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Effect of Land Access on Livelihood Strategies in Rural Densely Populated Areas of Tanzania

by

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ABSTRACT

This study examined the access to land, and its implications for the choice of livelihood strategies among rural households in densely populated areas. Field work was conducted in Mvomero district between 1st April and 5th May 2011, through Focus Group Discussions (FGDs) and interviews.

It was found that, household land holdings in mountainous areas are small on average and highly exhausted, resulting to migration and agricultural intensification coupled with high application of fertilizers. In contrast, the adjacent low land is fertile, with reasonable arable land size in average but household land access has been compromised by land grabbing. In both areas, majority of middle aged people and youths are practicing seasonal migration to cope with land exhaust and scarcity. However the mountainous areas are preferred above lowlands due to guaranteed availability of water for both irrigation and home use as opposed to confounded drought in lowland. While highlands inhabitants depend on low land for sufficient and fertile land to produce enough staples and excess for selling (when rain is good), land availability in low land has been compromised by grabbing.

The importance of land resource and its role on survival and development to inhabitants of the villages adjacent to the Eastern Arc Mountains cannot be over emphasized. The study reveals that crop farming remains the main livelihood strategy supported by animal keeping and small business. Productivity in the highlands and lowland is hampered by insufficiency of land which results to high demand for fertilizers and migration.

Therefore, the paper recommends promotion of proper agriculture intensification methods and enforcement of speedy implementation of land use planning for sustainable livelihood security in the study area.

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1.0 CHAPTER ONE

1.1 Background to the Study

Assets are of equal importance as livelihood inputs, however, land carries the natural resource stock from which flow of natural resources and services useful for livelihoods are derived. It is a key asset which rural people use to make a living (Peters, 2000 quoted by Quan, 2006) and a capital asset offering opportunities for social and economic empowerment and thereby a springboard from which to escape from poverty (Quan, 2006). Access to land is the basis on which individuals and households are empowered and can acquire inputs and services (Ngerengere, 2008; Tungaraza, 1990). Secure rights to land are a basis for shelter, for access to services and for civic and political participation; they can also provide a source of financial security furnishing collateral to raise credit, as a transferable asset which can be sold, rented out, mortgaged, loaned or bequeathed.

However, the issue of land access, ownership and use has become a greater global concern since the food price crisis of 2007 (Correl, 2009). Some countries (Persian Gulf States, China, South Korea and India) are rich in capital, but do not have sufficient farm capacity to feed their populations. Hence they have become major land hunters. The issue of land rights has also been taken up by the African Union (AU), which considers security of property rights as benefiting both the small farmer and large scale operators (Correl, 2009).

According to Tanzania land policy, all citizens have equal and equitable access to land (URT, 1997). However, land scarcity in rural areas of Tanzania is a recent phenomenon and is engineered by the money economy, political policies, population growth and land degradation (Madulu, 2004; Kessy *et al.* 2007). Moreover, data on agriculture and development show that the proportion of arable land per person in the country decreased dramatically between 1981 and 2011. For instance, while the arable land per person remained 0.4 hectares during 1981 to 1995, it decreased to 0.3 hectares per person for the period between 1996 and 2004, and it dropped to 0.2 hectares per person from 2005 to 2010 (World Bank, 2011). Parallel to this the population density in Tanzania is extremely uneven; it varies from 1 person per square kilometre in arid regions to 51 people per square kilometre in the mainland's well-watered highlands. In some highly fertile areas such as the areas adjacent to the Eastern Arc Mountains, it goes above 230 people per square kilometer. This is considered high population density as per Tanzania Land Policy (URT, 1997:3).

The Tanzania national projections show that the population in Tanzania Mainland is projected at 42 to 44 million people in 2011 with the growth rate of 3.25% and 2.87% per annum with and without HIV/AIDs respectively (URT, 2006). Madulu (1999); and

Tungaraza (1990) argue that high rate of population growth has contributed to increased pressure on land, increased demand for food, water, arable land, fuel wood, and other essential materials from the natural resource pool. This in turn accentuates the suffering of the rural poor and can become a cause of persistent poverty. Moreover, poverty and human development reports as well as household budget surveys show that high rate of population growth contributes to chronic poverty (URT 2003, 2006, 2007 and 2009). The reports also show that more than two - thirds of all Tanzanian households are employed in agriculture and fisheries, with 81.7% of them living in rural areas (URT, 2009). Furthermore, the reports argue that poverty remains overwhelmingly a rural phenomenon, with some 83% of individuals below the basic poverty line being resident in rural areas. For instance in 2009, over a third (37.6%) of rural households were reported to live below the basic needs poverty line, compared with 24% of households in other urban areas and 16.4% in Dar es Salaam (URT, 2009).

The facts that the majority of rural households are poor and employed in agriculture, areas with favourable climate attract high population density, and population growth rate is high, and that there is a strong linkages between population size - resource depletion - low social services availability calls for a closer analysis of livelihoods in rural densely populated areas. This study investigated the effects of land access on the choices of livelihood strategies in densely populated areas adjacent to the Eastern Arc Mountains of Tanzania.

1.2 Statement and Significance of the Research Problem

Although Tanzania is favoured with abundant arable land, political policies (e.g. villagization) and fast population growth have created high population densities and land scarcity in fertile and favourable climatic parts of the country (URT, 1997). The efforts of national land policies and act have been encouraging resettlement of population from the land scarce areas to areas of low population density, promote a secure land tenure system, encourage the optimal use of land and facilitate a broad - based socio-economic development without endangering the ecological balance of the environment (URT, 1967; URT, 1997; URT, 1999).

However, today in rural rainy and fertile areas, land is scarce and access to meaningful employment is a challenge. For example, in Usambara and Uluguru Mountains farming employs 90% of the total labour force but land is a major constraint among most of the villagers. Moreover, remote villages seem to have the majority of inhabitants below the poverty line with most of their houses roofed with leaves, the walls made of mud and poles (WWF *et al.* 2007). This could be probably due to limited access to land which is among the most important productive resource

for the rural poor. Limited access to land by the rural poor can contribute to inadequate choices of alternative livelihood strategies among the rural poor.

The available literatures on rural household livelihood options in various climatic areas of Tanzania indicate that diversification is gaining importance. For instance studies conducted by Shem (2010), Morris *et al.* (2001), Batamuzi *et al.* (2007), Campbell *et al.* (2002), Thomsen (2001) and Narayan (1997), revolve around unravelling how households in arid and semi arid areas of Tanzania participate in natural resource management, cope with seasonal food and water shortages as well as the consequent knock-on effects. Urassa (2010) investigated on rural household livelihoods, crop production and wellbeing after a period of trade reforms in Rukwa, Tanzania (the area which has abundant land). A study by Ellis and Mdoe (2003) examined livelihood patterns and experiences with different sub-farming systems in rural areas of Morogoro. Furthermore, a number of studies have been done on Forest and Natural Resource Management in the Eastern Arc Mountains of Tanzania (Mbwambo 2004; Tenga 2006; Kigula 2007; Nguya 2006; and Kijazi 2007). This study analyzed the link between land access and choices of livelihood strategies in areas where land is in short supply, with particular emphasis on areas adjacent to Eastern Arc Mountains of Morogoro Region.

1.3 Study Justification

The study on the link between land access, and livelihood strategies in rural densely populated areas in Tanzania is important and timely due to the following reasons:

1. The study findings if used will facilitate the implementation of the Tanzania Land Policy (1997) whose overall aim is to promote and ensure a secure land tenure system, to encourage the optimal use of land resources, and to facilitate broad - based social and economic development without endangering the ecological balance of the environment.
2. It provides additional information and scientific recommendation to policy makers and other stakeholders working in Land and natural resource sectors on the best ways of promoting sustainable livelihood activities in areas where land is in short supply.
3. The generated information will facilitate the smooth implementation of National Strategy for Growth and Reduction of Poverty II (NSGRP) which among others, insist on reducing income poverty through promoting inclusive and sustainable employment, enhancing growth and development, undertaking further land reforms to support access and expansion of land for

agriculture development and protecting use of designated activity, while balancing the demands for large and small scale uses. Ensuring creation and sustenance of productive and decent employment especially for women, youth and people with disabilities, providing selective and customized investment in human capital to inculcate appropriate skills and addressing under-employment in rural areas through establishing production clusters and promoting non-farm income generating activities (URT, 2010).

1.4 Research Question and Specific Objectives

1.4.1 *The study attempted to answer the question that*

To what extent do; the ways of obtaining farm, farm size and types affect the choices of livelihood strategies at household level in the context of land scarcity.

1.4.2 *Specific Objectives*

In order to answer the broad research question the study focused on understanding the following;

- i. Ways through which people obtain farms and limitations to land access at household level.
- ii. Average farm size and form at household level and its effect on choice of livelihood strategies at household level.

1.5 Structure of the Paper

The paper comprises of five chapters. The first two chapters provide the background and introduction to the study as well as the research methodology. The theoretical background of the study including clarification of key terms is outlined in the third chapter. The critical examination on the determinants of land access and implication for the choices of livelihood strategies is presented in chapter four. Chapter five has summarized the main conclusions on land accessibility and available livelihood strategies in the study area. Attention has been made on proper ways to address the observed limitations to availability of livelihood strategies.

2.0 CHAPTER TWO LITERATURE REVIEW

2.1 Key Terms; Land access and Livelihood Strategies

2.1.1 Land Access

The definition of land access adopted in the paper was borrowed from the Food and Agriculture Organization of the UN as quoted by Quan, (2006):

Land access is broadly defined as the processes by which people individually or collectively gain rights and opportunities to occupy and utilise land (primarily for productive purposes but also for other economic and social purposes) on a temporary or permanent basis.

Basing on this definition, the paper focused at determining the land access in terms of size, productivity potential (type) and rights to occupy or use

2.1.2 Livelihood Strategies

The term 'livelihood' has been widely defined in literature (Chambers 1989; Chambers and Conway 1992; Scoones 1998; Ellis 2001, and Niehof 2004, Morris *et al.* 2001). After a review of established definitions Ellis (2000) defines it:

A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household, and according to DFID (2000), "a livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future without undermining the natural resource base.

Livelihood strategies (LS) have been classified according to different criteria. Scoones (1998) and Swift (1998) divide rural livelihood strategies into three broad types according to the nature of activities undertaken: agricultural intensification and extensification, livelihood diversification, and migration (Table 6). They argue that LS are not necessarily mutually exclusive and trade-offs between options, and the possibility to combine elements of different options will exist. Diversification is generally recognized as an important strategy for decreasing livelihood vulnerability, defined by Ellis (2000):

Rural livelihood diversification is the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living.

Table 1: Types of Livelihood Strategies

Agriculture in/extensification	Livelihood diversification	Migration
<p>-These strategies mainline continued or increasing dependence on agriculture, either by intensifying resource use through the application of greater quantities of labour or capital for a given land area, or by bringing more land into cultivation or grazing.</p> <p>-Whether households pursue this strategy will depend on agro-ecological potential and the implications for labour and capital. Technical developments in agriculture may also operate as a key determinant.</p> <p>The availability or not of this option, and the extent to which it is undertaken by the household, will determine in major part the need for, and the household resources available to, off-farm livelihood diversification.</p>	<p>-Diversification here may be to broaden the range of on-farm activities (e.g. adding value to primary products by processing or semi-processing them), or to diversify off-farm activities by taking up new jobs.</p> <p>-It may be undertaken by choice for accumulation or reinvestment purposes, or of necessity either to cope with temporary adversity or as a more permanent adaptation to the failure of other livelihood options.</p> <p>-The former motivation might be associated with a wide income-earning portfolio to offset all future types of shocks or stress, whereas; the latter would more likely be a narrower, rehearsed response to a particular type of common shock or stress.</p>	<p>-Migration may be voluntary or involuntary.</p> <p>-As a critical strategy to secure off-farm employment (i.e. needs driven), it may rely on and/or stimulate economic and social links between areas of origin and destination.</p> <p>-Kinship structures, social and cultural norms may strongly influence who migrates.</p> <p>-Migration will have implications for the asset status of those left behind, for the role of women and for on-farm investments in productivity.</p>

Source: (Scoones, 1998 and Swift 1998 quoted by Morris et al 2000).

2.2 Policy Statement on Areas of Population Pressure and Resettlement

According to National Land Policy, people are encouraged to practice resettlement from the land scarcity areas to areas of low population density. However, the policy clarifies that resettlement of population has to be preceded by land use plans prepared for the receiving regions and districts. The plans have to assess the land use patterns and land carrying capacity to establish the capacity of land to support additional population and livestock. In addition to resettlement of populations the following measures are also directed by the policy;

- i. Large scale investment in agriculture and similar activities which require large tracts of land be directed to the areas which have underutilized potential on the basis of the regional and district land use plans.
- ii. Strategic land use plans be prepared to cope with crisis situations such as resettlement of refugees or people displaced by natural disasters.

2.3 Conceptual Framework

A number of agencies (e.g. CARE, UNDP, Oxfam, FAO and DFID) have adopted a livelihoods approach and made use of livelihood frameworks to suit their purposes. In all, the core of the generic livelihood framework model is the relationship between the household's assets- activities and livelihood outcomes mediated by external environment (vulnerability/ resilience context, structures and Institutions). In this paper the DFID sustainable livelihood framework (see Figure 1) was used as a key point of reference, with minor modifications to suit the intended analysis (the link between land access - choices of livelihood strategies at household level; Figure 2).

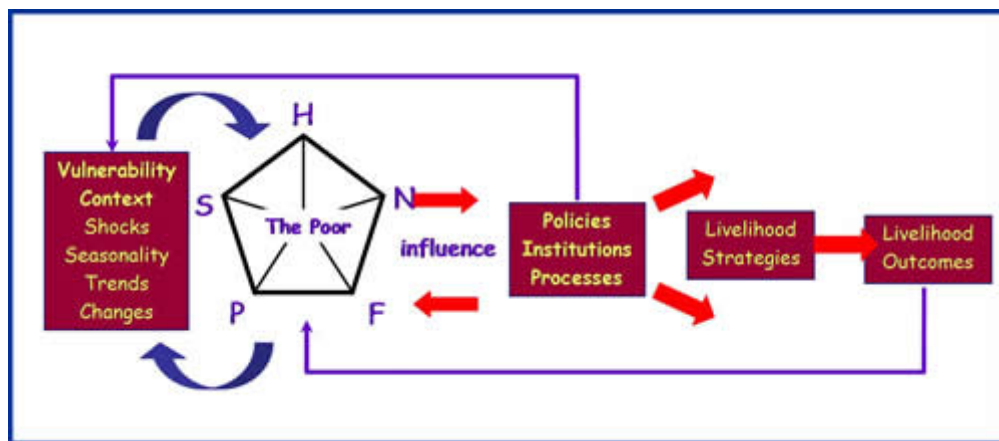


Figure 1: DFID SLF, Source: (IFAD, 2011)

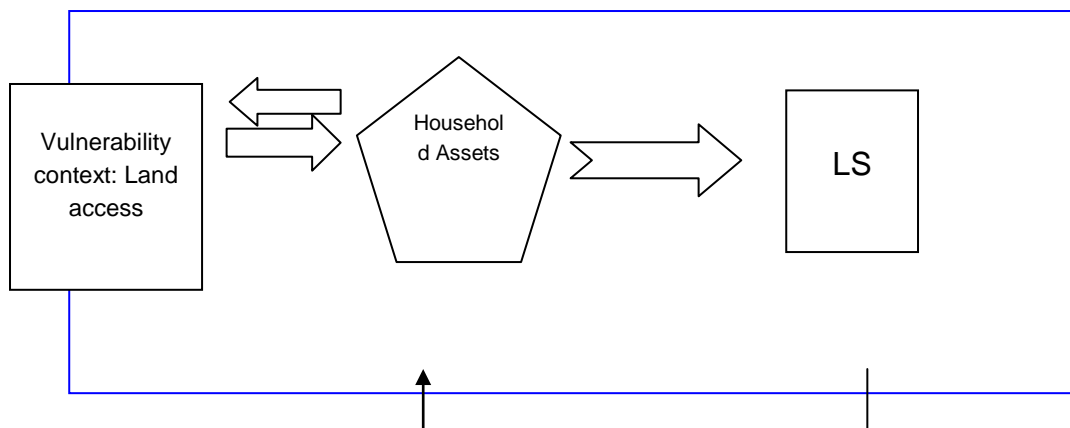


Figure 2: Modified Framework for livelihood analysis in the proposed study

3.0 CHAPTER THREE

3.1 Research Methodology

3.1.1 *Location of the study*

The study was conducted in Morogoro Region, Mvomero District and Mgeta division. Mgeta division was chosen because most of its villages are located within the Eastern Arc Mountains, with reasonable annual rainfall and waterfalls; the characteristics that attract high population density.

3.1.2 *Profile of Mvomero*

Mvomero district is located at latitude 06° 26' South and longitude 37° 32' East. It borders Handeni district in the North, Bagamoyo district in the East, Kilosa district in the West, Morogoro Rural and Morogoro Urban (Municipality) in the south. The District is characterized by high rainfalls between March and May and from October to December when predominantly eastern trade winds bring moisture from the Indian Ocean. Annual rainfall is between 600mm and 2000mm being lowest at the foothill and highest between 400m to 2000m altitudes above sea level. The temperature in the District ranges from 18 – 30 degrees Centigrade.

3.1.3 *Area and Administrative Units*

The district occupies a total area of **7,325 km²**. The area which is suitable for agricultural activities is **549,375** hectares. The present cultivated area is **247,219** hectares. This is equal to **45%** of the total area. The area which is suitable for livestock rating is **266,400** hectares. The District is administratively divided into 4 Divisions, **23** Wards, **115** Villages and **640** hamlets; the administrative division of the divisions in the district is shown in Table 1.

Table2: Distribution of administrative units

S/No	Division	Wards	Villages	Hamlets
1	Mvomero	7	32	163
2	Turiani	5	27	161
3	Mgeta	7	28	176
4	Mlali	4	28	140
Total		23	115	640

Source: Mvomero District Council

3.2 Research Design

The land access context was used as a case to explore the influence of household land access on the choices of LSs in densely populated areas. The study employed a cross sectional design whereby data were collected once from each village in a specific time. The design was seen suitable as it allows collection of data at a single point in a time, while estimating the prevalence of outcome of interest as samples are always taken from the whole population (Levin, 2006). This procedure is cost effective and takes little time.

3.2.1 Sampling Methods

The study adopted purposive and random sampling procedures to select divisions and villages respectively. Firstly, two division namely; Mgeta which is situated within the Uluguru Mountains and Mlali located in low lands, were purposively selected (to allow for comparison of land access and availability of livelihood strategies in mountainous and low lands. Secondly; two wards from each division and two villages from each ward were randomly selected. Thirdly; one focus group discussion comprising 12 participants was organized from each village. In forming the groups, stratified random sampling procedure was adopted to obtain two representatives from each sex and age group making starters of two old aged men and women, two male and female youths, two middle aged women and men. Twelve participants from each village in 8 villages made a total of 96 FGD members. Moreover, one representative from Village Land Committee for each of 8 participating villages was purposively selected basing on age and experience. The aim was to get the oldest member with long experience on land issues in respective villages. Therefore the total respondent was 104.

3.2.2 Data Collection Procedure

Primary data

Primary data was obtained in qualitative form through interviewing key informants and focus group discussions (FGD) organized in eight (8) villages namely Mwarazi, Kibuko, Kibagala, Tchenzema, Manza, Mlali, Changarawe, and Sangasanga. Each FGD comprised of 12 members, 2 from each sex and gender group as explained under section 3.2.1. Four participatory data collection tools explicitly; check list, semi structured questionnaire, seasonal calendar and daily activity calendar were used to gather information from FGD members in different settings as follows;

First the principal researcher facilitated general group discussion by posing questions to group members as listed on the FGD guide (see appendix 2). The aim of this discussion was to gain general information on the average size of land owned by majority of households in the study area, state of land productivity, methods through which people obtain land, ways through which people earn their living, most dependable livelihood strategy in the area, link between size and type of land owned and livelihood activity undertaken by households, diversification options and reasons for diversification. Efforts were made to ensure that, each group member presents his/her views. In order to guarantee smooth flow of discussion the facilitator was not involved in practical recording of responses. While the discussion was going on, two research assistants were recording all responses through writing and by using an electronic recorder. The recording was carefully done such that no single response was allowed to drop out.

Seasonal Calendar (Appendix 1) and Daily Activity Chart (appendix 2) were used to expand insight on the extent of individual land utilization by age and sex, time in the year when land is put on use and when it is allowed to rest, extent and reasons of diversification. For convenient use of tools, FGD members were split into sex and age categories forming 6 strata each comprising two members as follows; male and female youths, middle aged women and men and old aged females and males. The sub groups were guided to fill their experience in seasonal calendar and daily activity charts. It was clearly explained to respondents that the information filled in should reflect life experience for the majority of their peers. Group members were also guided in such a way that every one participated equally.

One member from Village Land Committee (Key Informant) for each village was interviewed by using a semi structured questionnaire (Appendix 4) in order to capture information on prevalence of land issues in the area. The interview also aimed at gaining deeper understanding on how people cope with the shortage of land resource.

Secondary data

National Land Policy of 1995 and Act of 1999 were reviewed to gain broad and correct understanding on land management in the country. An in-depth insight on land resource and livelihoods of rural communities in sub Saharan countries was secured from recent studies on the subject; such as Urrasa, 2010; Ellis and Mdoe, 2008; McCusker B & Carr E. R 2006 and Jayne T.S et al 2003;.

3.2.3 Data analysis

Data from focus group discussions was analysed through content analysis method. Views testimonies and narratives from FGDs members and the interviewed key informants were outlined under the following themes' average size of land holding per household, ways through which people obtain land, main livelihood activity (ies) in the area, diversification options (if any), reasons for diversifying, relationship between household land holdings and livelihood strategies. In compilation hand written responses were complemented by audio records to ensure that all the gathered information under each aspect of interest is exhausted.

Information on Daily Activity Charts and Seasonal Calendars were cross checked for concurrency and controversy and arranged under the following themes; individual utilization of land by sex and age, Time in a year when land is put on use, Time in a year when land is allowed to rest, types of diversification by age and sex and limitations to household land access. The summaries were then critically cross checked, compared and contrasted secondary data and literature for agreements and discords, then used to answer pre determined research questions.

3.3 Ethical Consideration

Issues of confidentiality were clearly explained to each participants and individual willingness to participate in discussion was sought. Moreover, participants were set free to participate anonymously and withdraw any time as the discussion continued.

3.4 Limitations of the Study

The study was unable to obtain data on population density for the study area which could be used to guide the selection of wards and villages. The understanding on land access in densely populated areas requires clear pictures on population density per specific wards and villages. This data could guide sampling in such that the most densely populated wards and villages could have been selected purposively. This limitation was addressed by ensuring that representatives from ward land committee are particularly targeted and interviewed. Moreover, enough literature on the study area was consulted and information revealed that all wards in the high land are equally densely populated, hence justifying the use of random sampling procedure.

4.0 CHAPTER FOUR

4.1 Findings and Discussion

4.1.1 *Introduction*

This chapter provides an overview on the influence of land access on the choice of livelihood strategies in rural areas where land is in short supply. The chapter attempts to provide a picture on land accessibility in terms of size, productivity potential and rights at household level. It also explains the different ways through which land access affect the choices of livelihood strategies. Generally women have more access to land than men and the landholdings per household range between a quarter ($\frac{1}{4}$) an acre to three acres. No household has its entire farm on a single plot, and in most cases it takes half an hour and above to walk to the farm and between plots, some households walk 3 hours to the farm. Land insufficiency is a general phenomenon. The main livelihood strategies in the area are crop farming and animal husbandry coupled with seasonal and permanent migration to urban and neighbourhood villages.

4.1.2 *Land is scarce in the area*

The information obtained from literature and focus groups discussions indicate that repeated fragmentation and land market, soil erosion and overexploitation have reduced the size and value of land available at household level.

Summaries in box 1 show clearly show why household landholdings are shrinking and the way land is valued in the study area. Information gathered from male youths reveals how the prevailing customary laws that govern inheritance treat male and female children.

Box 1: Summary of responses from discussion on household land access

In our villages very few people owns one to five acres, majority of us have quarter (1/4) to half acres per plot. It is not easy to find a household farming on a single plot; we normally walk a minimum of quarter to half an hour from one plot to another.

The main methods of obtaining land are through purchase and inheritance. Women inherit land from their uncles on marriage, when they get children more portion of land is added. Uncles are responsible with clan land protection, and selling of land is confined within the clan. Men depend on the farms which belong to their wives, few men who have money do purchase.

Currently, it is very difficult to get land for purchase; due to repeated land segmentation we own small plots most of which cannot be spit further.

In the past years when we were few, we used to exchange land with goats, today land has become very expensive because of population growth.

During the rain seasons, the top soils of our upland farms is washed away, therefore these farms have become exhausted. Unless one applies industrial fertilizer, harvest is not guaranteed.

In our village Manza, about 80 percent of the total land is under court stop order since year 2000, due to the conflict between private owner (Leo Simon Simbamwene who was born in Mkuyu village) and the village.

This is the valley on which we used to cultivate rice and is very productive. Leo's Father cheated the earlier owners and gained access to the farm. Since then, villagers were allowed to cultivate on the on condition to pay back 20,000/= TZS and 60kgs of rice per quarter an acre in one season.

In the time of harvest failure due to inconvenient weather, Leo demands the same amount of returns claiming that he is not God who resisted rain. When we felt tired of this slave hood, we united ad started claiming our land back. We wined the case at regional court but Simba appealed, the man lives in Morogoro town. With increasing population most of villagers are landless.

In our village Changarawe, the fertile valley (about 100) on which we used to cultivate rice is owned by an Arab who stays in Morogoro town. He was offered the portion by our former two leaders; Councillor and Village Executive Officer out of our concert.

We cleared this land, in 1970s; today the Arab has a 200 years certificate of use.

We have no alternative but to depend on Mzumbe University farm, where we are allowed to cultivate free of charge .However, the management told us that, we might be stopped any time when they will start construction on the land.

The cases in box 1 demonstrate how households access land and the different factors that influence their access including; customary land rights, productivity potential, gender based discrimination, monetary poverty, frequent fragmentation, and, land market.

Customary land rights protects clan land against land grabbing

Land rights prevailing in specific area play important role in ensuring present and future access land by local communities. Cases in box 1 show that the prevailing customary land law in the area confines transfer of land within clan members. This guarantees access to land by the future generation. In view of this Ngerengere, 2008 argues that customary tenure evolves out of native use of land and as such it appears to take care of the basic human needs of shelter and food for all. Customary land rights lay at the foundation of native people as a basis for their livelihood and source of their identity. Customary tenure therefore provides and restores human fundamental dignity of belonging to some ancestral land and can be correctly labeled as the corner stone of land tenure systems in sub-Saharan Africa that has a central role to play in poverty reduction in agrarian economies (Ibid).

Productivity potential underlie the value which is put on land

The importance of land fertility, and wetting systems to arable land has been widely emphasized in literature (Morris et al, 2003; Urrasa, 2010; WB, 2008). The case on land value in box 1 show that; land is not valued basing on size only, but also on its location relative to distance and inclination to irrigation. Lands located such that irrigation water is near and can flow and wet the entire farm easily are mostly preferred. This is testified by the majority of FGD members and key informants; - *"We highly prefer the farms that are located near irrigation water and such that irrigation water can flow through. This is because the farming of vegetable does not depend on rainfall"*. FGD members from highland villages explained. They also added that; *"the price of well watered land is higher compared to that of dry lands ranging from 500, 000/= to 200,000/= per acre. We nick name them "female" and "male" farms respectively"*.

Exhausted soil nutrient contents

It was over emphasized by FGD members that the whole upland farm is poor in nutrient content due to short crop rotation and soil erosion. Information from village seasonal calendars (see appendix 1) and key informant, show that land is put on cultivation throughout the year and harvest per piece of land has reduced. *"During my early years of life, we used to get big harvests, but today; unless industrial fertilizer is used harvesting is not guaranteed"*. Mr Roman Victory Libuma, a 77 years

old man explained. This information is in line with empirical findings in the study on Environmental Impact Assessment of NORAD Funded Programmes in Rukwa region in Tanzania by Kauzeni et al, 1993. The authors found that most soils were poor in nutrients and crop productivity had been decreasing due to short rotations of cultivation on the same fields. The findings on soil nutrient overexploitation therefore poof the prediction put forward by Kauzeni et a, 1993 that; in the absence of suitable land use plans, the over-exploitation which was going on by then, would accelerate land degradation.

Gender based discrimination:

The case on Inheritance in box 1 show that males are the most affected member as far as land shortage is concerned. It is clearly explained that the customary law governing inheritance of land in the area, exclude males children; - *"We do not have land to cultivate, we do not inherit land, clan land is allocated to our sisters who according to our traditions are successors of the generation, our access to land is tied to our marital relationships or ability to purchase"*. Majority of youth males said. This finding is consistent with the findings by Ellis and Mdoe, 2003 in Tanzania; Mbaya, 20002 and Bosworth, 1998 in Malawi, which found that; under matrilineal system of marriage, a man's rightful heirs are his sister's children in Malawi. Thus women's rights to customary land tend to be primary.

Monetary poverty is a course and consequence of land shortage

Secure rights to land are a basis for shelter, for access to services and for civic and political participation; they can also provide a source of financial security furnishing collateral to raise credit, as a transferable asset which can be sold, rented out, mortgaged, loaned or bequeathed.

The arguments made by FGD members from Changarawe village suggest that people sale land to meet immediate financial needs and remain landless. The pieces of land that were allocated to village members at the era of villagization have been sold to foreigners in the form of building plots. They sold these plots, without knowing that the common rice valley which they were expecting to utilize was already owned by the Arab investor; -*"tuliuza maeneo tuliycopewa wakati wa kuanzisha kijiji sababu ya shida ya hela, tuliowauzia wamejenga kuta kubwa, kurudia bonde letu la mpunga tukakuta Mwarabu kaweka vibao vya kukataza tusitumie. Tulipojaribu kulima kwa nguvu mazao yalichungiwa ng'ombe nasi tulirushiwa risasi. (we sold plots to those who needed plots to build because of lack, when we went back to cultivate in our rice valley we found it surrounded by posters displaying a touch not message. Our efforts to cultivate on the valley by force were stopped by guns and our crops were used for grazing.)"*; one of FGD members explained.

Continued fragmentation reduce the size of household holdings

The discussion conducted with respective village members and testimonies from the key informant suggest that since the beginning of the villages, clan lands were being split into portions to suit the number of successors in each generation. Due to this the sizes of land portions owned by households have been decreasing with the increase of number of girls children per clan. Mr Roman had the following to say “*as population increases the size of clan land decreases*”. This again has implication on the extent for natural resource exploitation and availability of social services. In line with this Madulu (1999) and Tungaraza (1990) argue that high rate of population growth has contributed to increased pressure on land, increased demand for food, water, arable land, fuel wood, and other essential materials from the natural resource pool. This in turn accentuates the suffering of the rural poor and can become a cause of persistent poverty.

Untrustworthy leadership fuels land grabbing

Findings from the discussion held with groups of people from Manza and Changarawe villages in box 1 show that land grabbing is a prevailing phenomenon and is fueled by bad governance at all level; “*Our councilor and Village Executive officer granted an Arab who stay in Morogoro town a 200 years certificate to use the valley on which we used to farm rice. Members of FGD from Changarawe village complained. The authors pointed out that, there was a tendency for some commercial companies to try to obtain titles to currently unused village land from Village Councils, or to land lying outside but adjacent to village boundaries from the government. These land parcels are usually provided with leases of at least 33 years. As a consequence, when villages need more land as they grow; it may be very difficult for them to recover this alienated land. Examples of this form of land acquisition were found in areas which are considered as "empty". In the Kilombero Valley, the Commonwealth Development Corporation has negotiated rights to village land for teak production; In Rukwa: the state prison has taken village land which was considered as 'open land' for their use. thus depriving the villagers of land for agricultural expansion; the acquisition of village land by Nkundi state farm has constricted Ntendo and Fyengereza villages; whilst Luwa National Service Camp has also gained part of the land belonging to Ntendo village (From time to time, it has been observed that large parcels of land are allocated to individuals and firms outside the normal established procedures.*

Bad governance also manifest as un- transparency and carelessness among the authorities dealing with respective land issues; “*we took the issue in court since year 2000, until today the land is under stop order.*” One FGD member from Manza village argued.

4.1.3 **Agriculture is the main livelihood activity in the area**

Arguments from FGDs and information gathered by interviewing key informants as presented in box 2 suggest that; agricultural intensification is the main livelihood option in the study area. On-farm and off- farm diversification are also practiced to complement and meet income needs. The ways communities cope with the adversity of land shortage.

Box 2 Summary of responses from discussion on livelihood strategies portfolio

Our main employment is crop farming, but we sustain it by keeping chicken and pigs or goats.

Farming and animal keeping depend on each other; we get food from crop harvests, sell extra and use the money to purchase chicks/piglets. We sell matured animals/poultry to earn income for farm inputs and to meet most of household financial needs.

Few of us are doing small businesses including; local brewing, buy and sale of crops, and running of small shops.

However, nowadays our land do not offer enough harvests, because it is tired, and household landholdings have shrunk due to repeated fragmentation.

Starting from 1980s we have witnessed a number of land issues in the ward land committee; people cultivating on others' land without their consent. Before it was not so.

Today, youths and adult males are forced to cultivate outside the village. Some have started new habitations in villages which have ample arable land.

Most of us have secured fertile flat and larger farms outside the village where we have established temporally dwellings. We use to stay in temporary homes for about three months taking care of our farms. During this period wives stay behind taking care of families.

We are not convinced to move out permanently because rain is not guaranteed in those areas. We are sure of getting water from mountain waterfalls here. However, we are burdened with transportation cost to bring food back home.

Staying away from home is not a jock, some end up remarrying.

Some youths have moved and are still moving to Morogoro urban and other urban centers in sake of employment. However, low education levels limit their access to reasonable paid jobs.

4.1.4 Land scarcity underlies adoption of perilous livelihood activities

The narratives in box 2 clearly point out that the shortage of land has engineered migration, off-farm diversification and excessive use of chemical fertilizers. These options in turn, result to a number of social economic constraints and jeopardy such as high probability for contamination of water sources, high cost of agricultural inputs, high vulnerability to HIV AIDS infection and other related risks, and double cost of household management, etc

Migration and off – farm diversification a consequence of land shortage

Findings from the FGDs and key interviews reveal that people are moving out of villages in sake of sufficient land; *We are farming in Mikese; Kibagala, Mlali, even as far as Bagamoyo where we get virgin flat and large portions of land.* Most of men and male youths argued in the FGDs. It was noted in the discussions that the movements take seasonal and permanent forms; *some people have completely shifted and started new homes in Mikese, Mlali and Bagamoyo, but most of us stay there for three months attending our farms.* Members of the focus group discussion responded.

Furthermore, the findings in box 2 reveal that most of youths are moving to town permanently to work in low skilled jobs. This information concur with Morris et al, (2000), argument that off farm diversification may be undertaken as a necessity either to cope with temporary adversity or as a more permanent adaptation to the failure of other livelihood options. This would more likely be a narrower, rehearsed response to a particular type of common stock or stress. In this case youth permanently adopt urban low paid jobs in place of farming.

Poor soil nutrients augment the cost of agricultural inputs and home management

Arguments from FGD members in box 2 and seasonal calendar in appendix 1 demonstrate that frequent erosion of top soils and consistent rotations of cultivation on the same fields are common, hence crop productivity decreases. *“Our vegetable farms are steep, so the top soil is always washed out by rain.”* Most of members of FGDs from Highland villages reported.

Low productivity due to insufficient soil nutrient compels the farmers to apply chemical fertilizers two times per season. *“Unless we apply planting and growth busting fertilizers, harvesting is not guaranteed.”* Majority of FGD members responded. Seasonal calendar in appendix 1 indicate that the fertilizer is applied twice almost for every crop except beans. Most FGD members said the price of

fertilizers is higher compared to the actual harvest; *“We purchase fertilizers at a very high price, yet the harvests never satisfy our needs for food*

Health hazards from migration and chemical fertilizer use

The application of chemical fertilizers implies deposition of chemicals in water sources during rain seasons. This can lead to health hazards to water users. It was pointed out by FGD members that the main sources of water for household consumption are open water springs. It is obvious that the eroded soil is deposited in home use water sources.

Group discussion members reported. *“There is not enough land in the neighbourhood of many local communities”*. This compels the farmers to find new farms at long distances (minimum of 10 km); a practice which presents a number of problems (feeding two homes, guarding, transport of crops, etc.). Seasonal migration has implication on vulnerability to HIV infection.

5.0 CHAPTER FIVE

5.1 Conclusion and Recommendations

This research paper has attempted to explain how the nature of livelihood strategies undertaken by rural households is highly dependent on their access to land regardless of possibilities for off-farm diversification. Specifically the paper shows how income poverty influences the choices of LS at household level as a cause and consequence of land scarcity. Because of lack of money to run daily life poor households are forced to sell pieces of lands and remain with tiny or without capital at all. On the other hand corrupt village leaders are selling common lands leaving present and future generations with no ample land for expansion. This makes majority of youths and middle aged people in the study area vulnerable to low paid jobs and migration.

The need for capacity building on proper agriculture intensification to highlands inhabitants as well as enforcement of speedy implementation of land use plans cannot be overemphasized. Proper intensification methods will protect land from exhaustion and water sources from chemical contamination. Speedy land use plans both regional, district and village are very important in ensuring that land is put at most productive activities while ensuring livelihood sustainability for present and future generation. That is to say, when land use plans are available and used to direct allocation of lands especially for large scale investments in agriculture and resettlement of population, land disputes and conflicts will be highly avoided.

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APPENDICES

Appendix 1: Seasonal Calendar for Highland Villages

Information	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	
Rain			■									■	■
Dry	■	■											
Maize													
Planting						■	■	■	■	■			
Weeding							■	■	■	■	■		
Fertilizers							■			■			
Harvesting	■	■	■										
Beans													
Planting									■	■			
Weeding											■	■	
Harvesting	■	■											
Potatoes													
Planting					■								
Weeding							■						
Harvesting								■					
Tomatoes													
Planting							■	■	■	■			
Weeding								■					
Fertilizing							■	■	■	■			
Harvesting	■	■	■								■	■	
Vegetables													
Planting	■	■	■	■	■	■	■	■	■	■	■	■	
Weeding	■	■	■	■	■	■	■	■	■	■	■	■	
Fertilizing	■	■	■	■	■	■	■	■	■	■	■	■	
Harvesting	■	■	■	■	■	■	■	■	■	■	■	■	

Appendix 2: Summary of Daily Activity Chart (Compiled from all sub groups)

Time	Activity
6.00am	Work up
6.00-6.15am	Personal hygiene
6.15am	Farming (Males) Cook and pack lunch (females)
9.00am	Farming (all)
3.30pm	Back home/ personal hygiene
4.00pm	Rest (male) cooking (female)
7.00pm-8.30pm	Take dinner and rest

Appendix 3: Focus Discussion Guide

Introduction

The research you are about to participate is for a PhD student research (Development Studies Institute) at the Sokoine University of Agriculture, in Morogoro, Tanzania. The findings will be used in writing a PhD thesis and they will be communicated to you through fliers. Your participation is highly appreciated.

Livelihood portfolio

1. How do people earn living?
2. Among the mentioned livelihood activities; which ones are practiced by majority? Why?
3. Which Livelihood activities are paying most (top three)?
4. Why do some people do away with the most paying livelihood activities?
5. What challenges do people face in pursuing the main LS

Land access

1. How do people acquire land
2. How do you compare price of a piece of land today and for the past five years? Why?
3. Which gender group is accessing land easily? Why?
4. Do majority of households cultivate on single plots?
5. What is the average number of plots per household?
6. What causes people to cultivate on separate plots?
7. What are the gains and loss resulting from cultivating on separate plots?
8. Are there landless people in our midst?
9. What causes people to be landless?
10. How do such people earn a living?
11. How do you relate nature of household livelihood activities to size and type of land owned?

Appendix 4: Semi structured questionnaire used to interview key informants

1. How long have you served in the Village Land Committee?
2. What are the routine duties for the committee?
3. What challenges are faced by the committee?
4. Have you ever attended any land issues? Which ones?
5. How often have you attended such issues for the past 5 years?
6. How do you compare current price of land and that of past five years? Why?
7. How do people acquire land?
8. Which group of people has more access to land? Why?
9. Are there households which face land shortage?
10. How do they cope?