



FACULTY OF ARTS, MEDIA AND SOCIAL SCIENCES

**IMPROVING THE IMPLEMENTATION OF LAND USE POLICIES AS A STRATEGY
TO POVERTY REDUCTION: KAYONZA DISTRICT AS A CASE STUDY**

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DECLARATON

I, MUSHIMIYIMANA Lydia, hereby certify that this dissertation is a result of my work and has not been submitted for any award in any higher institution or university.

Signature:

MUSHIMIYIMANA Lydia

I hereby certify that this statement is right.

DEDICATION

To my little son

INEMA Celse Wesley

For your day today company during my research

ACKNOWLEDGEMENT

Enough has been done throughout my education, thanks be to GOD the Almighty for granting me life and courage throughout my work.

Many people contributed to the completion of this work; I would like to express my sincere thanks to everyone who assisted and supported me to reach the completion of this work.

I would like to recognize all the staff of University of Rwanda especially my lecturers and classmates for their generous and brilliant encouragement given to me to overcome some hardness during my studies. May the Founder and other members of this institution find my cordial thanks for their work. I am indebted to my supervisor **Dr. MUKULIRA Olivier** who has been determinant to my academic research, without him, this work would not be possible. I appreciate and recognize your kind support for my work, May God Bless you!

I owe my thanks to my family, husband, Children, sister, brothers and all my friends, who sacrificed their time, comfort and support throughout this work and success and all others whom we shared the struggle for success.

May God bless you each and every body mentioned and unmentioned for their support in the realization of this work.

ABBREVIATIONS

BTC: Bellingham Technical College

CHF: CHF International

CIDA: Canadian International Development Agency

CIP: Crop Intensification Program

COMESA: Common Markets for Eastern and Southern Africa

DFID: Department for International Development

DIP: Decentralization Implementation Program

EAC: East African Community

EDPRS: Economic Development and Poverty Reduction Strategy

EICV: Enquête Intégrale sur les Conditions de Vie des ménages

FAO: Food and Agriculture Organization of the United Nations

FFS: Farmer Field School

FGD: Focus Group Discussion

GDP: Gross Domestic Product

MACSAC: Madison Area Community Supported Agriculture Coalition

MDGs: Millennium Development Goals

MINAGRI: Ministry of Agriculture and Animal Resources

MINECOFIN: Ministry of Finance and Economic Planning

MINILOC: Ministry of Local Government

NAEB: National Agricultural Export Development Board

NDP: National Land Policy

NEPAD: Partnership for African Development

NGO: Non-Governmental Organization

NISR: National Institute of Statistics of Rwanda

NLP: National Land Policy

RAB: Rwanda Agricultural Board

UND: United Nations Development Program

USAID: United States Agency for International Development

WFP: World Food Program

ABSTRACT

The research report is about a study that aimed at establishing the way forward so as to improve the implementation of the policies of land use as a strategy to poverty reduction; Kayonza District was a case study. The study was guided by three objectives that focused on the citizens' level of understanding about the land use, the challenges in the process of land use, and the proposed way forward to use land in order to fight against poverty. Respondents were chosen from seven sectors of Kayonza District.

The data was collected using a self-administered questionnaire, an interview guide and a four group discussion (FGD) guide. A review of relevant written documents was also done to supplement the primary data.

The study findings look at the general findings of the research paper by answering research questions in line with the objectives and the hypothesis of the study topic. It assessed the land use initiatives available in Kayonza district; in order to investigate the extent to which citizens understand the importance of well-used land in relation to their income and expenses, the challenges in the process of land policies implementation and how to formulate the policy proposing land use in fighting against poverty. CHF in the partnership with Rwandan government and USAID/ Higa Ubeho has carried out various initiatives in the district.

The findings shown that even if the government of Rwanda implemented the policy on land exploitation by the system of “akarima k' igikoni” in order to overcome the problem of small land. The policy, may establish mechanism to ensure effective participation of the citizens in the kitchen garden program. Those households who ignore the implementation of the kitchen garden will face consequences discussed with the local administration authority. There are still unexploited land especially in urban and semi-urban areas which increase a high food demand and decrease income of those who do not have any land, who always buy their food.

KEY WORDS: Land use, Poverty reduction, Akarima k'igikoni, Farm field school

LIST OF TABLE

Table 1: Respondents' age distribution.....	20
Table 2: Respondents' education status.....	21
Table 3: The size of the Land	22
Table 4: The necessary size of land for poverty reduction.....	22
Table 5: The practices of kitchen garden.....	23
Table 6: Challenges in land use	28

LIST OF APPENDICES

Appendix I: Questionnaire

Appendix II: Map of Kayonza District

Appendix III: Photo of misused land

Appendix IV: Photo of kitchen gardens

Appendix V: Photo of interviewees at their workplace

Appendix VI: Models of aero farming

Table of Contents

DECLARATON	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABBREVIATIONS	iv
ABSTRACT.....	vi
LIST OF TABLE	vii
LIST OF APPENDICES	viii
Table of Contents.....	ix
CHAPTER ONE: GENERAL INTRODUCTION	1
1.Introduction.....	1
2. Background of the study	1
3.Statement of the problem.....	2
4. Research objectives.....	4
4.1 general objectives.....	4
4.2 Specific objectives	4
5.Research questions.....	4
7.Rationale of the study	5
8.Significance of the study.....	6
9. Scope of the study.....	6
CHAPTER TWO: LITERATURE REVIEW	8
2.1. Introduction.....	8
2.2. Theories and Models on Land Use Change:	8
2.3. Challenges contrasting theories to models.....	9
2.4. Factors influencing land use	10
2.5. Land use and economic development	11
2.7 Economic Development versus agriculture	12

CHAPTER THREE : METHODOLOGY	13
3.0 Introduction.....	13
3.1 Research design	13
3.2 Sampling	13
3.2.1 Area of study.....	14
3.2.2 Study population	14
3.2.3 Sample selection Methods and size.	14
3.3 Research Instrument.....	15
3.3.1 Questionnaires.....	15
3.3.2 Interviews.....	15
3.3.3 Focus Group Discussion	16
3.4. Data analysis	17
3.4.1 Qualitative data analysis.....	17
3.4.2 Quantitative data analysis.....	17
3.5. Encountered limitation to the study	18
CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION	19
4.0 Introduction.....	19
4.1 The assessment of the land use projects	19
4.2 Research findings.....	20
4.2.1 The socio-economic characteristics of respondents.....	20
4.2.2. Age of respondents.....	20
4.2.3. Respondents' level of education.....	21
4.3The extent to which the citizens in Kayonza District understand the impact of well used land for their income and expenses.....	22
4.3.1 Income sources.....	25

4.3.2 Food security.....	27
4.4.The main challenges in the process of land policy implementation	28
4.4.1 Lack of government facilities.....	28
4.4.2 Lack of governing and management policy.....	29
4.5 Policy proposing the way forward so as to eradicate poverty and fight against food insecurity.....	31
4.5.1. Contribution of NGOs and projects.....	31
4.5.2 The role of local government.	34
4.6 Policy to address emerging challenges in agriculture activities for poverty reduction	37
CHAPTER FIVE: CONCLUSION AND RECOMENDATIONS.....	40
5.0 Summary of the main findings, conclusion and recommendations	40
5.1 Recommendations.....	44
Bibliography	46
(ii) Journals and reports	47
(iii) Manuals and Other Unpublished Works.....	47
Questionnaire	48
Good exploitation of small land with modern agriculture (Kitchen garden).....	52
The interviewees at the workplace.....	53
The models of aero farming.....	54

CHAPTER ONE: GENERAL INTRODUCTION

1.Introduction

The government of Rwanda is giving to agricultural sector a high priority in planning for development. The current national trust is for the sector to move from subsistence to commercial mode of production. This strategy aims to increase household incomes and poverty reduction over twenty years (ROR 2008).Agriculture is also explicitly recognized in the EDPRS as one of the four priority sectors that will both stimulate economic expansion and make the greatest contribution to poverty reduction (ROR 2007).

By 2020, agriculture is envisaged to contribute 33 per cent to GDP, including agro-processing, is expected to grow from current levels of 14 percent to 26 percent of GDP (ROR 2000).The agriculture sector which currently contributes significantly to national GDP (32.6 per cent) has of recent experienced remarkable growth . This is the result of land use; however, there is still a remarkable part of land which is unused especially in semi-urban area where big surfaces are used for gardens.

Food production has increased as a result of the expansion of maize and wheat farming; there was also a rebound in cassava yields following depressed production in 2006 and 2007 due to the cassava mosaic epidemic. The Crop Intensification Programme (CIP) and improved crop diseases prevention and treatment measures in 2007 and 2008 have, in the main, has been responsible for growth in food and export crops production.

On the market, however, the production of fruits and vegetables is low and still the demand is higher. For instance one kilogram of maracuja is sold at 1000Rwf, and one piece of apple is sold at 300Rwf, one kilogram of carrot is sold at 500Rwf.

However , every region in Rwanda can produce more fruits and vegetables than cassava and maize and it has been mobilized in Land consolidation policy.

2. Background of the study

Land use is largely influenced by a number of factors, the main ones being climate, socio-economic (culture and population dynamics) and government policies. Cultivated land increased from 782,500 to 899,133 ha or from 64 per cent to 74 per cent in absolute terms between 1984 and 2002 (EICV 3).

This increase occurred at the expense of pasture, fallow and woodlots. The share of pasture and fallow decreased from 22 percent in 1990 to 14 percent in 2002 and woodlots decreased from 11 percent in 1990 to 7 percent in 2002.

Rwanda is a small country with an area of 26,336 km². The total arable land is about 1.4 million ha which is 52 percent of the total surface area of the country. However the actual area cultivated has increased to 1.6 million ha in recent years. Another 0.47 million ha is under permanent pasture, so well over 70 percent of the country's total land surface is exploited for agriculture (ROR 2008).

Rwanda has about 165,000 ha of marshlands of which 93,754 ha (57 percent) have been cultivated. Only 5,000 ha have been developed and can be cultivated throughout the year while the rest are only cultivated by peasants grouped in organizations or by cooperatives without any technical study (ROR 2008).

The Vision 2020 and the medium term strategy (the EDPRS) have focused on land administration and land use management as key areas for the land reform process that will support sustainable development. These efforts have come up against significant challenges such as population pressure in both urban and rural areas which have led to land degradation.

Agriculture is recognized in the EDPRS as one of the priority sectors that will both stimulate economic expansion and make the greatest contribution to poverty reduction and food security. However, as demonstrated in the discussion above, a number of factors are threatening these efforts.

This research paper tries to put more efforts in the way by which land can be more exploited with modern agriculture in semi-urban and urban areas where land is small but more productive when well used.

Additionally, the appropriate location of activities informed by land suitability assessments will ensure that resettlement patterns, public infrastructure and the overall urbanization process provides the right kind of interventions for urban environment issues in particular and proper national planning targeted at promoting environmental management in support of sustainable development

3.Statement of the problem

The current agricultural system and methods continue to have inadequate impact and population pressure on land use. The current EDPRS flagships focus on improving policy on privatization and job creation which is likely to enhance off-farm options with overall benefits for environmental

management.

Even if the government of Rwanda implemented the policy on land exploitation by the system of “akarima k’igikoni” in order to overcome the problem of small land so as to eradicate mainly malnutrition, food insecurity and poverty in general. This policy has not been followed up, but, it should bring much in the sight of food security.

As it has been said in introduction, considering Rwandan population per capita, only few of them can afford the prices of fruits and vegetables, which lead to malnutrition and persistent poverty as a consequence.

“Adequate food and nutrition are a universal right and are essential for the physical, mental and emotional development of children, as well as [a good] quality of life for adults,” remarked Rwanda’s Minister of Health. “The elimination of cases of malnutrition among our children and pregnant mothers is a priority for our government this year.” According to this statement of honorable minister, using even the small land that the poorest families dispose to produce vegetable and fruits, it can be good way to eradicate malnutrition and consequently to eradicate poverty.

A new survey conducted jointly by WFP and the government of Rwanda has found that the country has made steady progress in improving food security and nutrition over the last seven years, but that level of food insecurity and malnutrition remain high.

WFP, in partnership with the Rwandan Ministry of Agriculture and Animal Resources (MINAGRI) and the National Institute of Statistics of Rwanda(NISR), has published a report on the Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey carried out in 2012. The report indicates that one out of five Rwandan households have unacceptable food consumption and could be considered food-insecure. Out of the total population, four percent have poor food consumption scores, which represent an extremely insufficient and unbalanced diet.

The report indicates that acute malnutrition among children aged between 6 months and 5 years is now as low as 3.6 percent, firmly within “acceptable” limit. Nationwide, 12 percent of children in that age group are underweight, a prevalence that is considered poor.

Household-level poverty and limited access to land are underlying causes of both food insecurity and malnutrition in the country. Sixty-one percent of farmers cultivate less than half a hectare, and half have even less than 0.2 hectare on which to grow their crops. Households who do not depend solely

on agriculture are better off.

However, households with only a small area of land for cultivation simply cannot afford to access enough nutritious food to live healthy, active lives or to provide for their basic needs from their land alone.

They are more vulnerable to food price increases and have no financial buffer to protect them from the consequences of shocks such as drought, flooding, illness and crop disease,”

One can conclude that the implemented policies on food security have brought significant solution but still the problems of malnutrition and food related problems remain this result from misused and unused land.

4. Research objectives

4.1 general objectives

The general objective of the study is to contribute to the implementation of improved policy of land exploitation to reduce poverty

4.2 Specific objectives

The specific objectives are set as follow:

- a. To assess at what extent citizens understand the impact of well used land comparatively to their income and expenses
- b. To identify main challenges in the process of land policy implementation
- c. To formulate a policy and propose the way forward so as to eradicate poverty and fight against food insecurity.

5. Research questions

To carry out this research it has been asked the following questions which will be answered by the hypothesis of the research.

3. To what extent citizens are aware of the importance of the well-used land comparatively to their income and expenses?
4. What are the main challenges in the process of land policies implementation?

5. What kind of policy can be formulated to propose so that in Rwanda, all land even the smallest one could be productive and help to fight against poverty?

6. Hypothesis

According to Richard and Robert (1992:38), a hypothesis is a speculative statement about the relationship between two or more variables. It tells us what we are looking for in our research. For our research, it is formulated as follow: If all land in Rwanda, even the smallest one were used and well used, there would be significant poverty reduction

7.Rationale of the study

Poverty is a multidimensional issue and it is results from complex causes. Food insecurity can be a basic. If it could be possible to satisfy diet balance and fight malnutrition, the economic development, growth development and human development would be increased.

The policy of kitchen gardens can help people to have access vegetables and fruits which contribute greatly to their good health. Because vegetables are expensive in the markets and the poor could be limited to include them in their daily meals, it was a big cause of malnutrition among children and the old.

One can argue that malnutrition in some families is caused by couple's misunderstandings where a man or woman adamantly refuses to buy food so that the other does. However, akarima k'igikoni (kitchen garden) can become a solution to such problems whereby almost every home has its own garden.

Evidently, even if the policy has been implemented, it has not been followed and only few households have used their land to produce vegetables and fruits and consequently there is still the problem of food security.

There are still unexploited land especially in urban and semi- urban areas which increase a high food demand and decrease income of those who do not have any land, who always buy their food.

The present study will be conducted in order to propose an improved policy on land use so as to bring solution to food security and so far to poverty eradication.

8. Significance of the study

The study findings are hoped to be useful to different categories of people in various ways. Today institutions serve many malnutrition is a crucial issue because it is classified among major causes of poverty, Therefore the policy of kitchen garden is regarded by the researcher as a dominant force in Rwanda's agricultural sector as a developing country. In this respect, therefore, the findings of the study are expected to provide an insight on the policy implementation, both formal informal analyses. It is also expected to provide light on how kitchen garden can help empower households in increasing their welfare

Therefore the study findings are hoped to be a basis of policy implementation improvement and will consequently enhance good health of Kayonza citizens by growing up and consuming fruits and vegetables at a low cost. Citizens will increase their opportunities to exploit their capabilities and functioning by participating in economic development. This can be achieved by providing them with modern skills to enable them engage in kitchen garden activities, get their own source of income from the production make, own property and be able to make decisions.

Growing your own vegetable garden can do more than provide tasty produce gardening can improve health, save money and even boost food. If the kitchen gardens are well set and followed up, the owners should gain more in terms of health, finance and therefore increase the welfare.

If one consider the money which is spent on fruits and vegetables, it is easy to realize that , once every household has its own kitchen garden , that money should be saved and contribute in other household expenses.

9. Scope of the study

The research was essentially focused on the improved policy of land use, which will particularly contribute in poverty eradication and fight against food insecurity in the country, especially in Kayonza District as a semi- urban area. It was focus on the practice of' Akarima

k' igikoni''(kitchen garden). The research was concentrated from when EDPRS phase I has been implemented till 2013 to the implementation of EDPRS phase II.

10. Organization of the study

This work is composed of five chapters. The chapter one presents the general introduction of the work, the second chapter is about the review of available literature about the topic.

The third chapter is presenting a brief review of methodology used in the study. It describes research design, data collection, methods and approaches used, survey population and area of the study.

The fourth chapter discusses about the findings of the study and their interpretations.

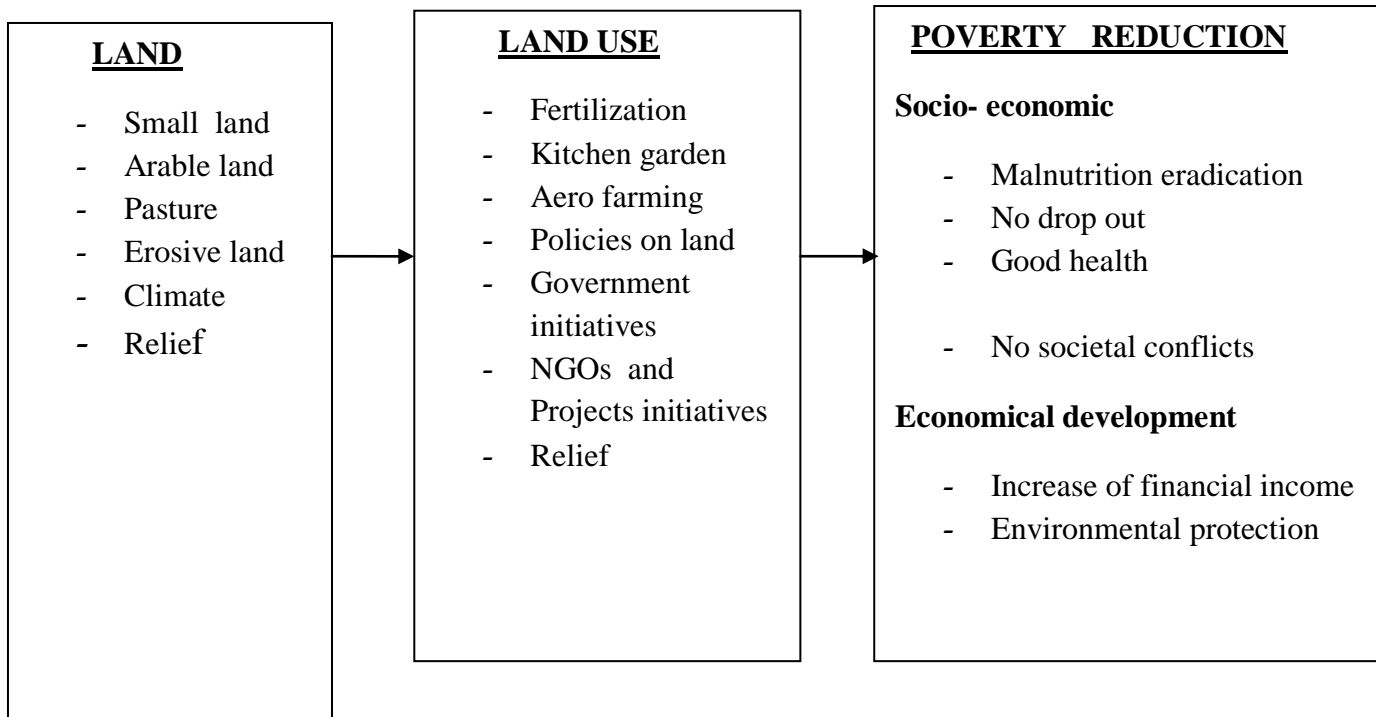
Finally the last chapter demonstrates a summary of the main findings, conclusion and recommendations.

CONCEPTUAL FRAMEWORK :

Independent variables
Variables

Implementing variables

Dependent



CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

The chapter two, literature review, focuses on researchers' views. According to Mugenda, O.M et al (2003:29) "Literature review involves the systematic identification, location and analysis of a document containing information related to the research problem being investigated". Improving Pearce, Robinson.(1998:90-96), viewed that term Literature review implies a review of empirical studies, historical records, government reports, news paper accounts and so forth.

This is going to mainly describe the topic "Improving the implementation of Land use policies as a strategy to poverty reduction in Rwanda: a Case study of Kayonza District".

Land is one of the most critical resources for the rural poor dependent on farming for their livelihoods. Today, about 2 million hectares of rained and irrigated agricultural lands are lost to production every year due to severe land degradation, among other factors.

Urban agriculture or agriculture on a small land, at first glance, may appear to be a fairly simple topic: Scatter a few plots about the City and let residents start gardening. In reality, however, urban agriculture impacts a community in a variety of ways, from providing food security, environmental benefits, and even modifying a city's urban form. Similarly, in spite of its seeming simplicity, urban agriculture does not just happen. To foster the development and growth of urban agriculture, a city may have to consider implementing techniques that include zoning ordinances, comprehensive plans and, in some cases, state legislation .(Kotler:1996)

This chapter will focus on land use, poverty in the process of its alleviation and policy making as well as policy implementation.

2.2. Theories and Models on Land Use Change:

Land is used to meet a multiplicity and variety of human needs and to serve numerous, diverse purposes. When the users of land decide to employ its resources towards different purposes, land use change occurs producing both desirable and undesirable impacts. The analysis of land use change is essentially the analysis of the relationship between people and land. Why, when, how, and where does land use change happen? To provide answers to these

closely interrelated questions, theories have been advanced and models have been built in the last 200 years. This contribution attempted to provide a panorama of theoretical and modeling approaches to the study of land use change as well as to examine broadly how well they reflect the drivers, processes and implications of this change. (Kotler: 1996)

However, what is important for the development of models appropriate for concrete spatio-temporal contexts and decision settings is the synthesis of elements from the variety of available theories to help explain the dynamics and interactions between land use and the drivers of its change in the particular situation being studied. Porter (1980) considers the "thorough understanding and modeling of these complex interactions ... a prerequisite to generate realistic projections of land cover changes ... into the future" (Porter:1980).

2.3. Challenges contrasting theories to models

Some difficulties surround the linkage between theory and models ; theories usually place heavy demands for operationalization especially when important land use change drivers are qualitative and there is no consensus on how best to express and measure them. Scale considerations complicate the operationalization issue further. Models at the micro-level of the parcel require a theory of how individual and higher level factors combine to produce the land use changes observed as well as how to aggregate micro-level changes into higher level changes in land use patterns.

Models which attempt to provide for more realism in the representation of the modeled socio-economic and physical entity may become burdensome and, ultimately, unusable. Hence, trade-offs between theoretical rigor and practical usefulness are inevitable. The nature of the linkage between theories and models is a matter of the trade-offs chosen in particular applications.

The issue of communication between theory and model builders should not be discounted. Disciplinary fragmentation and compartmentalization frequently impede the smooth communication between those developing theories of land use change and those building models. Frequently, these individuals reside in different scientific compartments which make the mutual exchange of ideas, knowledge and tools problematic.

True interdisciplinary research, a basic prerequisite for the development of theoretically informed and sound models of land use change, is rarely practiced. In the absence of

information about the availability of the variety of theories which deal with the multiple dimensions of land use change, then, model builders rely inevitably on the most widely publicized and easy to access theoretical frameworks. This is the case with economic theory and its wide use in supporting models of land use change at all spatial scales.(Barney:1991)

2.4. Factors influencing land use

Land use is an issue that is easily affected and influenced by a numerous factors which are being stated as follow:

a.Land Value

Centre of cities is the most expensive land, land value tends to drop as you move away from the centre and it is characterized by high-rise buildings, generates high amounts of money, accessible location, high density development, high land value along major roadways , house lots are smaller today because of land value

b.Zoning

Zoning is created by municipal government and it is used to control development and avoid land use conflicts

d. Climate

Winter-City Concept: builds cities with usable inside and outside environments though the winter it includes: undergrounds walkways, connected buildings, indoor shopping malls, bus shelters, glass walls to allow sunlight in climate is considered when building public spaces

Relief: Relief can also affect land use through its influence upon the climate (temperature falls with an increase in altitude). : It refers to the amount of rainfall (too little or too much), wind and sunshine

Soils: This is the mineral content; the mineral texture and the depth of soil affect the land use.

Capital: This is the money needed to buy land, seeds, fertilizers, tools, machinery etc.

Markets: In this case market refers to the demand of a particular thing. Distance from markets affects land use because very perishable crops need to arrive in fresh condition. (Barney:1991)

2.5. Land use and economic development

The Comprehensive Food Security and Vulnerability Analysis conducted in 2006 by the World Food Programme, in close collaboration with the Rwanda National Institute of Statistics, indicated that 28 per cent of the rural population was food-insecure and 24 per cent was highly vulnerable to food insecurity. Although access to primary education has improved in rural areas (where the school enrolment rate is 77 per cent, against a rate of 87 per cent in urban areas), the enrolment rate in rural secondary schools is as low as 6 per cent, and dropout rates are higher than those in urban areas, particularly for girls. And it is easily remarkable that one the main cause of the drop out is that children with school age have malnutrition which make them weak and consequently unable to go to school.

2.6 Why are they poor?

Agriculture is the backbone of the economy. It has contributed an average of about 36 per cent of total GDP between 2001 and 2008, and it employs more than 80 per cent of the population. But the sector is very fragile. Rough terrain, small land, erosion and climatic hazards combine with geography and the lack of modern technology to create serious constraints to agricultural development.(EICV2)

Rural livelihoods are based on an agricultural production system that is characterized by small family farms of less than 1 hectare (ha), practicing mixed farming that combines rain-fed grain crops, traditional livestock-rearing and some vegetable production. Food crops account for 92 per cent of the cultivated area, and two thirds of food crops are earmarked for family consumption. A small number of farmers grow higher-value cash crops such as coffee and tea, which occupy 3 per cent and 1 per cent, respectively, of total cultivable land. The most vulnerable rural people are landless people and small-scale farmers who cultivate less than 0.2 ha.

The rural enterprise sector offers alternative employment for a growing rural population living on increasingly scarce land. Microenterprises and small businesses have a role in construction, transport, trade and services, production of manufactured goods and processing of agricultural products, but this source of income remains largely untapped.(EICV 3)

2.7 Economic Development versus agriculture

While most forms of urban agriculture are not for profit, participants, and sometimes units of government, can benefit economically (Gilbert 2005). Furthermore, community supported agriculture and involvement in farmers' markets are two opportunities to share benefits between consumers and producers (Barrs [n.d.]). Farmers' markets have a locational advantage over commercial producers since the distance of transport is shorter and there is less need for packaging (Porter 1980). The gross returns to farmers' market participants are generally 200 to 250 percent higher than the returns from wholesaler or distributor sales (Jonson et al 1999). In addition, the markets provide an alternative for consumers who value "quality and variety" or who wish to support local agriculture (Carlson et al.2003).

Madison Area Community Supported Agriculture Coalition (MACSAC) seeks to build a relationship between farmers and consumers, and also between consumers and the land. The direct link between farmer and consumer supports small and moderate scale family farms and may help them resist development. Barney (1991) has criticized MACSAC for being farmer-driven, lacking a consumer sense of involvement, and not involving low-income people in the organization. Those factors have made it difficult to get members involved in issues of land acquisition and in ensuring the social and economic foundations.

CHAPTER THREE : METHODOLOGY

3.0 Introduction

This chapter gives a description of the research design that was used, areas of the study, sample selection methods and size, data collection methods, procedure and data analysis methods and encountered limitations to the study. The chapter largely focuses on the methodology used in this research project. It defines and widely discusses on the methods and various approaches used. It will deeply present these approaches which will lead the research to the right approach chosen to be used in this research paper

3.1 Research design

The research design that was used was a case study in which both qualitative and quantitative methods were used. The study used a case study because it is a method of investigation in which self-report data of collection from samples of pre-determined interests can be done. The quantitative method was used to obtain quantifiable data while the qualitative method was used to investigate people's ideas and attitude about the economic, political and psycho-social effect of small land exploitation and specifically kitchen garden.). The form of the research applied on this research paper is conclusive research because the paper investigates how land use policy is used to eradicate poverty in Kayonza district. .

The study has therefore adopted exploratory qualitative research design of significant methods discussed above since it attempts to provide a crucial insight and understanding into the key roles of effective land use in poverty reduction. This method has been used to support the study as well as providing facts and detailed knowledge on the topic of this research. It includes the primary information provided by respondents. The information gathered from this significant method will establish viable and reliable information about the land use and the impact on poverty reduction in Kayonza District

3.2 Sampling

In order to determine how the land use policy is implemented, the challenges and the way forward, sampling has played a key role in research process. A sample is a sub-group of a larger population under study. The population is the aggregate or totality of issues, elements and people potentially studied. A sample is the sub-group of the population on which the research is carried out. It is the method applied in selecting a suitable sample size and the

individual research participants or respondents. In qualitative research where there is an interest in generalisation, the sample is chosen to be representative of the population (Kothari 2004).

Representativeness is not a major issue in qualitative research design. The surest ways of achieving representativeness is random or probability sampling. Random sampling is a sampling method in which every member of the population has equal chance of being selected and included in the sample. The opposite of random sampling is non-random or non-probability sampling (i.e. a sampling method in which the investigator is not strictly concerned about systematic representation in sampling) (Berg 2004). The groups discussed about how people in Kayonza understand land use policy even though their land is very small. They further discussed about food security and malnutrition issues facing the district.

3.2.1 Area of study

The study was carried out in Kayonza District, in Eastern Rwanda some 65km from Kigali. It was purposively selected because it is largely a rural area with a many semi-urban centers. It is an area where cultivable land is small and citizen prefer to use their plots to build the house for rent even the compounds of their houses. It is also the my home District where I know many corner and citizens' beliefs. It was also easy for me to gather the information as my home District.

3.2.2 Study population

The study targeted Citizens of Kayonza. The study also considered some projects like USAID/ HIGA UBEHO as promoters of kitchen gardens and local leaders.

3.2.3 Sample selection Methods and size.

Seven sectors (imirenge) and 20 semi urban centers were selected, in Kayonza District (Akarere) where there is small land for cultivation were purposively selected for the study. 15 respondents from each center were selected using simple random sampling. The key informants were purposively selected and included households' members of USAID/ HIGA UBEHO program. In all 300 respondents were involved in the study.

3.3 Research Instrument

The study used four categories of research instruments: a self-administered questionnaire, an interview guide, a focus group discussion guide and a review of the available written documents relevant to the study.

3.3.1 Questionnaires

Questionnaire is mostly used in quantitative research but it is applied effectively in qualitative approach. A questionnaire is a written schedule of well crafted, self-administered research question designed to elicit information on a subject of research. A good questionnaire has three different types of questions. The first type is open-ended questions – respondent supplies the answers without the benefit of any optional answers. The second is the fixed alternative questions – two optional answers. The last type refers to questions with multiple choices answers. A good research questionnaire has to be informed by the research questions and objectives (Gilbert 2005).

It has been proved in this research that, questionnaires are economical to use as a data gathering technique because they can help a research to obtain considerable amount of information at relatively low cost. The questionnaires have been made easy to administer in Kayonza district in the sense that they have been largely self administered and completed by respondent. This type of research has been carefully made to avoid some little room for information obtained to be biased by the researcher's personality factor or what is called the inter-personal factor which found in interviews settings, for insistence.

This type will be utilized to inquire information on the general perspective of the land use in Kayonza district. It will be applied on those engaged in land use activities such as akalima k'igikoni and other agricultural activities as well as those who misuse their respective land.

3.3.2 Interviews

Interviews are mostly used in qualitative research. The qualitative research interview is a conversation between parties to an investigation or research (the researcher and the researched) on issues supposedly of mutual interest. It is a professional kind of conversation through which the researcher gets to know about other people; learn about their experiences, feelings and about their perceptions of the world around them (Kothari 1990).

The purpose of the research interview data was to help the researcher to construct meaningful stories (researcher's narrative) about a research problem based on the understanding and interpretation of respondents' narratives. Research interview is a conversation between two unequal parties – the researcher and the researched. The parties in the interview are called interviewer and interviewee. Before discussing which types of the interview has been applied in this research paper it is significant to define various types of interviews (Kothari 1990).

3.3.3 Focus Group Discussion

Focus Group Discussion (FGD) can be defined as a group of individuals carefully composed by a researcher to discuss a specific research topic or certain issues that are supposedly of mutual interest to the researcher and the discussants. FGD has its origin in input and feedback processes in marketing research. FGD topics can be wide ranging but they mostly comprise issues of opinion, attitude and experience. Using the FGD method requires specialist skills and the scholars state that the researcher has to ensure that the discussion is led by a trained moderator supported by a time keeper / note taker (Berg 2004). The researcher has effective applied strategies in order for the research to achieve its objective.

To be effective, as advised by scholars, a standard FGD comprises between 6 – 10 discussants and lasts about 1 – 2 hours. In order to effectively collect research data on the research topic, there are certain sensitivities addressed in planning FGDs – e.g. gender, age, social status, etc. The method is especially suitable for minors and [semi]literate populations. FGDs are often preceded by sensitization to educate participants on the purpose of the discussion and reassure them about ethical issues. Sensitization was done during participants' recruitment (Kothari 2004).

FGD started off with self-introduction by participants, and the moderator highlighting the purpose, format & procedure of the meeting. In this method, clarity about the purpose and the effectiveness of the method in generating the required type of data was required and well handled. In other words, I was used as the right method for the subject of inquiry (Kothari 2004).

It was crucial to identify the relevant category of participants required for the FGD and how to select discussants which were held in various sectors in Kayinza district. To determine who should preside over the FGD, the researcher decided 2 persons – a moderator and recorder/time keeper. In this research method, the researcher used some electronic facilities

such as audio recorder. In order to use the recorder, the researcher had to seek for consent from the participants for the ethical purpose of the research.

The language used in the discussion was Kinyarwanda and was translated in English as the language of this research paper. In this research paper, people who misuse their land and those who use their land effectively were grouped together. This Focus Group Discussion has been moderated with courtesy. The researcher ensured that the session is not dominated by the most gifted communicators. In addition, acknowledgement of everyone's contributions with verbal appreciation or body language was observed effectively.

3.4. Data analysis

3.4.1 Qualitative data analysis

The research that was undertaken is classified as qualitative in nature. Thus, all data have been indexed, coded and conceptualized in some format in order to reduce the data to a manageable amount. Memos were also be written to assist the generation of theory. First, the researcher has organized data from questionnaires, observation, interview and Focus Group Discussion in a way that allows to quickly retrieving relevant parts. Alongside the development of themes the coding of data will be conducted. In addition, writing analytical memos was also be conducted by the researcher. Analytical memos are basically the ideas that come into the researcher's mind while reading the transcripts.

Field notes were written and work edited at the end of each working day to ensure accuracy in recording and consistency in information given by respondents. Themes were identified and put in coding categories. A scheme of analysis was worked out following the coding categories, using quotations and the most occurring ideas.

3.4.2 Quantitative data analysis

The responses of the subjects were categorized and frequency counts and score tables and percentages calculated. Graphs and pie-charts were also used to present data. Interpretation and conclusions depended on the number of occurrence of each item.

3.5. Encountered limitation to the study

(i) Poor response rates: The researcher encountered poor response rate from the respondents. The researcher was sometimes mistaken to be a government spy. The researcher overcame the problem by securing a letter of introduction showing that I am a university students which stipulated the study's intentions.

(ii) The researcher also encountered a problem of low return of the filled questionnaires and difficulty in conducting interviews and focus group discussions. To overcome this, the researcher made appointments suiting the respondents' activities regarding when to be interviewed and participate in the focus group discussion.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter will mainly look at the core aspect of the research paper. It will focus on the objectives and research questions to enforce the hypothesis of this research paper. It will largely present the information collected on the following areas: the extent to which the citizens understand the impact of well used land in relation to their income and expenses, the challenges citizens are facing in the process of land policy implementation and propose a policy for the way forward so as to eradicate poverty and fight against food insecurity.

4.1 The assessment of the land use projects

In order to carry out a thorough research on the topic, the researcher realized that it is significant to first assess the situation regarding land use awareness for poverty reduction in Kayonza district; and the present project in the District supporting the community to fight against poverty and malnutrition issues. As proved by beneficiaries, CHF in partnership with USAID in a program called “Higa Ubeho” has been an engine significantly to eradicate poverty and malnutrition in Kayonza district (USAID/ Higa Ubeho 2013). The researcher found the interventions carried out by USIU/Higa ubeho to be effective in achieving their goal of increasing vulnerable households’ access to effective land use and food security if it can be reviewed.

The program also improved households’ resilience to economic, nutritional, and health shocks as well as access to education. Beneficiaries spoke of their ability to acquire farming and small business equipment, and opportunities to buy livestock as a result of new savings and lending patterns. Beneficiaries also described healthy weight gain, better meals at home, and more stable access to food. These components of the program have been highly effective. However, beneficiaries frequently highlighted concerns about education materials and financial assistance. Many reported that they were not prepared to take on the task of paying for school fees and school materials currently provided by USAID/Higa Ubeho, raising concerns regarding sustainability.

One of the notable changes that have occurred as a result of the government program is a change in beneficiaries’ food security. Food security exists when individuals have consistent access to sufficient, safe, and nutritious food. Prior to the program, some beneficiaries expressed not having the means to obtain food for their families on a regular basis. However,

many of the beneficiaries experienced significant increases in food security as a result of participating in USAID/Higa Ubeho’s Farmer Field Schools (FFS) (USAID/ Higa Ubeho 2013).

4.2 Research findings

In this academic research paper, seven sectors (imirenge) were visited and thoroughly observed. These sectors observed were divided in two parts. These are central part and peripheral part of Kayonza district. The central sectors are Mukarange, Gahini, Rukara, Kabarondo, Rwinkwavu, Nyamirama and Ruramira. The peripheral part consists by Kabare, Murama, Ndego, Mwiri and Murindi.

4.2.1 The socio-economic characteristics of respondents

Section A of the questionnaire aimed at gathering information about the respondents’ socio-economic background. Data was collected on respondents’ ages, level of education, marital status, number of children and dependants.

4.2.2. Age of respondents

The respondents were classified into four major age groups as presented in table 1

Table 1: Respondents’ age distribution

Item (Age)	Frequency	Percentage
Below 25 years	16	7.9
26-35 years	51	25.2
36-45 years	82	40.5
46 years and above	53	26.2
Total	202	100

Table 1 shows that the majority of the respondents (40.5%) were between 36-45 years, 25.3% were between 26-35 years, 26.2% were above 46 years while 7.9% were below 25 years.

It can be realized that the majority of respondents were middle aged, followed by the aged and the least actively involved were the youth. This could have been due to fact that the middle aged and the aged people have more family responsibilities and therefore, strive to fulfill them. Thus they focus much on self-help and income generating projects than the young ones. On the other hand, whereas the young have few family responsibilities and financial demands, they also lack capital for investment. Many youth, especially those who are still unmarried depend on their parents and relatives.

4.2.3. Respondents' level of education

Respondents were requested to state their highest levels of education in order to find out whether there is a correlation between education level and citizens' awareness on the use of land as represented in Table II.

Table 2: Respondents' education status

Items	Frequency	Percentage
Never went to school	16	7.9
Primary Level	102	50.4
Secondary Level	71	35.1
Tertiary/Post Secondary	13	6.4
Total	202	99.9

Table II shows that 50.4% of the respondents had primary level of education, 35.1% had attained secondary education while 7.9% had never attended school. This shows that participation to kitchen garden should be mobilized among citizens with a reasonable level of education than those without. However, even some illiterate citizens are able to participate in kitchen garden.

4.3 The extent to which the citizens in Kayonza District understand the impact of well used land for their income and expenses

Table 3: The size of the Land

Item	Frequency	Percentage
Hector and above	46	22.7
Under hector	70	38.1
A plot only	79	39,1
Total	195	99,9

The total number of respondents in Table VI (195) was less than the sample size of the returned questionnaires (202) because a person could respond on less than all items. The majority of the respondents (39.1%) have not cultivable land they have a plot where there is only house plus those who have under hector of land (38.1%). If that number of citizens do not participate in the practices of kitchen garden it will be difficult for them to develop themselves because they will be faced to food insecurity.

Table 4: The necessary size of land for poverty reduction

Item	Frequency	Percentage
Hector and above	98	49.4
Under hector but fertilized	27	13.6
Large surface(unspecified)	73	36.8
Total	198	99,9

Considering Table IV, it is shown, in that table it is shown that 49.9% believe that one cannot get enough agricultural production if he does not have at least a hectare of land. 36.8% of the respondents said that it requires large surface, which is not specified, to get enough production. Only 13.6% recognize that with small land, but fertilized, could give much production

Table 5: The practices of kitchen garden

Item	Frequency	Percentage
I have a kitchen garden	48	23.8
I have never understood about kitchen garden	22	10.9
I used to have a kitchen garden but for now I have no time to renew it	97	48.2
I have understood about kitchen garden but I have never seen the model	34	16.9
Total	201	99,9

Table V indicates that a big number, 48.2% have some time ago participated in kitchen garden practices but for now they have no time, they do not see the importance in other words. The percentages of 10.9% have never understood about it, and 16.9% have understood about kitchen garden but have never seen the model. Only 23.8% of the respondents have updated kitchen gardens.

Even though Kayonza district is less populated, the land for cultivation remains insufficient than the national averages. We found that more than 40% of the farms have less than 0.2 ha, 62% less than 0.5 ha and that 80% of the farms operate under 1 ha in area. In addition, some other farms have even smaller land than the figures above. This clearly shows that, there is scarcity of land in Kayonza district. Consequently, the citizens believe that the small land available to them cannot provide adequate daily food to them. However, this small land in

Kayonza district can be effectively utilized to address the challenges of malnutrition and food security. The questionnaires results indicated that the kitchen garden (Akarima k'Igikoni) policy has much potential to address these issues (National Institute of Statistics of Rwanda).

Even though there is small cultivable land, the main problem is that the most number 70% of the respondents said that it is impossible to get enough production from their small land.

According to the results emanated from this research approach, the results proved that sectors in the central part of Kayonza district particularly Mukarange sector know how to use small land and has embraced the "akarima k'igikoni" policy. Citizens in Mukarange sector have akarima k'igikoni (Kitchen garden) which mainly provides vegetables and fruits for the households. However, only Modern Villages in Mukarange sector where there is permanent way of monitoring and evaluation; have effectively implemented the kitchen garden policy.

The observation approach indicated that even though citizens in this sector have embraced the policy of kitchen garden there is widely lack of policy monitoring and evaluation in terms of following up to strengthen the understanding and implementation of this great policy.

Within the seven sectors in the central part of the district, only one sector (Mukarange) found in the centre of the district has the kitchen garden in households' compound. Among these households, 23% have effectively utilized land and have active kitchen garden at the district level. Most of those households are found in the Modern Villages where 90 % households have kitchen garden at sector level.

The rest of the households, 48% of the remaining households' kitchen gardens are unused. They lack several care and consequently are not productive.

Although the government programs have been active in this District, the implementation of the livestock, local businesses, education and other activities brought there have not effectively satisfied food security, citizens do not put their attention on the kitchen garden which can help them to fight against malnutrition, food insecurity and poverty as a whole. In this approach, the researcher visited the District in a silent observation the regarding the land use to curb poverty.

The questionnaire research approach stipulated that about **76%** of the households in Kayonza District have not well understood the significance of the kitchen garden in eradicating

poverty particularly malnutrition and food security. They said that practicing kitchen garden is a waste of time.

Although government initiative has effectively educated citizens, the results emanated from 300 respondents out of 332,000 population of Kayonza district stated 70% of the population in the District does not understand the importance of having kitchen garden for their households' benefits in malnutrition and food security challenges.

According to 70% respondents of the FGD and interviews claimed that the government through USAID/Higa Ubeho program, they were taught that it is crucial to have diversified meals every day which has vegetables and fruits in attempt to address malnutrition and food security challenges.

Having meals with vegetables and fruits however, was widely considered as impossible by households stating that it is not affordable and that is rich households eating lifestyle. They further articulated that there is no policy to enforce and practically implement the theories they are given. Rather, the households have focused in activities generating some income but ignore balance of food to address malnutrition challenges.

4.3.1 Income sources

This section focuses on five main components of income: agricultural income, wage income, business income, rent income, and income from transfers. Household agricultural income: this component is first divided into agricultural income (income from land cultivation) and livestock income. Unless otherwise specified, this report sums the two components into one agricultural component. It includes revenues from sale of crops, processed crop products, livestock products and other agricultural products, own consumption of food and non-food products, and the revenues from renting out livestock and sale of small animals (National Institute of Statistics of Rwanda) .

The income aggregate deducts costs on crop inputs, inputs used for processing crop products and expenditure on livestock and the cost of renting land. Within the costs, the income aggregate includes the depreciation of land and agricultural equipment. The depreciation rate is equal to 0.2 per annum.

Wage income: this includes cash and in-kind revenues received from farm and non-farm work. In kind payments include food and other agricultural products, provision of house and other benefits received for the work.

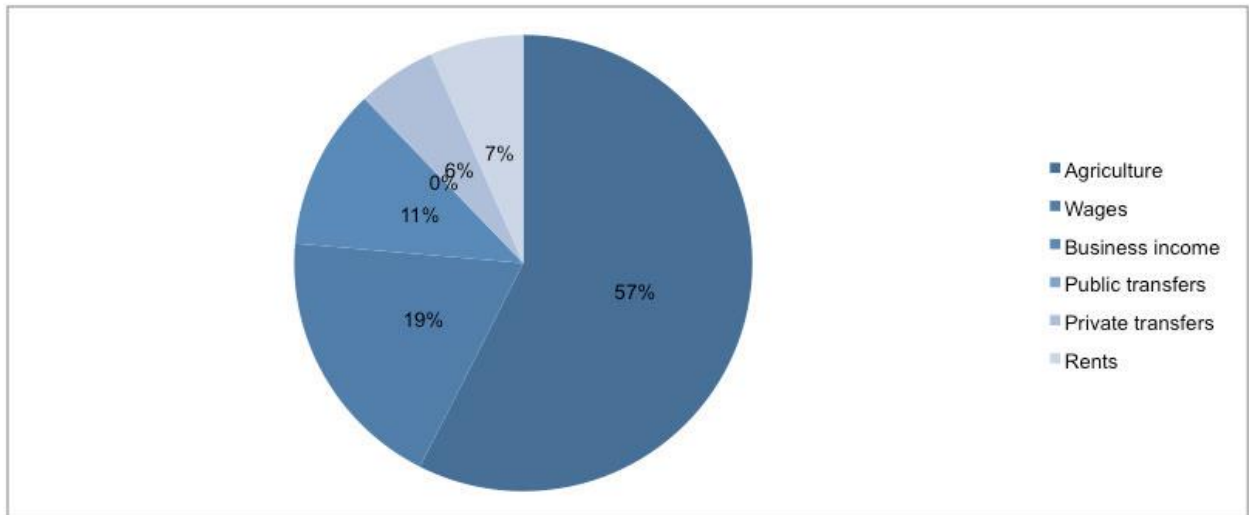
Non-farm self-employment (business): this includes income received net of labour and other inputs. Income from rents: this includes actual rents received from renting out livestock, agricultural equipment and land (rent and sharecropping), as well as imputed rental value of owner-occupied dwellings. Transfers: transfers include remittances received (cash and in-kind) and other private transfers. It also includes public transfers. Private transfers received from dowry and sales of assets and land are excluded

All income values are in real terms, with the price index equal to 100 in January 2011(USAID/ Higa Ubeho 2013). The price deflator used here to express values in real terms is the same one that was used in the poverty analysis. The price index is based on a general basket of goods including food and non-food items, thus implicitly assuming the income generated by a household is spent on this general basket of goods.

The Integrated Household Living Conditions Survey or Enquête Intégrale sur les Conditions de Vie des ménages (EICV3) results shows that at the national level agriculture contributes the largest share of a household's income (46%), followed by wage income (25%), business income (i.e. self-employment), transfers, and rents.

Figure below presents the household income shares in Kayonza district. It shows that household income is driven by agriculture (57%), followed by wages income (19%) and business income (11%). The smallest contributor to household income in Kayonza district is public transfers' income with 0.1%. The Research finding on the agricultural income is clearly presented in the graph below.

Even though the agriculture sector is more profitable in Kayonza District, the results of the findings shown that citizens belief that only those who have the larger surface s are the only ones being able to obtain enough production.



4.3.2 Food security

The results from the research indicated that, one of the notable changes that have occurred as a result of government program is a change in beneficiaries' food security. Food security exists when individuals have consistent access to sufficient, safe, and nutritious food. Prior to the program, respondent noted, some beneficiaries expressed not having the means to obtain food for their families on a regular basis. Many of the beneficiaries experienced significant increases in food security as a result of participating in implementation of kitchen garden policy.

However, the findings stipulate that, even though there has been a great increase of food in Kayonza District this has been taking place in the Model Village which have participated effectively in implementing kitchen garden (akarima k'igikoni) policy. The 5% of the modernized households, according to the findings, have proven that the policy of akarima k'igikoni is a good approach to address food security and malnutrition issues facing citizens in Kayonza district (USAID/ Higa Ubeho 2013).

The research findings show that, households in sectors of central part especially in peripheral part, have engaged in cultivation (in their little land) of one or two type of crops which generate more income on which they depend for their own food as well (For example cassava or maize). Consequently, the kitchen garden initiative remains inactive leading to malnutrition issues that is rising within the District. Although the akarima k'igikoni policy is widely inactive, the research findings further emphasizes that, it can address both poverty and

income issues because Model Villages are benefiting from both in their small land. They have access to adequate food and proper food which provide them recommended nutrition to their households.

4.4.The main challenges in the process of land policy implementation

Table 6: Challenges in land use

Items	Frequency	Percentage
Small land	112	55.4
Lack of fertilizers	12	05.9
Change in climate	41	20.2
Lack of knowledge in land fertilization	37	18.3
Total	202	99.9

The results in table VI show that of the respondents 55.4% have small land and find that as a main challenge in growing crops and fighting food insecurity. 20.2% claim that the climate change is the main challenge in the process of land use, 5.9% do not have fertilizers, 18.3% need more skills and knowledge in land use and maintenance

4.4.1 Lack of government facilities

Considering the results from FGD and interviews, one lady in the interview indicated that, the lessons taught by USAID/ Higa Ubeho program does not have a government policy to enforce it. Many households in Mukarange sector and other sectors across Kayonza District have been taught how to balance food in fighting against malnutrition, food insecurity, and poverty as a whole, but only 20% of the population in the district has tried to implement what they have been taught. The rest 80% find this knowledge not applying to them.

While there have been many benefits that have resulted from the USAID/Higa Ubeho program, certain issues were revealed during the evaluation that it remain challenges for both the program and its beneficiaries.

One of the beneficiaries interviewed, a lady of 38old years from Gahini sector in Kayonza District, described challenges that the researcher found to be problematic for a number of other beneficiaries. The first challenge highlighted by this one is that the location of where her FFS group meets is not close to where she lives. It requires her to walk approximately two hours (1. hour each way) in order to attend the meetings.

While she values the information she receives from these meetings and the time it takes for her to travel to the meetings she realizes that it would be better spent working in the fields or tending to her household. Many beneficiaries that the researcher spoke with in an interview described similar challenges with getting to their meeting locations, not only for FFS but also for their Internal Savings and Lending Groups (ISLGs). If not addressed, the long travel distance could discourage beneficiaries from participating in the training sessions offered by USAID/Higa Ubeho.

Nevertheless, according to the research findings, there are a big number of households who do attend neither the Higa Ubeho nor government programs regarding poverty eradication. This is because they feel that the programs do not concern them. Rather, they are engaging in their day to day activities such working for other households to earn some money for food. The money they earn is not enough to provide recommendable food for their households. There are others who have never heard about the government and USAID/Higa Ubeho trainings due to that the trainings are not mandatory and enforced by government through local administrations. Especially this particular factor has largely stimulated ignorance by stating that the trainings are for modernized households. This is one the issue the proposed policy seeks to address for the benefit of the citizens in Kayonza district.

4.4.2 Lack of governing and management policy

Leoncie's story also highlights a more general problem some beneficiaries have experienced regarding group leaders exploiting group members. While this issue was raised in the context of an FFS group, the researcher learned of similar stories involving ISLGs. In Leoncie's

story, she described the difficulties her FFS group was having with their group leader. Similar to other beneficiaries, Leoncie's FFS group did not have a plot of land to practice the new farming techniques they learned during the USAID/Higa Ubeho training sessions. In order to resolve this issue, the group leader volunteered a plot of land on his property.

However, complications arose during the harvest season in which the FFS group leader harvested the group's production without the approval of the group members. As a result, Leoncie and the other members lost the yields they produced. Normally these yields would have been sold at the market and the revenues distributed amongst the group members or reinvested into the FFS group to purchase materials for the next harvest (i.e. seed, tools, etc.).

Leoncie's experience also reveals a larger issue within USAID/Higa Ubeho in that it does not have a system established for dealing with group management problems when they arise. Leoncie and the other group members informed their local abahuza as well as an RPO staff member of the issue with their group leader but have yet to receive any assistance. A better system needs to be established that can help beneficiaries find solutions to these issues in a more timely and effective manner.

As an orphan, and a guardian of his younger brother, Bin Saidi is able to speak to the researcher regarding to USAID/ Higa Ubeho program. He emphasized that the program is real good and helping households. However, there is no effective government policy governing and enforcing this program. Community leaders tend to manipulate citizens participating in these kitchen garden activities. Saidi is a victim of the kitchen garden proposed by USAID/ Higa Ubeho program, indicated that the ignorance of the kitchen garden emanate from lack a government policy governing and enforcing the program. The local community leaders have no guiding framework in which they address the emerging challenges on kitchen garden initiative.

The general perspective on the kitchen garden according to the research findings indicated that, there is insufficient training activities conducted in Rwanda particularly in Kayonza District. The little trainings available are not followed up to enforce and strengthen the knowledge acquired in these trainings. This is the reason why citizens severally travel long distance to attend the trainings. There is not a follow up especially in those peripheral sectors of the Kayonza District which leads to ignorance to implement the knowledge acquired by

participants due to the fact that they find these skills not applying to them and difficult to maintain in the households.

The cooperatives urged by trainers are not well managed by the community leader from whom the households depend on regarding addressing issues severally arose from the kitchen garden policy implementation.

4.5 Policy proposing the way forward so as to eradicate poverty and fight against food insecurity

This sub-topic is largely based on the outcome of the research paper. It is widely aimed at establishing viable solutions on the challenges emanating from the small land use policy; eradicate food insecurity, malnutrition issues and poverty in general. In order to propose the policy addressing the land use policy especially in kitchen garden for food security and malnutrition issues, it is quite significant to look at the background of the Rwandan agricultural policy and supporters of the government of Rwandan on agriculture policy implementation.

4.5.1. Contribution of NGOs and projects

According to the interviewee namely Severine a lady with husband and three children in Mukarange Sector, stated that the image of my family is really appreciated with neighbors and even with local authorities because the government is calling upon all community members to adopt all development techniques. I have no problem because when local authorities come into my house, they find that she has advanced compared to others in nutrition status, in food security, and accessing financial services...” As you may see, our land is of small space, we don't have enough space to cultivate. So we really appreciate Farmer Field School (FFS) because with those techniques, we have been able to produce on a small space and really have harvested much quantity. We can take some crops, go to the market and sell it and come back in order to meet the other family needs... To me, I should say that FFS has really impacted so much because it even allowed me to increase productivity of my small land and as a result the nutrition status has been significantly improved. In my kitchen garden I have orange, avocados, pawpaw and vegetables. “

Like Severine, Pascal has witnessed a substantial increase in the amount of food his small land can produce as a result of the FFS techniques provided by USAID/Higa Ubeho. Like

many other beneficiaries, Pascal does not own very much land. As a result, he has been hard pressed to produce enough food to feed his entire family. After participating in FFS, Pascal has been able to increase the crop yields on his small plot sufficiently to feed his entire family and produce a surplus that can be sold at the local market. Money earned at the market can then be used to purchase household items. Pascal has seen an improvement in his family's nutritional status as a result of the higher productivity of his land.

The interview was also conducted to some community leaders. The chief of cell in Mukarange who did not want his name to be mentioned stated that before he joined Higa Ubeho, he had many challenges related to the nutritional status of his family because, as HIV-positive, he was almost sick every time.” I spent much time hospitalized and my children were exposed to malnutrition. But since I went to some training on nutrition, I started preparing food from my own small land where before I was really ignoring. For example, I had at home sweet potatoes only. I was thinking it was not enough for my children... I knew that it was a problem. But with my small land I was not able to do nothing more..... I am doing all my best to have vegetables each time we are at home. I really know the importance of having vegetables, legumes, and fruit. Before joining Higa Ubeho I was often hospitalized... But right now I don't have problems regarding sickness when I joined Higa Ubeho. My CD4 increased. And, the other thing is that I do my best to measure the weight of my children each month... The youngest one... he had 19kg and right now he has 22kg [child is 6 years old]. For the other one, she had 25kg and now she has 30kg [child is 12 years old]. That one had 32kg and he now has 35kg child is 14 years old.”

Similarly , Appolie learned the benefits of growing and incorporating vegetables, especially beetrave, into her regular diet. Beetrave, which is a form of beet, is a rich source nutrient. Being HIV-positive, Appolie learned that beetrave can help increase her CD4 levels, giving her body the energy and strength that it needs to fight off infections. This story demonstrates a change in behavior that occurred as a result of USAID/Higa Ubeho, once her health improves , it increase her financial status. Because of the information she received during the nutritional training sessions, Appolie has made beetrave, as well as other vegetables, an essential part of her diet. In addition, Appolie also learned new watering techniques through her FFS group that has allowed her to continue producing vegetables throughout the dry

season. As a result, Appolie and her family are able to eat vegetables with more regularity than before the program.

She further argued that, she had a child there who was almost malnourished. He didn't advance in his weight, before she acquired how to grow vegetables on her own. I was also thinking that with my own compound I could grow up some vegetables but for now I have realized that it is possible.

Peter one of the group of twenty said "I really made a change regarding the hygiene and sanitary issues. And even with nutrition skills I am really happy because the nutrition status changed in my household....We have been trained in food processing and I am able to produce juice from different fruits like mangos and pineapples and can even do... sweet potatoes. I can transform different things from crops... Although it is still difficult to have those machines which are required for producing all that. We are still waiting for electricity to the area so we can start business transforming food. Usually we are just consulting ourselves and we are trying to prepare the field, contributing, thinking about maybe how we can contribute and purchase that machinery and when the electricity is available in the area we shall start running business and processing food."

Athanase's story describes the creativity that it is built into the USAID/Higa Ubeho program. As one of the services provided through their nutritional trainings, beneficiaries learn to convert specific crops into other products that they can either consume or sell. For example, some beneficiaries, like Athanase, make juice from various fruits and vegetables that they grow on their FFS farms. Other beneficiaries use soy they grow up in their land, to produce tofu in and milk thus increasing their protein intake without having to purchase meat. For Athanase, he describes learning how he produces juice from mangos, pineapples, and even from sweet potatoes. he talks about transforming his juicing into a formal business venture with other USAID/Higa Ubeho beneficiaries. However, before he can do that, he must first acquire the proper machinery as well as electricity.

While Athanase's story highlights the success and creativity of USAID/Higa Ubeho, it also highlights a common problem faced by many other citizens who do not follow the trainings on land use and food processing. He argued that they are still facing the problem of food insecurity, thus malnutrition. The program does an excellent job of transferring knowledge to the beneficiaries and introducing them to a variety of new techniques that can not only help

them produces more food, but also improve their overall health. However, once they receive this new knowledge, many beneficiaries are unable to put it into practice due to the lack of resources and materials. For example, Athanase is unable to move forward with her juicing business without the necessary machinery. However, these challenges can be addressed by the beneficiaries themselves when they combine their new skills learned in their FFS groups.

Based on the sub-topic above, there are some households who are tremendously benefiting from USAID/ Higa Ubeho program which has greatly impacted in the kitchen garden program in Kayonza district.

4.5.2 The role of local government.

The background looks at brief guide to the institutional, and policy framework for transformation of agriculture, economic development and poverty reduction in Rwanda. Internationally, Rwanda's agricultural policies are embedded in a frame work of conventions and protocols such as the Millennium Development Goals (MDGs) (Global development aspirations by 2015), the New Partnership for African Development (NEPAD), Common Markets for Eastern and Southern Africa (COMESA), the East African Community (EAC), Vision 202 (the country's long term development framework), the Economic Development and Poverty Reduction strategy 2007-2012 and finally the Plan for Strategic Transformation of Agriculture - (the mid-term implementation plan for the Vision 2020). Strategic interventions to achieve EDPRS objective "increase economic growth" indicates Rwanda's recognition of the agriculture sector's leading role in economic development and poverty reduction. The sector is directly regulated by the National Agriculture Policy (National Institute of Statistics of Rwanda). Those policies have been mobilized and followed up and brought remarkable impact.

Pertinent with the current National Agricultural policy framework is a focus on strategies to enhance transformation from subsistence to commercial Agriculture (the PSTA-II). Under the PSTA-II, the Government recognizes low agricultural production and productivity as key impediments to commercialization. Given the rapidly increasing population and limited agricultural land, strategies to increase land productivity (production intensification) and create more agricultural productive land are considered in the subsequent agricultural policies (Gilbert 2005).

Rice is recognized as a key food and commercial crop and hence the National Rice Policy which looks forward to enhance self-sufficiency of rice markets in Rwanda has largely taken much focus. Agricultural program interventions are well aligned to contribute to agricultural transformation (the national agricultural development agenda). As well as rice production has been enhanced and its production increased, also if kitchen garden program is reinforced and strengthened by government and followed up by local authorities, the problem of food insecurity would take an end.

Some of the programs which include the Girinka program - One Cow per poor Family - by the Rwandan Government, the Umutara Community Resource and Infrastructure Development Project-by IFAD, the Purchase for Progress- by WFP and the Millennium Village Project (Porter 1985).

Alongside the agricultural policies and programs, the National Decentralization Policy and the Decentralization Improvement Program exist (MINILOC, 2004). They aim to empower the people socially, economically and technically and improve its local governance - looking forward to empower the community to fight poverty in Rwanda. They play a complementary role to the effective implementation of agricultural policies and programs serving the farming community. All agricultural programs and policies have been institutionalized under the MINAGRI, the Ministry with the responsibility for the agriculture sector. All these programs performed because local government put more efforts in mobilization and followed up their implementation.

MINAGRI, in collaboration with other government ministries (MINECOFIN, MINILOC, MINIJUST), national boards (RAB, NAEB), Local NGOs (Caritas, among others) and International Donor Agencies (FAO, World Bank, DFID, UNDP among others). Also more complementary to the NAPs is the National Land Policy (2004), the 2010 Trade Policy Framework, the gender equality provisions in the 2005, Organic Law, the 2003 Constitution, the 1999 Family Code and the provisions of current land tenure system that aim to enhance land tenure security for achievement of Rwanda's EDPRS and PSTA aspirations (National Institute of Statistics of Rwanda), can include the promotion of kitchen and monitor its implementation so as to solve the problem of small territory.

The proposed policy articulates the approach and activities required for achieving the targeted growth in agriculture. The PSTA interventions and objectives are aligned to meet the EDPRS's focus to "raise agricultural productivity and improve food security". The PSTA aims to "rapidly increase agricultural output and incomes under sustainable production systems for all groups of farmers and to ensure food security for all the population" and "to

increase output of all types of agricultural products with emphasis on export products, which have high potential and create large amounts of rural development.

It sets out to: energize activities to improve the production and productivity of households' kitchen garden through production intensification, promote the use of farm mechanization in appropriate forms, promote development of nutrition, and enhance agricultural techniques to address food insecurity and malnutrition issues. PSTA has four primary programs including; intensification and development of sustainable production systems, support to the professionalization of producers, promotion of commodity chains and institutional development. PSTA's implementation effectiveness is measured on seven indicators: production of key food security crops, mineral fertilizer used, area of marshland developed for agriculture, proportion of arable land sustainably managed against soil erosion, percentage of livestock under intensive system, ratio of farm households to extension agent, value of agricultural exports (Porter 1980). If the government pursues the model of PSTA, there could be an improvement in kitchen garden practice and therefore satisfy the problem of small land.

Regarding to national land use policy, Rwanda is striving to attain household self-reliant on food security which eradicates malnutrition challenges. Through USAID/ Higa Ubeho program and other activities, the government may sets out innovations aimed at enhancing the productivity levels and raising the standards of living in urban, semi-urban and rural areas. It should seek to enhance quality and quantity of food for households, and seeks to energize activities to improve the production and productivity of food, through kitchen garden practice.

The government may plan to focus on fruits and vegetables production intensification, to improve the efficiency of use of inputs such as seeds, fertilizers, soil and water. The policy, however, recognize the National Decentralization Policy (NDP), the Decentralization Implementation Program (DIP) and the National Land Policy (NLP) are policies that have greater impact on overall agricultural transformation (Usaid/Higa Ubeho 2013).

The government of Rwanda implemented the Poverty Reduction Strategy (PRS) in the period 2000-2005, to manage the transition period of rehabilitation and reconstruction following the aftermath of the war and genocide. The strategy registered progress with an insignificant contribution to poverty reduction and limited progress in the agricultural production sector. In

the period 2008-2012 EDPRS, a strategy that focused on economic development and poverty reduction was implemented.

The EDPRS's evaluation for progress in the period of 2008-2011 indicated remarkable success with regard to raising agricultural productivity, ensuring food security, enhancing economic growth and reducing poverty in Rwanda, but that agricultural focused on larger surface where the policy of land consolidation was applied. The EDPRS II is a new strategy aiming at advance EDPRS I on national development and poverty reduction in the period of five years (2013 – 2018), in this phase it should. be better to include the agriculture on small land where kichen gardens should be practicized

4.6 Policy to address emerging challenges in agriculture activities for poverty reduction

In order to achieve poverty reduction enshrined in the above government policy, there are factors largely emanated from the respondent's information in Kayonza district. These factors are as follow:

Both government and international organization's programs such as the Farmer Field School (FFS) demands to be reviewed in order to avoid focusing largely in theories but to balance theories and practical activities to internalize these theories. Many 80% households in Kayonza District state that, theories are less effective if there are no adequate practical activities to enable utilization of the theories acquired. The government's policy of akarima k'igikoni needs to be revised in order to offer theoretical and practical knowledge to all citizens in Kayonza district.

As an evident, Pascal is now seen as a model within his community to be emulated by his neighbors. As a result, the local authorities and community leaders instruct members of Pascal's community to begin adapting these techniques. Pascal's story also demonstrates the ripple effect in communities as a result of the FFS training sessions. Pascal's neighbors are able to benefit from the program, without being official. However, Pascal seconded Severine's statement that there is no follow up policy enforcing kitchen garden program in the community which widely leads to ignorance of especially those illiterate households.

Local community is an important tool determining social change for community ideological transformation for the development (Barney 1991).

Secondly, these trainings activities should be monitored and governed by the local community administration in Kayonza district because these local authorities are permanently and day today near the households engaged in the agricultural activities particularly kitchen garden program. The local community in this policy will be trained in ways in which land use for kitchen garden can eradicate poverty. Officers dealing with kitchen garden program in all sectors of Kayonza district will be established and well trained on their duties to support citizens. Strategies are very crucial as far as tremendous change for development is concerned (Scholes et el 1997).

Thirdly, there is a great demand for more training station in order for citizens to have easy access to these trainings. The policy seeks to effectively address this issue by providing more trainers on food security and malnutrition issue in attempt to address poverty challenges.

Therefore, the policy aims to establish more training centers. In each cell of sector there will be a training centre which reports to the sector and the sector reports to the district for the program evaluation on the district level. This will effectively address the challenges of traveling long distances to reach training centers.

Vegetables grown in the kitchen garden of the households will be monitored by local administration officers to ensure that right vegetables are achieved in the daily meal of households. Fruits are very crucial to address malnutrition issues. The policy seeks to authorize local communities' to ensure that the importance of fruits grown in kitchen gardens of each household is considerable. These will diminish ignorance by communities where citizens engage in crops generating money than what benefits their daily meal and their body in particular.

Fourthly, for those who decide to share kitchen garden due to insufficient land, the government through local administration officers stationed on the sectors will harmonize citizens' equal participation and equal share of the outcome. These local officers are governed by Ministry of Public Services and labor code of conduct, and whoever give power service to the citizens regarding kitchen garden activity will face the law enforcement.

However, the landless households should be effectively trained to use modern agricultural system such as aero-farming. This approach will use very affordable means that will be convenient in urban households; and will ensure food security for those who do not have land to cultivate.

Fifth factor to be emphasized in this proposed policy is to ensure more trainers from the international organizations. The research realized that, USAID/ Higa Ubeho has been the only active program offering trainings on the nutrition standards to fight poverty and its consequences. FAO, World Bank, BTC, DFID, CIDA, UNDP among others are very important and capable to provide trainings on the nutrition behavior of the households if the government requests them. The policy seeks to advice the government on the particular issue.

The policy, lastly, seeks to establish mechanism to ensure effective participation of the citizens in the kitchen garden program. Those households who ignore the implementation of the kitchen garden will face consequences discussed with the local administration authority.

CHAPTER FIVE: CONCLUSION AND RECOMENDATIONS

5.0 Summary of the main findings, conclusion and recommendations

This thesis is set out to examine the improvement of the implementation of land use policies as a strategy to poverty reduction in Kayonza District. The government of Rwanda has given to agricultural sector a high priority in planning for development; aimed at increasing households income and reduce poverty. EDPRS in its priority sectors, agriculture development as the fourth priority is a crucial factor in poverty reduction.

The government's agricultural vision is set very high to the extent that it is expected to rise from 14 percent to 26 percent of the national GDP. The rise of the food quantity has taken place as a result of expansion of maize and wheat farming. However, in the market, the production of fruits and vegetables is kept at minimum level which has been leading to a high demand. Chapter one looked at the general perspective on the research topic of this research paper. It stipulated that land use is largely influenced by a number of factors such as climate, socio-economic and government policies.

The cultivated land increased at the expense of the pasture, fallow and woodlots. The chapter further presented that Rwanda is a small country with a small arable land proved by the figures in the chapter. Even though arable land is very small in the country, the government of Rwanda has realized that agriculture will significantly contribute to poverty reduction and food security particularly in Kayonza district.

The chapter one discusses the problem statement of the research problem. Even if the government of Rwanda implemented the policy on land exploitation by the system of "akarima k' igikoni" in order to eradicate mainly malnutrition, food insecurity and poverty in general. This policy has not been followed up and it should bring much in the sight of food security. In addition, the chapter indicated the research objectives, research questions and hypothesis of the research paper.

Chapter two looked at the literature review of the research paper. It looked at the views of other researchers on the research topic. Mugenda, et al 2003:29) states that, Literature review involves the systematic identification, location and analysis of a document containing information related to the research problem being investigated. Mutai went further and stipulated that thee term literature review implies a review of the empirical studies, historical records, government reports, news paper accounts and so forth.

According to this chapter, land is the most critical resources for the rural poor dependents on farming for their livelihood. Urban agriculture or agriculture on a small land, at first glance, may appear to be a fairly simple topic: Scatter a few plots about the City and let residents start gardening. In reality, however, urban agriculture impacts a community in a variety of ways, from providing food security, environmental benefits, and even modifying a city's urban form. Similarly, in spite of its seeming simplicity, urban agriculture does not just happen. To foster the development and growth of urban agriculture, a city may have to consider implementing techniques that include zoning ordinances, comprehensive plans and, in some cases, state legislation.

The chapter focused on the literature on the land use, eradication of poverty, policy making and policy implementation. It looked at the theories and models on Land Use Change which state that Land is used to meet a multiplicity and variety of human needs and to serve numerous, diverse purposes. When the users of land decide to employ its resources towards different purposes, land use change occurs producing both desirable and undesirable impacts.

In the chapter, in the theoretical analysis of land use change is essentially the analysis of the relationship between people and land. Why, when, how, and where does land use change happen? To provide answers to these closely interrelated questions, theories have been advanced and models have been built in the last 200 years. This contribution attempted to provide a panorama of theoretical and modeling approaches to the study of land use change as well as to examine broadly how well they reflect the drivers, processes and implications of this change.

The chapter talked about the challenges between theories and models. In this regard it stated that, theories usually place heavy demands for operationalization especially when important land use change drivers are qualitative and there is no consensus on how best to express and measure them. Scale considerations complicate the operationalization issue further. Models at the micro-level of the parcel require a theory of how individual and higher level factors combine to produce the land use changes observed as well as how to aggregate micro-level changes into higher level changes in land use patterns. The nature of the linkage between theories and models is a matter of the trade-offs chosen in a particular applications. The land use is largely, according this chapter, influenced by numerous factors such as Land value, zoning and climate. It concluded by looking at economic development versus agriculture.

Chapter three looked at the research methodology used to carry out in order to achieve the answers to the research questions and achieving the objectives of the research paper. It defined and widely discussed on social research and its various approaches found in the research methodology. It deeply presented these approaches which led to the right approach chosen to be used in this research paper. The chapter defined the term research in a detailed perspective in order to see how it links with the approaches taken in the research procedures of the research paper.

The research is a form of enquiry, original investigation undertaken in order to gain knowledge and understanding. It aims to carry out delicate inquiry or a critical examination of a given phenomena. It was widely proven that, in order to effectively carry out economic development of the people, one has to look at the social behaviour aspect of this particular community in which the research is being conducted. Social research focuses on the understanding human behavior, social institutions and the world around us.

The chapter looked at two approaches in the research which are termed as positivism and post-positivism. Positivism believes that knowledge is or should be limited to what we can observe, measure and experience. Objectivism is a key principle here; while post-positivists assert that social reality is constructed by individuals based on how they perceive and relate to the world around them. Post-positivism became the better approach for the research paper. The chapter clearly discussed two divisions of research which are social research and scientific research.

Qualitative method has been chosen to as the best method in the research process in order to effectively achieve objective of study paper. The chapter further looked at various methods applied in the research process. There are various methods of primary data collection in developmental research conducted in Kayonza district. Questionnaire and interviews are the methods dominated the research process. Observations and focus group discussion were mainly regarded as complimentary methods.

Questionnaires and interviews in the research process targeted various classes such as working, famers and home-makers. Focus Group Discussion (FGD) also targeted various levels of classes while observation was only conducted by the researcher. In addition, the chapter further looked at sampling, research design and data analysis methods.

Chapter four is the core chapter of the research paper. It looked at the general findings of the research paper by answering research questions in line with the objectives and the hypothesis of the study topic. The chapter assessed of the land use initiatives available in Kayonza district; in order to investigate the extent to which citizens understand the importance of well-used land in relation to their income and expenses, the challenges in the process of land policies implementation and how to formulate the policy proposing land use in fighting against poverty. CHF in the partnership with Rwandan government and USID/ Higa Ubeho has carried out various initiatives in the district.

In the chapter, the program improved households' resilience to economic, nutrition, and health shocks as well as access to education. Beneficiaries spoke of their ability to acquire farming and small business equipment, and opportunities to buy livestock as a result of new saving and lending patterns. The chapter states that, beneficiaries described healthy gain, better meals at home, and more stable access to food which proved the program to be effective to those who are actively participating in it.

The chapter articulated the main challenges that are faced by Kayonza District households. Kayonza District has insufficient land for cultivation. However, research findings in the chapter proved that the small land can be productive and address issues of malnutrition and food security, if well used as the government policy suggests in kitchen garden program. The modern villages in Kayonza district especially in the central part of the district have embraced the implementation of the policy and have a mechanism of monitoring and evaluation of this implementation.

The majorities of the households in the District are not participating in the implementation of the policy and hence are facing serious problems of food security and malnutrition. This because they have not understood the importance of either joining the trainings or have not heard the announcement of the training programs.

In the chapter, there are many citizens who wish to attend the trainings but the centres for trainings are quite far from where they live which has been one of the challenges for the kitchen garden policy implementation. Citizens focus largely in crops generating income rather than their recommended consumption.

The findings presented that, there are some households who have effectively benefited from participating in the programs. The proposed policy aims to address the challenges in the

kitchen garden program implementation. It further intends to ensure that all kayonza district households are benefiting from the program even better than those the research interviewed.

The chapter concluded by suggesting other options for Kayonza District households who do not have arable land. In the proposed policy, the aero-farms can effectively assist the landless people in Kayonza district.

5.1 Recommendations

The research findings have identified several factor and the need of urgent interventions in order to significantly address food security, malnutrition and poverty reduction as a whole. The recommendations are as follow:

(i) Increase understanding on the importance of land use

- Both government and international organization's programs demand to be revised in order to provide theories and practicals of agriculture on small land, focusing on the importance of well used land

(ii) Fighting against challenges in policy implementation

- There should be more training centers at least one or two in each sector where sessions on FFS would be offered.

(iii) Way forward to improve policy implementation

- The government need to establish monitoring and evaluation of the training program and kitchen garden policy implementation.
- Local administration should be trained and given responsibilities to facilitate the trainings and implementation of the kitchen garden policy.
- There should be an adequate observation of the vegetables and fruits grown in the kitchen garden by the households to ensure that they grown according to the demand of the households.
- Lastly, the local trained officers should hold several monitoring on the preparation of the meals within the households.

(iv) Areas for further research

- For further research, the researcher may focus on how citizen could integrating small husbandry on small in their daily activities as a strategy of poverty eradication
- It is suggested that further researchers focused on the fertilization of small land in order to fight against arable land and climate related challenges

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Questionnaire

Dear Respondents,

My Name is MUSHIMIYIMANA Lydia, student in Master's Programme at National University of Rwanda and I am carrying out the research entitled **“Improving the implementation of Land use policies as a strategy to poverty reduction in Rwanda”**
Case study of Kayonza District

I humbly request for your assistance in answering and I ensure you that , your responses will be treated in confidence and used only for academic purposes and will be for great help in improving the social- economic welfare as well as policy implementation.

Thank you for good co-operation with us.

Section 1. Questions related to the importance of well used land (Ibibazo birebana n’ akamaro k’ ikoreshwa neza ry’ ubutaka)

1. Isambu yanyu ingana ite?(What is the size of your land?)

- Hejuru yagitari/ Hector and above
- Igice cya Hegitari/ Half hector
- Itageze ku gice cya Hegitari/ under hector
- Ni ikibanza gusa/ a plot only

2. Ni iyihe myaka ukunze guhinga mu isambu yawe?(What kind kind of crop do you often plant?)

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.....
.....
.....

3. Mbese umusaruro ukuramo ubona ugufasha kwiteza imbere? (Is your haverst enough to improve your welfare?)

.....
.....
.....
.....

4. Ubona ari ubutaka bungana iki bushobora gufasha umuntu kwivana mu bukene?(What is the size of land that could hep youto increase you social economic welfare?)

.....
.....
.....
.....

5. Hari icyo uzi kuri gahunda y' akarima k' igikoni? Have you ever understood about kitchen garden?)

- Yego ndagafite(Yes I have it)
- Ndakazi ariko ntako mfite(Yes but I don't have it)
- Nigeze kukagira ariko karashaje(I used to have it)
- Iyo gahunda sinyizi(I don't know about it)
- Ibindi bivuge(
Other/specify.....
.....

Section 2. Questions related to the challenges of well using land (Ibibazo birebana n' imbogamizi mu gukoresha ubutaka neza)

6. Mbese hari imbogamizi uhura nazo mu gukoresha ubutaka bwawe? (Do you meet some challenges in using your land?)

- **Yego (Yes)**
- **Oya (No)**

7. Mugukoresha ubutaka bwawe , ni izihe mbogamizi uhura nazo?(What are the challenges do you meet in exploiting your land?)

- Ubutaka buto(small land)
- Ubutaka butera(arable land)
- Ihindagurika ry’ ibihe(climate change)
- Ubumenyi budahagije(lack of expertisein land use)
- Izindi zivuge(other, specify).....
.....
.....

Section 3. Qustions related to policy implementation in order to fight against poverty(ibibazo birebana n’ ishyirwa mu bikorwa rya gahunda yo gukoresha neza ubutaka)

8. Mubona mwagira ruhare ki ku ruhande wanyu kugirango imbogamizi muhura nazo zirangire? (What could you do by yoyuselves to overcome those challenges?)

.....
.....
.....

.....9. Mubona se hari icyo ubuyobozi bwabafasha kugirango izo mbogamizi zirangire? (Could be any assistance from government to overcome those challenges? Explain)

.....
.....
.....
.....



Good exploitation of small land with modern agriculture (Kitchen garden)



The interviewees at the workplace



The models of aero farming





Sources of photos

1. Photo of unused land: photo from the researcher
2. Good exploitation of land(kitchen garden): photo from the researcher
3. Interviewees at their workplace : photo from the researcher
4. Aerofarming models : [www.google./ kitchen](http://www.google.com/search?q=kitchen+garden) garden