLP	:	National Land Policy
NLUPC:		National Land Use Planning Commission
PBFP	:	Property and Business Formalisation
SPSS	:	Statistical Package for Social Science
URT	:	United Republic of Tanzania
VEO	:	Village Executive Officer
VLUP	:	Village Land Use Plan
VRB	:	Village Register Book
WEO	:	Ward Executive Officer

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Land is one of the major means of production which contains minerals and other resources. All organisms including human beings depend on land as a sole source of life supporting system. There are a number of land uses, which include cultivation, grazing, forestation, game reserves and national parks, residence, water reserve and mining. Tanzania has an area of 942,600 square kilometres and an estimated population of about 28 million people in 1994 (URT, 1997). However, at the end of 2002, population was estimated to increase up to 35 million people while the square kilometres of the land remain the same. This shows that land resources have become scarce, while users continue to compete on them, which is likely to result any eruption of land conflicts. It is 25% out of 94 2600 square kilometres of land is used, as opposed to 75% out of 94 2600 square kilometres of land which is either uninhabited or difficult to manage.

Growth of human and livestock population, climatic change and variability are among reasons causing increased scarcity of natural resources and increasing conflict in many areas especially developing countries like Tanzania. The increased movement of large herds of livestock from traditional keeping areas to low livestock population areas such as Morogoro, Mbeya, Iringa, Rukwa and Ruvuma Regions creates land conflicts in receiving areas (URT, 1997). In Tanzania conflicts over resources such as land, water, and forests are steadily increasing. These conflicts have been observed in Kilosa between pastoralists and agriculturalists (Tsoxo, 2006). The plausible cause of the conflicts is contradictions interest among land users on the natural resources in enhancing their livelihoods.

Food insecurity may be caused by conflicts over land resource, through ceasing of production activities, displacement of people and livestock, insecurity, disability and death as well as destruction of social and economic infrastructure including houses (DILAPS, 2007).

In responding to the problem, the government of Tanzania acted through its National Land Policy (NLP) of 1997, proposed Land Use Plan (LUP). LUP as an intervention designed to solve and avoid disputes on land resources by defining various land uses such as residence, farms, grazing field, industries, national parks and game reserves just to mention a few (URT, 1997). The Land Use Planning as explained by Amler *et al.* (1999) is an iterative process based on the dialogue amongst all stakeholders, aiming at the negotiation and decision for a sustainable form of land use in rural areas as well as initiating and monitoring its implementation. Participation in LUP covers communication and co-operation of all involved participants. The objective of LUP is to increase the planning competence, self responsibility and organizational capacity of disadvantaged target groups. In Tanzania, LUP is done after a thorough study conducted to determine existing land tenure, land use patterns and land capacity, so as to come up with a clear plan that states identifies and demarcates land for residence, cultivation, grazing, water sources, institutional use, industries, reserved areas and on the case of livestock keeping, LUP states a number of cattle that can be managed due to land carrying capacity.

1.2 Problem Statement

Conflicts over land use among different land users worldwide have for long been exist. Findings from different studies show that whenever farmers and pastoralists co-exist; it is likely that conflict will occur. In Tanzania, since independence land conflicts have been

exist in different areas. These land conflict especial farmers pastoralist conflict affecting farming by lead decrease productivity. LUP elsewhere has been pointed out as one of the useful tool for resolving land conflicts that exist among users (NLUPC, 1998). In Tanzania, LUP is being used on the same basis as a tool for resolving land disputes among users. However, little has been done on assessing effects of LUP on resolving land use conflicts between farmers and pastoralists. Although, effects of land conflict are well known, so far little is known on the effects of LUP on food production. Therefore this study intended to examine the effects of LUP on food production at the household.

1.3 Problem Justification

This study, document and provides a better understanding of the linkage between LUP and food production in the areas where farmers-pastoralists co-exist. The study findings would be important for project designers, planners, policy makers and development specialists of Tanzania. The findings will be helpful in formulation and implementation of programmes and reformation of land policies that are socially and culturally relevant and appropriate to various areas in Tanzania.

1.4 Objectives of the Study

1.4.1 General objective

The general objective of study is to assess the effect of LUP on household food security in the areas where farmers and pastoralists co-exist.

1.4.2 Specific objectives

Specifically the study aims to:

- i. Examine people's attitude towards land use plan,

- ii. Assess the contributions of land use plan on decreasing land use conflicts between farmers and pastoralists, and
- iii. Examine the effects of land use plan intervention on food production at household level.

1.5 Research Questions

The study is guided by the following research questions;

- i. What are the people's attitudes towards LUP?
- ii. Does LUP decrease land use conflicts between farmers and pastoralists?
- iii. Does food production increase after Land Use Plan?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview

This Chapter explores in details key concepts of the study. The aim here is to get find validation and relevance of study key concepts like land conflict, land use plan and food production from other studies. This chapter explore the following study's concepts like land conflict, food security and land use plan.

2.2 Land conflict

Conflict theorists assume that societies are in a constant state of change, in which conflict is a permanent feature (Mvena *et al.*, 2000). Conflict does not necessary imply outright violence, it includes hostility, competition, tension, and or disagreement on values or goals. Theorists continue to see conflicts as a potential force for positive social change; its presence being a visible demonstration of society adapting to a new political, economic or physical environment; apart from its negative effects (Shio, 2004). Conflicts can be observed in a situation where two parties are conflicting on resources use strategy like land; which means that a success of one will be detriment to other.

Land conflicts are mainly occurring due to lack of equity, justice, and fairness on the allocation of the available scarcity resources. The conflict over natural resource such as land is universal nowadays (Abba *et al.*, 2008). This means everywhere people are competing for the natural resources to enhance their livelihoods. This is due to decreasing availability of natural resources though increase of population pressure and close mixing

up of human activities, (Emeka, 2005). Such as human activities like farming and livestock keeping which lead to conflicts eruption.

2.2.1 Causes of land conflict

Conflict causes can be defined as those factors which contribute to people's grievances; and can be further described as factors that built into policies, structures and fabric of a society and may create the pre-conditions for violent conflict. Proximate causes are the factors contributing to a climate conducive to violent conflict or its further escalation, sometimes apparently symptomatic of a deeper problem (Abba *et al.*, 2008). Another causes of conflict categorized as triggers, which involves single key acts, events, or their anticipation that will set off or rise violent conflict. Protracted conflicts also tend to generate new causes (example weapons circulation, war economy, culture of violence), which this help to prolong them further. However, it is important to acknowledge that conflicts are multi-dimensional and multi-causal phenomena, that there is no single cause of conflict.

Land conflicts between farmers and pastoralists have been a common feature of economic livelihood in Tanzania. In Tanzania these land conflicts are on increase (Mbwilo, 2004), and the root causes for the increasing conflicts over land resources are due to the increases in human population. This doubled over the last 25 years, because of the increasing awareness about the value of land. Whereby these are the results of changes made on land ownership system from communal to the government lead to land conflict both in urban and rural areas, (Hesse *et al.*, 2004). There is a long historical record of fluctuating conflict, competition and co-operation between settled farmers and pastoral or transhumant herders. This includes periods of violent herder domination over settled

farming production systems and the conversion of former pastoral lands to cultivation. The current levels of conflict that occur in some locations are clearly intolerable for farmers, herders and also for the environment. The need for local communities to resort to such violence is indicative of a lack of policies, or that existing policies are not working to the benefit of these communities as a whole. Therefore, it is clear that the observed land conflicts are viewed among groups within the broader context of farmer/herder interactions or relations in general. A variety of ongoing research themes on crop and livestock's interactions are also likely to touch on farmer/herder relations and will be important in assessing these conflicts from a broader perspective.

2.2.2 Land conflict resolution

Conflict resolution can be taken as a professional practice or academic field which is highly sensitive to culture. Successful conflict resolution usually involves encouraging communication among disputants, problem solving, and drafting agreements that meet their underlying needs (Adebayo *et al*, 2008). In these situations, conflict resolvers often talk about finding the win-win solution, or mutually satisfying scenario, for everyone involved. In Tanzania during the past two decades, land conflicts were resolved by using informal institutions such as clan head, groups, local rulers, and elders. Takashi, (2005) suggest combination of both formal methods (traditional rulers, elders, groups) and informal methods (village land committee, village council, police forces and courts) institutions to be used sequentially in land conflict resettlement. The government worked on the recommendations of those researches concerning natural resource and conflicts issues. In 1997 through its National Land Policy (NLP) the government of Tanzania, propose and recommend Land Use Plan (LUP) be used in resolving and avoiding land conflicts. However, those conflicts resolution institutions formal and informal, has been

used day-to-day to resolve land conflicts which are reoccur. The LUP designed to resolve and end up the reoccurrence of land conflict for long terms, which also includes better management of natural resources like land.

2.3 Food Security

In Tanzania currently food insecurity is a result of land conflict between farmers and pastoralists. Whereby land conflict lead to low agricultural productivity around the areas whereby farmers and pastoralists co-exist. The right to food is one of the most consistently mentioned in the international human rights documents. Rome Declaration on World Food Summit in 1996 states that food security exist where food is available at all times, to which all persons have means of access, nutritious food which is adequate in terms of quantity, quality and acceptable variety in a given culture (FAO, 2003). The concept of food security in this study narrows down and focuses on food availability. The availability of food in this study means the amount of food produced by the household. Access and utilization of food depend highly on its availability, therefore interdependent of *availability; access and utilization* make the whole concepts of food security. The efforts to produce food has been hindered by some various reasons like unreliable rain, agriculture inputs shifting from tradition (drought resistant) crops and land conflicts. These lead to food insecurity (Sango, 2003).

2.4 Effects of land conflict on food production

Land conflicts bring several effects to the livelihood which obvious lead to low food production at the households. Land conflicts may lead to reduction in output and income of crop farmers as a result of the destruction of crops by cattle. Firstly, many farmers lost part or the whole of their crops. This meant reduced yield which translated into low

income on the part of the farmers who take farming as a major occupation (Oladele *et al*, 2011). This tends to affect farmers negatively such as farmer's savings and ability to repayment of credit, as well the food security and economic welfare of urban dwellers that depend on these farmers for food supply will be affected. This discourages farmers and agricultural development especial in rural areas; Secondly, loss of lives land conflicts between farmers and pastoralists may sometimes involving a lot of killing by the pastoralists and farmers revenge killing of takes place during the conflicts. Herds of cattle belonging to the nomads are also killed. Also some of the victims (young and old) are badly injured or wounded. This has reduced some women farmers to the status of widows. All these have drastically reduced agricultural labour force in the area. In the process there are reported cases of proliferation of small arms and ammunitions since the host farming communities and the headsmen saw each other. Thirdly, farmer's displacement this is among the effects of land conflicts. In the farmer's community, especially women who remain behind stop going to the distant farms for fear of attack by the pastoralists. Such displaced farmers have become a source of liability to other farmers whom they have to beg for food for themselves and their families. This has created a vicious cycle of poverty in such communities (Tor *et al.*, 2009). According to media reports on 27th October 2008, the fights erupted in Mabwegere village of Msowero ward involving Mambegwa sub village that is inhabited by pastoralists versus farmers of Kikenge village. The media further reported that six people were killed and properties like houses were burnt to ashes, dozens of cattle stolen, hence creating internally displaced people within the area. A total of 832 peasants took refuge in neighbouring villages for fear of being slaughtered by pastoralists on revenge.

2.5 Land Use Plan

Land use planning is an iterative process based on the dialogue amongst all participants. It aims at reaching common decisions with land users, on a sustainable form of using and managing land uses in rural and urban areas (Amler *et al.*, 1999). Land use planning, as defined here is closely related with physical planning, which aims to optimize the distribution and allocation of land, often in a space-limited context. Sustainable land use planning aspires to link knowledge about sustainability with actions to achieve it. Sustainable planning thus 'implements' or 'operationalize' the principles of sustainability in land planning theory and practice.

The reason for the adoption of LUP is to improve land uses and to sustain natural resources while settle land conflicts which its effects has been observed in food production. Many countries in Africa include Tanzania have been undertaking some kind of land reforms through developing land policies and laws and restructuring administrative set-ups and procedures. Given the advantages of good governance, and improvement in governance in the land sector would have positive impact on the efficient, sustainable and equitable use of land resources.

Land use planning is a specialization within landscape planning that focuses on spatial planning, the organization of uses and relationships of land uses to achieve explicit goals (e.g. habitat improvement, sustainability). While the landscape ecological planning approach is characterized by a focus on the linkage of ecological patterns and processes, it also includes the actions and values of humans, and social and economic dimensions (Hersperger, 1994).

The context of land use plan is making wanted changes in land use and prevents some unwanted change on land. Whereby this must be accepted by the people involved and there must be the political will and ability to put the plan into effect. All basic needs of food, water, fuel, clothing and shelter must be met from the land, which is in limited supply. As population and aspirations increase, so land becomes an increasingly scarce resource.

Land must change to meet new demands yet change brings new conflicts between competing uses of the land and between the interests of individual land users and the common good. Land taken for towns and industry is no longer available for farming; likewise, the development of new farmland competes with forestry, water supplies and wildlife.

Land use plan may be viewed into other context, for example LUP that bring positive effect, it's facilitate the following:-

Establishment of integrated agricultural development projects aimed at increasing existing agricultural production per hectare by improving infrastructure (communications, supply of agricultural inputs, produce marketing, credit facilities and extension service coverage).

Improvement of traditional grazing, including control of stock numbers, the elimination of unregulated burning and the introduction of forage species into natural grassland. These measures, together with the establishment of grazing reserves and the allocation of grazing rights, are components of a suggested programme to be organized at the interstate level.

Establishment of reserves in the major traditional wet and dry-season grazing areas and along migration routes, with additional reserves within areas freed or being freed by the tsetse eradication programme. Provision of adequate water supplies, veterinary services

and improved natural grassland coupled with strict control of stock numbers. Limited to sparsely cultivated areas.

Therefore land use plan is not limited on context of land conflict of farmers-pastoralists, by solving land conflicts between and among land users. It's may also be useful in designing and planning of cities by demarcation industrial areas, recreation and residence areas so as to bring about sustainable uses of resources.

2.6 Tanzania National Land Policy

Since Tanzania attained its political independence in 1961, it has been realized that there was a need to develop a coherent and comprehensive land policy that would define the land tenure and enable proper management and allocation of land in the urban and rural areas. The policy (National Land Policy) would also provide a clear position on customary land tenure in the light of profound economic and social reforms that have been undertaken in the last 34 years (URT, 1997).

The needs for the formulation of land policy were to accommodate changes in land use and increase in human population, control large stock population which increases demand for grazing land and creates serious land degradation, protect the environment from extension of cultivation to marginal areas, reduce conflicts in land use between agriculturalists and livestock keepers, regularise and confirm the effects of the villagisation programme, (*the Operation Vijiji of 1973–1976*) on customary land tenure, protect individual land rights under a pluralistic political system since 1992 and accommodate Appeal Court decision affirming customary land tenure rights of the local people.

There are some factors that made the necessity to have a NLP such as conflicts between farmers and pastoralists, changes in land use increase in human population have increased the demand for land and competition for plots, evolution of customary tenure towards more individualized ownership, which has been accompanied by the development of land market and increase awareness amongst the population of the of the values of land and property (URT, 1995). These factors call for a comprehensive land policy which would not only guide the allocation, ownership and use of land but also help resolve any reoccurring land conflicts. Section 3 (1)(g) of the Land Act provides that full, fair and prompt compensation shall be paid to any Person whose right of occupancy or recognised long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the State.

The same section further provides that in assessing compensation value the following should be considered: - market value of the real property, disturbance allowance, transport allowance, loss of profits or accommodation, cost of acquiring or getting the subject land, any other cost loss or capital expenditure incurred to the development of the subject land, interest at market rate to be charged for delayed compensation payments. Compliance and interpretation of this section of the law has been a source of problems in many cases.

2.7 Village Land Use Planning and Procedures

The National Land Use Planning Commission in (1998) explained Village Land-Use Planning (VLUP) is the process of evaluating and proposing alternative uses of natural resources in order to improve the living conditions of villagers. The LUP is the process of designing, implementing and revising village land-use plans. It is believed that this process only becomes effective when it is carried out in a participatory way, which means

that the principal users of land, the villagers, are fully involved. To ensure full participation it is important to consider the different socio-economic groups in a village (including gender) which have different interests and expectations.

The increasing pressure on land for different uses has a growing number of conflicts between the different insecurity of land use and tenure, poor development of land markets, degradation of soil and water resources, deforestation, increasing migrations of people and livestock. The most recognized land conflict on macro scale is between crop producers and pastoralists. Encroachment of agricultural land into grazing land, due to increase of human population cause land degradation, forces pastoralists to overgraze their remaining areas or to move with their cattle into areas with formerly low livestock densities, creating new land conflicts in these areas. The conflicts mentioned above, who extent and character differs between various areas of Tanzania, constrain sustainable land use and may undermine rural development. Experience shows that attempts to mobilise small holder farmers to invest in sustainable land use often fail when land conflicts are not sorted out well, and when there is no feeling of land security. Crop producers are often more willing to invest in their land for higher and sustainable production when they are sure to use it for a long period and hence benefit from their investment. Village land-use management attempts to regulate the use of land resources such as sorting out land conflicts, enhancing security of land tenure and use, allocation of land and improvement of land husbandry measures according to the priorities and capacities of the stakeholders. Therefore, it plays a vital role in rural development and can be considered one of the most important tools for natural resource management in Tanzania (URT, 2006).

According to NLUPC (1998), the participatory land-use management approach has the following outstanding characteristics: The needs for land-use planning and management are, in the first place, identified by the land users themselves, who are directly affected by the land conflicts and land degradation, and who are likely to benefit from improved resource management; The villagers participate fully in agenda setting, resource allocation and controlling the planning process (Greenberg *et al.*,1998).

The capacity of local decision-making is built through mobilisation of local institutions and knowledge; The process of information gathering and analysis, priority setting and the formulation of village plans is local-people-centred, flexible and fosters collaboration between disciplines and sectors; The major role of district staff (outsiders) is introducing, guiding and facilitating the idea of participatory land-use planning and resource management rather than making the plans themselves.

The expectations of this approach are as follows: VLUP are implemented and, since they are created by the village communities themselves, reflect their needs and are better adapted to local conditions. Land disputes are minimised and the interests of the various stakeholders (men, women, youth, crop producers and pastoralists) are likely to be balanced and respected, since the plans have been created through dialogue; The land productivity will increase and benefit the various stakeholders since the plans reflect the stakeholder's interests and are really implemented; The plans can be adjusted and maintained with less inputs from outside since the local institutions have been enabled to deal with most of the land use management issues themselves. The proposed methodology accommodates elements and techniques of the conventional planning approach which remain relevant, such as: the use of the legal and institutional tools to regulate the use of land resources; survey and mapping techniques to document property boundaries and

land-use agreements; and, techniques to assess soils, land suitability and socio-economic conditions, for more details of procedures of VLUP refer (NLUPC, 1998).

Village land is declared as being the land falling under the jurisdiction and management of a registered village (NLUPC, 1998). As Tanzania consists of a vast countryside with only a few urban areas, most land in the country is village land. In order to fulfil the provisions of the acts, the village first has to acquire a certificate of village land. The certification procedure includes compulsory agreement upon the perimeter borders among neighbouring villages. When consensus is reached and the border is properly demarcated, a formal certificate of village land is issued in the name of the president, and registered in the National Register of Village Land (Wily, 2003).

Each village is required to define three land-use categories within its own borders; communal village land, individual and family land and reserved land. Reserved land in this context is to be understood as land set aside for future individual or communal use, and needs to be distinguished from the national land category, “reserved land”, mentioned above (Wily, 2003).

2.8 Related Previous Studies

The major land users in Tanzania are farmers and pastoralists. It is evident that human population in the country is increasing while the land size is constant. Food shortages remain an important problem in many developing countries and this is expected to continue for future decades (Mtengeti, 1994). Population increasing lead to increase pressure on land which resulted into land degradation and land conflicts between land users. It has been recognised that some existing policies, laws and government practices,

including some development policies, land tenure systems and governance and security practices that are contributing to the problem of land conflicts, so they need to be revised and developed (Umar, 2004). Mkutu (2004) emphasized for a comprehensive land use planning and security of land tenure to all residents in participatory way, by ensuring that land by-laws are respected and obeyed.

Studies of land conflicts have shown that the groups and persons involved in dispute seek very often to reach a local solution and are reluctant to “invite” external actors in the conflict-solving process. This widely observed phenomenon results at least partly from a rather negative opinion of external, namely state institutions suspected of partiality and corruption. Thus why, LUP was introduced to assist in solving reoccurrence of land conflicts between and among users, whereby the land use plan programme would be able to attain its desired goals.

2.9 Research Gap

There have been Land conflicts worldwide for many years now. In different parts of Tanzania, land use conflicts have been observed since independence era with farmers-pastoralists conflicts being the most common ones. Several effects of the land conflicts are observed, but little is known on the effects of village land use plan on reducing land conflicts hence ensuring food production. Therefore, the study intended to investigate on the effects of the LUP on the food production at the household level.

2.10 Conceptual Framework of the Study

A conceptual framework is a narrative outline or diagrammatic presentation of the hypothetical relationship between the variables of the study which show how dependent

variables (problems) and independent variable (intervention) affect to each other. It shows Land conflict is a problem which affects food production, through destruction of crops, misplace of labours, hence cause to food insecurity at the household due to inadequate or lack of food supplies. The problem needs to be solved by adoption of appropriate intervention; LUP. The result of LUP is to increase agricultural productivity and led to adequate supplies of food production hence food security is obtained at the household.

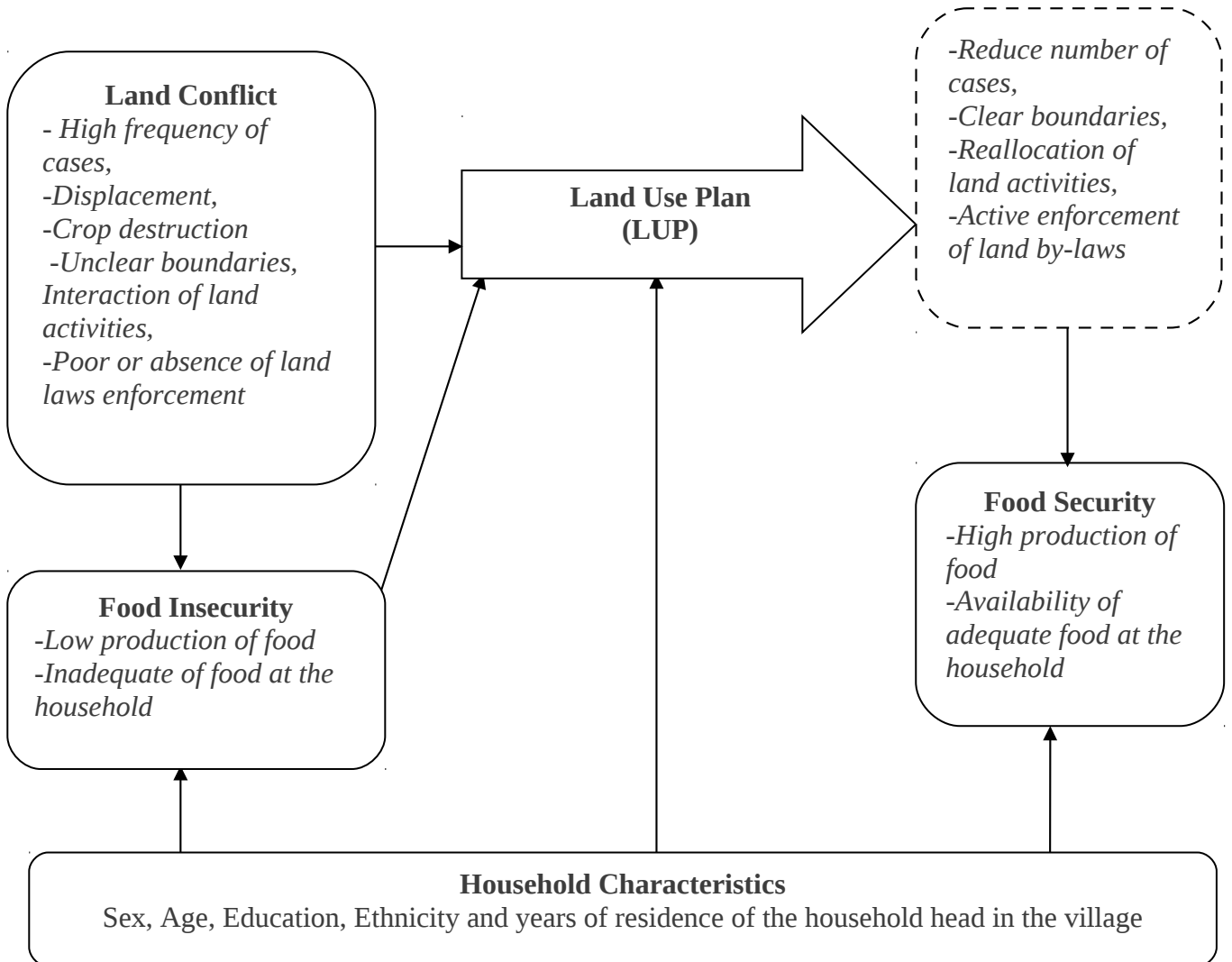


Figure 1: Conceptual framework for the research

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Overview

This Chapter presents a detailed account on how the research was conducted. The Chapter describes location of the study, the rationale behind the research design, sampling design and sampling unit, methods used in data collection and data analysis as well as the ethical consideration.

3.2 Study Location and Justification of the Study Area

The study was conducted in Mvomero District in Morogoro Region. Mvomero District is located at North East of Morogoro Region between 6°00' and 8°00' latitudes south of Equator also between longitudes 36°00' and 38° East of Greenwich. The District has the total area of 7325sq km. The district was selected purposively because it experiences land use conflicts between farmers and pastoralists. The study was conducted in Melela and Lubungo villages. The two villages are found in Mlali Division, which is located in West of Mvomero District. Both villages experience incidents of land conflicts between farmers and pastoralists.

Melela village has LUP whereas Lubungo village does not have LUP. Aims of conducting this comparative study in a village with LUP and without LUP is to examine effect of LUP on reducing land conflict and ensuring household food security.

3.2.1 Melela village

The village implemented LUP programme in 2006. Melela village is found in Melela ward which is in Mlali Division. It is located west of Mvomero District it is about 50 kilometres from Morogoro town. Melela village has nine hamlets such as Mela, Kololo, Kibaoni, Vitemvu, Majengo, Mlandizi “A”, Mlandizi “B”, Kimunyu and Vianzi. The village has the population of 5440 people whereby 2826 are women and 2624 are men. The village has a total number of 1606 households (URT, 2006). The village’s population grows at the rate of 3% per year. The majority (80%) of the villagers are crop producers and (11%) of the villagers are pastoralists and others (9%) engaging in other production activities (URT, 2006).

3.2.2 Lubungo village

Lubungo village did not implement LUP programme. This village is found in Mzumbe ward which is in Mlali Division. The village is located in the West of Mvomero District about 25 kilometres from Morogoro town. The village has the population of 3600 people where women are 1291 and men are 1309. The village has a total number of 503 households (URT, 2006). The economic activities of the villagers include farming activities (85%), livestock keeping (8%) and only 7% is engaged in other activities.

3.3 Research Design

A cross-sectional research design was used where data were collected at one point at a time (Casley *et al.*, 1998). This research design was used because it is quick, cheap and effectively on utilizing limited resources in term of cash, transports and time.

3.4 Sampling Procedure

3.4.1 Sample size

A systematic random sampling was used to obtain 60 farming households from the Village Registry Book (VRB) in the village with LUP. Sampling process proceed with the selection of farming households, by picking one household after the interval of 10th households repeatedly. Therefore a sample size of 60 households was selected out of 606 farming households in the village with LUP. In the controlled village, the village without LUP simple random sampling were used to obtain 60 farming household out of 503 farming households. Therefore, this leads to have a total sample size of 120 farming households from both villages. The choice of the sampling technique was based on the fact that the technique minimizes sampling bias. As it suggested that the sample size bases on the representation of 5% of the total population is highly enough to provide reliable information of the population (Dancey *et al.*, 2008).

3.4.2 Sample unit

Farming households was the sampling unit in this study, because it is regarded as the centre unit of production. During study survey, respondent who was head of the household was interviewed.

3.6 Data Collection Methods

Data collection in this research was done in two phases; the first phase was pre-testing which aimed at testing the validity of data collection tools; questionnaire and checklist. The pre testing phase helped to modify tools for actual data collection during household survey in the second phase involved household survey done from November 2009 to February 2010.

3.6.1 Primary data

These are raw data collected direct from the field which includes both qualitative and quantitative data. The scheduled interview and Focus Group Discussion (FGD) were used in collection of primary data in this study.

3.6.1.1 Scheduled interview

A questionnaire with closed and open-ended questions was used to collect quantitative data from the respondents of the study. The information collected with questionnaire include age, sex, education levels, number of land conflict incidences, time taken from home to the farm, and from farm to the rangeland, size of land, number of bag produced per acre just to mention few (See Appendix 1).

3.6.1.2 Focus group discussion

Focus Group Discussion (FGD) was used in this study. Focus Group Discussion is one among the most widely used methods in collecting qualitative data. FGD method takes advantage of the interaction between small groups of respondents, who are responding to and build on what others in the group have said. Checklist with a guiding question is a tool for FGD method. It was used to collect qualitative data from key informants such as village leaders, members of conflicts resolution committee, Community Development Officers (CDOs) and agricultural officers. The focus groups consisted of 8 to 12 participants per group. The method was adopted to collect information concerning land use plan, land conflict and food production (See Appendix 2).

3.6.2 Secondary data

Secondary data regarding key issues of the study were collected from various sources which include unpublished and published documentary sources; books, articles, reports of various studies from administrative offices such as Mvomero District office of Mzumbe and Melela WEOs; Lubungo and Melela VEOs; and electronic sources like internet sources. These were used to supplement the information obtained from the field.

3.7 Data Processing and Analysis

Data processing and analysis depended on type of data. For quantitative data, Statistical Package for Social Sciences (SPSS) software was used, while qualitative data were analysed by using content analysis method.

3.7.1 Quantitative data

Quantitative data collected using questionnaire were checked for completeness and edited in the field before they were coded and entered into SPSS for analysis. Statistical package for social sciences was used to obtain descriptive statistics such as means, percentages, and standard deviations. Inferential statistics was used to compare the statistical differences in incidences of conflicts and number of bags of maize produced between the two villages. T-test was used to test the significant difference of conflict cases and food production (number of bags produced) in the village with LUP and non LUP village.

As the study aimed at finding out effect of land conflicts between farmers and pastoralists, then it was important to know factors that correlate with land conflicts. Pearson correlation was used to examine relationships between time taken from household to farm and time taken from farm to rangeland. In determining the relationships, the coefficient r varies

from 0 to ± 1 . If $r = 0$ it means there is no relationship at all: if $r = 1$ it means there is perfect relationship, and this happens when a variable is correlated with itself but has little sense. The closer r is to 1, the stronger the relationship; the closer r is to 0 the weaker the relationship. If two variables x and y are correlated and r is negative it means the smaller x is the bigger y is and vice versa. According to Cohen and Holiday (1982), as cited by Bryman and Cramer (1992), correlation coefficients (regardless of negative or positive signs) are interpreted as follows: below 0.19 is very low, 0.20 to 0.30 is low, 0.40 to 0.69 is modest, 0.70 to 0.89 is high and 0.90 to 1 is very high.

3.7.2 Qualitative data

Qualitative data were analysed using Content Analysis (CA) technique. Data were broken down into smallest meaningful units of information or themes and tendencies and analyzed in detail.

3.8 Ethical Considerations

The ethical principle governing this research is that participants should not be harmed as result of the research, and should give their informed consent. To ensure this, the study applied for permit from Mvomero District office, and the District provided a formal letter which was presented to the chairmen of surveyed villages. The aims of the study were introduced to Melela and Lubungo villages. Village leaders were used to give information to people about the objectives of the research, and then arrangements were set-up for conducting research.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Overview

This Chapter presents the results and discussion of the study. It includes five sections namely, farming characteristics of the households; land use conflict situations; attitude of LUP intervention; and lastly the chapter presents the effects of LUP on food production.

4.2 Demographic and Socio-Economic Characteristics of Respondents

The socio-demographic characteristics of the households involved in the study were sex, age, and education level of the households. The section also presents farming characteristics of the households, which includes farm size, mean of land acquisition, inputs used and crops produced.

4.2.1 Sex of the household head

The findings show that majority (84.3%) of households in village with LUP and (90.0%) without LUP were male-headed households (Table 1). This means that, it is likely that majority of men are involved in land conflicts as opposite to women, because men are the head of the households and are the ones who own land in the study areas. These findings are in line with the study by Sango (2003) in Morooro and Dar es salaam, which found out that majority of households, are male-headed; while very few of the households were headed by females. The study also revealed that typical characteristics of most African societies, is that most household are male-headed.

4.2.2 Age of the household head

Age of the household head has important relationship with household production since age is used to determine individual production capacity. Findings show that majority (95.0%) of household heads in the village with LUP were aged between 25 and 44 years compared to those (96.7%) in the village without LUP. This implies that the majority of the household heads in both villages are in their productive age group, which means that they can engage into production activities especially food production. According to URT (2005), the age group from 15 to 64 years is regarded as the productive age group. This provides the impression that majority are likely to be engaged into agricultural activities (crop farming and livestock keeping). In the study areas 80% of the populations depend on land for livelihood through agricultural as major economic activities in the areas (URT, 2006). However study found that, age group (15 to 64 years) are active and productive, therefore it likely that they get involved into land conflict contrary to other age group such as 0-14 years and above 65 years.

4.2.3 Education of household head

Education level of the household head is important in determining household's production capacity and handling of land conflicts. In the village with LUP (55%) of the household heads their education level was that of primary. While, 70% of the majority in village without LUP their level of education were that of primary study found.

4.2.4 Years of residence and ethnicity

According to the study findings 50% of household heads in the village with LUP and 83.3% of household heads from the village without LUP lived for more than 10 years in the villages and about a half of the population consisting of natives who are belong to

Luguru tribe. Since there are people who lived in the area for a longer period of time in the village with LUP it was then expected that majority were present during the design and implementation of LUP which could have contributed positively on its success.

Table 1: Socio-demographic characteristics of respondent (N=120)

Variables	Village with LUP		Village without LUP	
	Frequency	Percent	Frequency	Percent
Sex				
Male	50	84.3	54	90.0
Female	10	16.7	06	10.0
Age				
<24	1	1.7	2	3.3
25-64	57	95.0	58	96.7
65 >	2	3.3	0	0.0
Education				
None	7	11.7	9	15.0
Standard 4	15	25.0	9	15.0
Standard 7	33	55.0	42	70.0
Form 4	4	6.7	0	0.0
Form 6	1	1.7	0	0.0
Ethnicity				
Luguru	45	75.0	56	93.3
Other	15	25.0	4	6.7

4.3 Household Farming Characteristics

The household farming characteristics have relationship with household food production and which may be affected by land conflicts. The information presented in this subsection includes land acquisition, size of farms, crops produced and inputs application.

4.3.1 Size of farm owned and cultivated

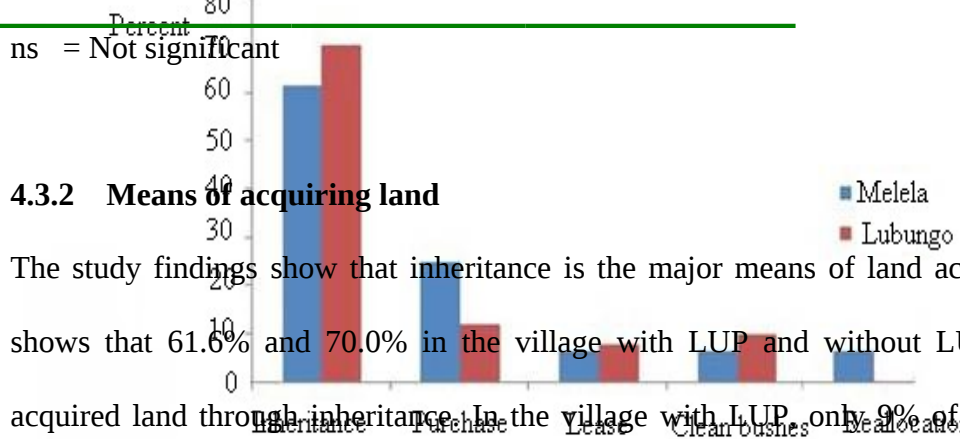
Farm size has direct relationship with household production level. The results in Table 2 show that mean size of land owned and used by households in the village with LUP was

7.17 and 4.63 acres respectively, while in the village without LUP, the mean size of land owned and cultivated by the households was 7.60 and 4.80 acres respectively. The study revealed that in both villages, farmers owned large size of land but they use only small proportions of the land they own. Table 2 shows that, there is no significant difference on the size of land own and size of land cultivated in both villages; village with LUP and village without LUP.

According to the information gathered during FGD it was observed that, crops destruction by cattle is a major reason for underutilization of land. Farmers scared to cultivate their whole land size because of crop destruction which done by herds. The study found other factors that discouraging farmers from utilising their whole land size, climate variability and lack of capital (poverty). Experience shows that attempts to mobilise small holder farmers to invest in sustainable land use often fail due to land insecurity caused by reoccurrence of land conflicts (NLUPC, 1998).

Table 2: Mean size of farm in acre owned and cultivated by the household

Size of land in acre	With LUP	Without LUP	t-value	p-value
Farm size Owned	7.17	7.60	1.634	0.078 ns
Farm size Cultivated	4.63	4.80		



4.3.2 Means of acquiring land

The study findings show that inheritance is the major means of land acquisition. Fig. 1 shows that 61.6% and 70.0% in the village with LUP and without LUP, respectively acquired land through inheritance. In the village with LUP, only 9% of the respondents were reallocated (shift from one area to another) their farms. Other mode of acquiring land

is clearing of bushes. Bush clearing mode of land acquisition has effects on land conflicts as it in most cases leads to encroachment into lands of other use which in turn results into land conflict.

Figure 1: Means of land acquisition in the village with LUP and non LUP village

4.3.3 Types of crops produced

In both villages with and without LUP, farmers grow cassava, millet, tomato, paddy and maize as Table 3 shows. The majority (82%) and (75%) of respondents grow maize in the village with and without LUP respectively. This implies that maize is the major source of food at the household in both villages. Assumption of the study was that the LUP intervention would reduce conflicts hence increase household's food production. The study also found out that maize crop production is mostly affected by herders who allow livestock to feed on maize fields.

Table 3: Type of crops produced

Type of Crop	Village with LUP		Village without LUP	
	Frequency	Percent	Frequency	Percent
Maize	49	82	45	75
Cassava	3	5	4	7
Millet	5	8	7	11
Tomato	2	3	1	2
Paddy	0	0	2	3
Other crops	1	2	1	2
Total	60	100	60	100

4.3.4 Farming practices

Basically there are two types of farming practices which are intensive and extensive farming practices. It is assumed that, presence of LUP would facilitate intensive farming practise in such a way that, farmers would have small size of farms reallocated by LUP and intensify with modern farming practice like the use of farming inputs such as fertilisers, pesticides and improved seeds to increase production from small size of land. However only few farmers within the study area have adopted some of the modern farming techniques as per 43.4% and 33.3% of responses from interviewed respondents in the village with LUP and in the village without LUP respectively.

Intensive farming would highly encourage the use of farm inputs to increase productivity in a small land size (Kamel *et al.*, 2003). However, the study revealed that, the respondent who practises intensive farming, use only few farm inputs as Table 4 show. It is only 11.7% of the farmers in the village with LUP use agrochemicals, while 43.3% of farmer use improved seeds. In non LUP village 8.3% and 31.7% of farmers use agrochemical and improved seeds respectively. During FGD in the village with LUP it was explained that, farmers in village with LUP does not use modern farming inputs in fear of committing efforts on growing crops only to end up destroyed by livestock.

Table 4: Farming inputs applied by the households (N=120)

Types of farming input		Village with LUP		Village without LUP	
		Frequency	Percent	Frequency	Percent
Agro-chemical	Yes	7	11.7	5	8.3
	No	53	88.3	55	91.7
Improved seeds	Yes	26	43.3	19	31.7
	No	34	56.7	41	68.3

4.4 Conflicts on Land Uses

This section presents the land use conflict. The section provides information on the household land conflict incidences, source of the conflicts and institutions involved in conflicts resolutions.

4.4.1 Incidence of land conflicts

This study found that, 90% of the respondents in the village with LUP and 88.3% of respondents in the village without LUP face land conflict. In the village with LUP only two land conflict cases were reported and processed, while in the village without LUP only three cases were reported. The slight difference between the two villages implies that, the LUP did not have significant effects on reducing land conflicts within the area. Low participation of people in community programmes like LUP, inaccessibility of justice institutions like courts, low understanding of land laws and policies are among the reasons contributing to ineffectiveness of LUP. According to one interviewed respondent said that, “*pastoralists are reluctant to obey land laws*”. The respondent went further by saying that, “*pastoralists destruct crops by feeding their cattle, and once sued they bribe the local leaders in such a way that cases are not processed for further litigation*”.

Table 5: Respondents who face land conflict (n=107)

Village	Yes	No
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	Frequency	Percent	Frequency	Percent
With LUP (n=54)	54	90.0	6	10.0
Without LUP (n=53)	53	88.3	7	11.6

Findings in Table 5 above show that LUP has failed to reduce land conflicts in the study area since number of people who face land conflicts in the village with LUP is almost the same with number of people in the village without LUP.

4.4.2 Nature of land conflict

Two types of land conflicts were identified by the study. These types of conflicts are farmers against farmers (farmers-farmers conflict) which occur when farmers compete on the use of the same piece of land for farming; and pastoralists against farmers (farmers-pastoralists conflict) land conflicts which happen when two different land users (farmers and pastoralist) compete on the same area for their livelihood. A total of 94% of responses showed that, farmers-pastoralists conflict were the most outstanding type of land conflict in the village with LUP and in the village without LUP. This finding implies that, in both villages farmers-pastoralists land conflict is common and most reoccurring conflict in the study area.

According to URT (2006) LUP should provide a clear cut separation of pastoral and farming activities. Land use plan show that, Mela hamlet is to be used for livestock keeping activities whereas Melela hamlet is for farming activities. Contrary with the study which found agricultural activities are still integrated, this implies that land rules and law which intend to separate those farming and livestock keeping activities are ignored by land users.



Figure 2: A maize farm destroyed by herd of Pastoralists

4.4.3 Factors contributing to land conflict

Land conflicts are occur in a situation whereby two land use activities like farming and livestock keeping are carried on the same area.

4.4.3.1 Integration of land activities

The results of analysis show the correlation of the distance of the household to the farms had low and negative relationship with land conflicts ($r = -0.173$, $p = 0.073$) and the relationship was significant at the 0.01% level. Farms which are closer to the household experience either few crop damage cases or no cases at all. Table 6 shows a walking time taken to reach a farm from rangeland had positive correlation with land conflicts incidence ($r = 0.30$; $p = 0.001$). This finding was expected because it is well known that as the farm become closer to the rangeland it is easily to be attacked by herds which cause crop damages.

Table 6: Correlation of a walking time taken and land conflict cases

Variables	Correlation coefficient with land conflict cases (r)	Significance levels (p-values)
A time taken from household to farms	-0.173	0.073
A time taken from farm to rangeland	+0.301	0.001

4.4.3.2 Other factor contributing to land conflict

A study also found some other factors that cause of land conflicts within the study areas. The identified factors are crops destruction; unclear boundaries, land ownership and poor enforcement of land laws which are supervise and manage land uses. Due to the fact that, land resource is diminishing from year to year, intensifying competition over resources and causing violent conflict between the farmers and pastoralists (Oladele *et al*, 2011). Poor enforcement of land laws, lead to unsustainable grazing of vegetal resources and went on destruction of land resources and crops which led to re-occurrence of these land conflicts because of unclear boundaries and weak laws. Surely crops destruction having considerable effects on the economy of the households. Whereby, farming is the mainstay of the economy of the local people but still disrupted by these land conflicts, and making livelihood difficult at both the immediate locality as well as the larger societies that are dependent on the produce from the warring communities. Therefore, food supply is affected in both quantity (Fenuche *et al.*, 2009).

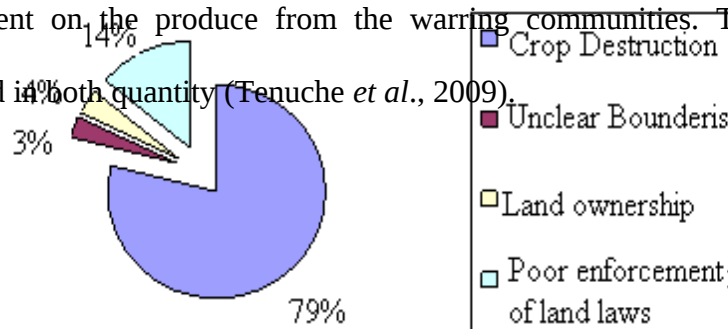


Figure 3: Factors contribute to land conflicts**4.4.4 Institutions involved in conflict resolution**

Traditional leaders were used in resolving land conflicts, even time before introduction of LUP in the village. After the introduction of land use plan in the village, land committee and pastoralists-farmers committee were formulated with the aims of dealing with land disputes in the village.

However, study found that, majority (74%) of the respondents in village with LUP report their land conflict cases to the Village Executive Office (VEO), while 71% of the respondents in village without LUP report their land cases to VEO. The study found out that, VEOs were commonly used in resolving of land conflict cases as Table 7 show. Involvement of VEOs into resolving land conflict implies that, institutions such as land committee and farmers-pastoralists committee failed to manage land uses and resolving land conflicts in the area.

Table 7: Institutions where farmers report land conflict cases

Place where the cases reported	With LUP (n=54)		Without LUP (n=53)	
	Frequency	Percent	Frequency	Percent
Village Executive Officers	35	74.4	43	71.7
Farmers-Pastoralists committee	8	17.0	0	0.0
Police force	3	6.3	4	9.3
Land committee	1	2.1	0	0.0

Respondents of the study were argue that land committees are biased and corrupt and that is why people prefer taking their cases to VEOs rather than to the committees. They said that, “*land court is too far and its cost us*”. That’s why they have trust on VEOs because these are community leaders elected by the people themselves as opposed to committee members who are nominated. They said that, “*village leaders are our people, although we report cases but are either delayed or not processed at all*”.

4.5 Respondents attitude towards LUP

The study also aimed at finding out attitude of the respondents towards LUP in the village with LUP only, as one of the specific objectives of the study. This section therefore presents findings of the study on LUP’s awareness which determine attitude of the respondents to LUP.

4.5.1 Respondent’s awareness on LUP

A total of 86.6% of respondents from the village with LUP admitted to have heard about LUP, from several sources of information as presented under Table 8 below. According to the findings of the study village leaders and Property and Business Formalization Programme (PBFP) are the main source of information in the village compared to other sources; as illustrated by 44.2% and 28.8% of respondents respectively, under Table 8 below. Village leaders became main source of information through meetings with their people while PBFP through its initial surveys conducted by programme staff, which was

conducted during the survey of this study. However, people seem to have not understood LUP well and that is why land conflict incidents are recurring in the village.

But during FGD it was observed that respondents were contradicting LUP whose intention is to separate land activities; with PBFP which provides for formalisation of property, including land. According to interviewed respondents, inadequate understanding of LUP is caused by poor participation by the people during designing and implementation of the LUP programme.

Table 8: Source of information about LUP (n=52)

Information sources	Frequency	Percent
Village leaders	23	44.2
Mass Media	1	1.9
Land experts from Mvomero District	8	15.5
Through participation	5	9.6
Property and Business Formalization Programme	15	28.8
Total	52	100.0

4.5.2 Respondent's attitude towards LUP

A total number of 52 (86.6%) respondents who heard about LUP in the village with LUP, were asked to give their views on LUP. Likert Summated Scale was used to measure respondent's attitude; the scale included 12 statements with positive and negative connotation equally. The respondents were asked to agree or disagree with the statements. The expression of agree or disagree varied from one as strongly disagree to five as strongly agree. Based on the score results obtained from the Likert Summated Scale then two categories of attitude were identified as, scores range from 12 to 35.5 was regarded as negative attitude while, scores that range from 36.5 to 70 was regarded as positive attitude. According to the finding the majority of the respondents (57.7%) had negative attitude toward LUP as opposed to 42.3% of the respondents who had positive attitude toward

LUP (Fig.4). This implies that the majority of respondents have negative attitude towards the presence of village LUP since the programme failed to reduce incidences of land conflicts in the village, whereby its effects were expected to be observed on contributing positively increasing on food production at the households.

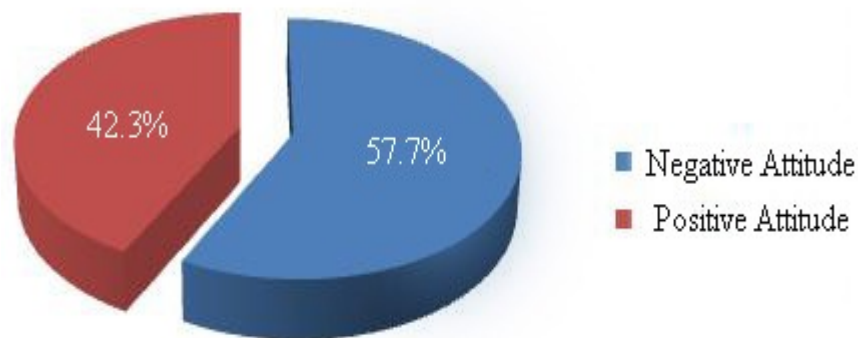


Figure 4: Respondents attitude on land use plan (n=52)

A woman of 45 years old in the village with LUP during the interview commented on LUP saying that, *“land use plan was introduced for the purpose of bring a separation between farming activities and livestock keeping, but still cattle are feeding around farms areas and damage crops.”* Above narrative, indicates that the presence of LUP aimed at separating land uses activities like farming and livestock keeping. However, still effects of LUP were not observed on either reducing land conflict incidences or increasing of food production in the village.

4.6 Effect of LUP on Food Production

The main goal of this study was to find out the effect of LUP on household food production. The study was guided with this assumption; the presence of LUP will reduce incidence of land conflict and encourage effectively utilization of land, hence increase

household food production and get surplus yields. The study found that, maize is a main crop whereby majority (82%) of the villagers grow maize. Therefore, study decided to use maize crop as indicator for food availability at the household.

4.6.1 Food harvested

It was expected that the presence of LUP would lead to increase the household food production. Study findings show that, the average bags of maize produced in the village with LUP was 5.49 compared to 4.42 bags per acre in the village without LUP. The study found that, there is no significant difference on the average number of maize bags produced in two villages at 0.05 levels. Study found that, presences of LUP did not contribute positively on increasing of food production in the village.

Table 9: Comparison of maize harvested between village with and without LUP

Statistic	With LUP	Without LUP	t-value	p-value
Minimum	0.00	0.00		
Maximum	21.00	18.00		
Mean	5.49	4.42	1.537	0.127
Std deviation	3.89	3.75		

Therefore, findings suggest that LUP does not have significant difference on household food production in the village. LUP failures can be explained by the weaknesses on its implementation, as observed during focus group discussion with respondents. Also it is revealed by the study that, involvement of VEO into resolving land conflicts implies that, institutions like land committee and farmers-pastoralists committee failed to manage land uses and solving land conflicts. The VEOs are not competent body dealings with land

conflicts, since they are overloaded with other duties and also that LUP does recommend the uses of land committees on land conflict resolutions and not VEOs.

4.6.2 Consumption period of maize produced

A period of consumption of food produced, used to determine household food status. The state of household to be food secure mean food is available in all time. This implies that, availability of food depend on period taken by the household to consume amount of food produced. Findings of the study show that, 43.0% and 36.7%, of the respondents in the village with and without LUP respectively, take six months to consume harvested maize. Table 10 shows, that there is no statistical significance on time taken to consume produced food in both villages. According to the analysis of the findings of the study as presented under Table 10, 66.2% of respondents in the village with LUP and 68.7% respondents in the village without LUP face seasonal food insecurity.

Table 10: Time for consumption on produced maize

Consumption period in months	with LUP		without LUP		Food security status
	Frequency	Percent	Frequency	Percent	
Below 6 months	40	66.2	41	68.7	Insecure
For 12 months	20	33.8	19	31.3	Secure

In the past 20 years households in the village used to consume their harvested maize crops for more than six months, with average of 5.7 members of the household (URT, 2006). However, few households (38%) and (31%) in village with LUP and village without LUP found to be food secure since what they produce last for 12 months. Therefore, the situation suggests that in the study areas many households face seasonal food insecurity as compared to the past 20 years, whereby what they produce lasted for 12 months. Study found that, produced food sustain for less than six months with the average of 5.5 member

of household. Respondents said that; *“what we produce are not sustain throughout a year like old days, because of loss we get from crop destruction by herds”*.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1 Overview

Chapter five presents conclusions and recommendations based on the findings of the study. The conclusion is presented then followed by recommendations and suggested areas for future research.

5.1.1 Study objectives

This study generally intended to provide answers for effects of land use plan on household food production. Specifically study aimed at responding three specific objectives; 1) to examine people's attitude toward land use plan programme; 2) to assess contribution of land use plan on decreasing land conflicts and 3) last objective of the study is to examine effects on land use plan on food production.

5.1.2 Conclusion

5.1.2.1 General objective

It is clear from the findings that, generally presence of LUP does not have significant effects on household food production as there is no statistical different on number of bags produced in two villages, village with LUP and village without LUP.

5.1.2.2 Specific objectives

This study conclude that, there is no significance different on number of land conflict cases in village with LUP and village without LUP, which mean that LUP fails to decrease and solve land conflicts in the area.

Based on the study findings it is also concluded that, majority of people have negative attitude with land use plan since it does not solve land conflicts in the village.

5.1.3 Recommendations

In view of the findings of this study, the following recommendations are made:-

The government and other stakeholders should facilitate and increase awareness programmes on land laws, land policies, and land programmes in order to create a clear and common understanding of land issues prior to implementation of land use programme initiated.

Corruption was observed as the causes of recurrence of land use conflicts. Therefore, this study recommends adequate administration of law to combat corruption. People should also be educated and sensitised to take measures against corrupt leaders and land committee members. It is also recommended that, the government should ensure easy accessibility to land court.

It is also recommended that any successful programme that is aimed at solving land issues should be preceded by adequate awareness rising among the subjects of the programme to the community.

5.1.4 Area for further research

The study did not cover all aspect of land use plan, food production and land conflicts. This study was designed to examine on effects of land use plan programme on food production in the land conflicts areas. However, the following area suggested for further research;-

Research is needed to investigate on why those responsible institutions like land committee and pastoralists-farmers committee are not working. So as to generate wider knowledge to the policy makers and programme designers to have more focused interventions. Also, research should be done to find the effects of land use plan to pastoralists households.

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APPENDICES

Appendix 1: Questionnaire

Questionnaire for Research on effects of land use plan on food production in are where farmers and pastoralist coexist case study of Mvomero district, Morogoro region

Name of the *Division*....., Name of the *ward*....., Name of the *village*.....

The status of the village 1=With LUP 2=Without LUP

THE HOUSEHOLD CHARACTERISTICS

1. Name of the respondent (*option*)..... and his/her age.....
2. Sex of the respondent 1=Male 2=Female
3. Religion of the respondent 1=Christian 2=Moslem 3=other
4. Ethnicity of the respondent.....
5. Marital status of the respondent 1=Single 2=Married 3=Divorced 4=Widowed
6. How many years have you lived in this village? 1=born here 2= Year(s)
7. How many members does this household have?member(s)

No	Name one name	Age	Sex 1=Male 2=Female	Relationship with Household head	Education level	Occupation
1				1=Head	1=None	1=farmer
2				2=Wife	2=Std IV	2=non farmer
3				3=Husband	3=Std VII	3=student
4				4=Child	4=O level	4=below working age
5				5=Other relative	5=A level	5=above working age
6				6=None relative	5=Higher level	

THE HOUSEHOLDS AND THE CONFLICTS SITUATION

8. Have you ever encountered personally involved in land conflicts in this village
1=Yes 2=No If YES against whom? 1=Pastoralists 2=Farmers 3=Other
specify.....
9. What is/are the source of land conflict(s) in the Village? 1=crop damage by
livestock 2=Boundaries 3=Poor land distribution by village government
4=Poor/weak land laws 5=Other specify.....
10. How could you say about the land conflicts cases you face in this year, those cases
to you are? 1=decreasing 2=normal 3=increasing
11. What is the actual number of cases average you face in the year.....
12. Did you report them? 1=Yes 2=No If YES where.....
13. In Q12 if s/he did not report the case then ask what actions did s/he take?
1=Nothing 2=Compensation 3=Revenging 4=Other specify.....
14. Was there any legal action taken by the appropriate organ to where you reported it?
1=Yes 2= No. If YES which one..... and
why.....
15. Do you think land use laws are well enforced? 1=Yes 2=No 3= I don't know

THE FARMING CHARACTERISTIC OF THE HOUSEHOLDS

16. The household farms details;

Land portion/farm no;	Size of land (acres)	Distance from HH time/km	Distance from rangeland time/km	Means of acquiring land
				1=inheritance
				2=purchase
				3=lease
				4=cleaning bushes

17. Do you utilize the whole land? 1=Yes 2=No
why?.....

18. Do you consider the land you have is enough? 1=Yes 2=No Why?.....

19. Is it possible to get more land? 1=Yes 2=No if YES where.....and how.....

20. Are you using modern farming methods? 1=Yes 2=No

21. If YES tick which practise do you use? (Multiple answers)

- 1=Hired labour force 2= Improved seeds 3= industry fertilizers 4=Pesticides
- 5=Other specify.....

22. Yields harvested in last season (farms in the village)

Crop Type	Actual land cultivated in acre	Land size expected to cultivate	Actual yields	Expected Yield	Unit of measurement i.e. 1=sacks 2=debe 3=kg

23. For how long your family consume such amount of food you harvested? 1=less than 3 months 2=for 6 months 3= more than 6 months

24. If checked 1 & 2 in Q23 above, then the situation of low yield was caused by?.....

25. What are/is the other means of acquiring food?.....

HOUSEHOLD AND LAND USE PLAN(The following Questions are for the village with LUP)

26. Have you heard about LUP? 1=Yes 2=No if YES what was the sources of the information.....

27. If YES what is/are the purpose(s) of LUP in the village?.....

28. People's attitude toward LUP

Pick a number from the scale to show how you agree or disagree with each of the following statements. **1.Strongly disagree, 2. Disagree, 3.Undecided, 4.Agree , 5.Strongly agree**

	Statements	Actual score
	LUP increase efficient uses of natural resources	
	LUP intends to chase pastoralists	
	LUP force farmers to leave their fertile land	
	LUP reduce conflict between Farmers and Pastoralists	
	LUP is affiliated by political ideologies	
	LUP degraded the environments	
	LUP influence adaptation of modern technology	
	LUP increase household Food production	
	LUP impose difficult land use laws	
	LUP break a good relationship between farmers and pastoralists	
	Only farmers must obey land by-laws putted by LUP	
	LUP indent to displacement people	
	Total	

THANK YOU FOR YOUR COOPERATION

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Appendix 2: Checklist

1. Is there land use plan in the village?
2. How could one know that there is a land use plan?
3. Why the village implement this land use planning *programme*?
4. What are the roles played by the LUP?
5. Why still farmer-pastoral conflicts are persisting in the village while LUP is there?

People's attitude toward LUP

6. Is the LUP fair to the people? In sense that gives people more land.
7. Does the LUP divide the land between farmers and pastoralists equally?
8. Does affect boundaries of people in the villages?

Existing situation pertaining land use

9. Do you think LUP decrease land use conflicts?

Food security situation after LUP

10. Do you think the presence of LUP increase food production? How?
11. Do farmers nowadays practising intensive farming?
12. For *how long people in the village consume their amount of food they produced?*

THANK YOU