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University of the Witwatersrand

Johannesburg

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School of Social Sciences

The Role of Land Consolidation Programme in Household Food Security in Rwanda: A Case Study of Household Farmers of Gisenyi Village of Bugesera District

By

Jules Ntirenganya

A thesis submitted in partial fulfilment of the requirements for the degree of

Masters in Sociology

June 2012

DECLARATION

I hereby declare that this research report is my own, original and authentic work. It is submitted for the Degree of Masters of Arts in Sociology at the University of Witwatersrand, Johannesburg, South Africa. Where I have used the work of other authors, I have properly acknowledged them and I have not copied any author or scholar's work for intention of making it my own. It has not been submitted before for any other degree of examination at any other university.

_____ _____

Jules Ntirenganya Date

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ABBREVIATIONS

ADF	African Development Fund
AMC	Agricultural Marketing Corporation
ACORD	Association de Coopération et de Recherche pour le Développement
CFSVANS	Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey
CFSVA,	Comprehensive Food Security and Vulnerability Assessment
FAO	Food and Agricultural Organisation
FCS	Food Consumption Score
GNC	General National Census
GDP	Gross Domestic Product
IFDC	International Centre for soil Fertility and Agricultural Development
ICARRD	International Conference on Agrarian Reform and Rural Development
IFRC	International Federation of Red Cross and Red Crescent Societies
LC	Land Consolidation
LCP	Land Consolidation Programme
MVP	Millennium Villages Project
MINAGRI	Ministry of Agriculture and Animal Resources
MINECOFIN	Ministry of Finance and Economic Planning
MINITERE	Ministry of Land, Environment, Forests, Water and Mines
MINIRENA	Ministry of Natural Resources
NAS	National Agricultural Survey

NISR	National Institute of Statistics of Rwanda
NGO	Non-Governmental Organisations
TANU	Tanganyika African National Union
UNDP	United Nations Development Programme

ABSTRACT

The aim of this study is to investigate the outcomes of the Land Consolidation Programme (LCP) in household food productivity. The implementation of the 2004 Rwandan National Land Policy (which incorporates LCP) has been one of the Rwandan government strategic attempts to improve the livelihood of the Rwandans. In this study we look at some of the social-economic factors benefited by household farmers through the LCP since its implementation in 2007.

In Sub-Saharan Africa many people depend on land for their livelihood and consequently, one of the obvious negative impacts has been the fragmentation of land. Historically the customary land management, in which inheritance is the major mode of land acquisition, has been the main way of allocating land in African societies. This communal tenure is viewed as unstable and leads to detrimental implications, in the form of mismanagement and overexploitation of the available land. The demographic pressure has also aggravated the issue of land scarcity and land fragmentation. The latter has consequences on agricultural productivity since it makes harder the efficient use of land.

In this study the researcher explores the outcomes of the LCP in Rwanda as a type of land reform that aims at preventing fragmentation of land and enhancing the livelihood of household farmers. For achieving this objective, the study used a case study of household farmers from Gisenyi village of Bugesera district (in Rwanda) who are involved in the LCP since its implementation. Empirical data was obtained through in-depth interviews with 20 household farmers and 8 key informants. The emphasis in the study was put on investigating the state of household food productivity in Gisenyi. The study was guided by the property right theory and its basic conceptual assumption of enhancing the income through credit access.

The findings of the study demonstrate that household farmers in Gisenyi village have benefited from the LCP. Household farmers confirmed that agricultural productivity has increased due to the new farming techniques brought by the programme. The study concludes that once the programme is properly and fully implemented, the LCP will highly enhance food self-sufficiency situation in Rwanda, improving also the livelihood of rural areas through other benefits such as infrastructure development.

CHAPTER ONE: INTRODUCTION

1.1. Background Information on Rwanda

Rwanda is a landlocked Eastern African country, bordering Uganda (North), Tanzania (East), Democratic Republic of Congo (West) and Burundi (South). Rwanda has an estimated area of 26338 square kilometres, with a population currently estimated to be 10.718.379 and a population density of 407 inhabitants per square kilometres (General National Census, GNC 2002, National Institute of Statistics of Rwanda, NISR 2011). Rwanda is often referred to as the country of a thousand hills, on account of the hilly and mountainous landscape (Veldman and Lankhorst 2011). The Rwandan land ownership system has been historically defined by customary law (United Nations Development Programme, UNDP 2008).

The pre-colonial Rwandan society was characterised by the land tenure system whereby the land was owned and distributed by the King (Kagame 1952). Under the colonial period, the Belgian administration sought to enhance the rights of individual land-users, by abolishing the former system and proposing exclusive individual land rights (Musahara and Huggins 2004). This new system divided land into even smaller farm fragments. Following the Rwanda's independence (in 1962) till 1994 the land tenure system in Rwanda was still based on customary law (inheritance) and the written law, which attribute land rights to individuals. With the overwhelmingly increasing population, the problem of land scarcity and land fragmentation continued to develop, subsequently affecting food security (Ministry of Land, Environment, Forests, Water and Mines, MINITERE 2004). Given its small surface area and its growth which was estimated at 2.7 million in 1960, the population of Rwanda had risen to 7.2 million by mid-1991 (May 1995). In addition, the post-1994 genocide Rwanda was also characterized by land disputes due to the mass return of refugees of 1959 and 1973 (Musahara and Huggins 2004, Takeuchi and Marara 2011, Crook 2006).

Throughout of the country's history, the problem of land scarcity and land fragmentation increased gradually. The lack of proper land management resulted into poor productive farming. The post-genocide government of Rwanda started to establish ways of addressing the problem of land scarcity and improving agricultural productivity. Hence in 2004 a land reform programme (which incorporates a Land Consolidation Programme, LCP) was adopted. This programme was aimed at guaranteeing land tenure security for all Rwandans and giving guidance to the necessary land reforms with a view to good management and rational use of national land resources (International Conference on Agrarian Reform and Rural Development, ICARRD 2006).

1.2. Aims and Rationale

This research is aimed at examining the outcomes of LCP on household food productivity in Gisenyi village of Bugesera district, in the East Province of Rwanda. Land consolidation (LC) is defined as projects that are conducted to consolidate fragmented agricultural properties, as well as dispersed parcels from different farms in order to achieve improvements in the agricultural productivity and in living standards (Cay and Iscan 2011, Hartvigsen 2006). The Rwandan land law defines LCP as a procedure of putting together small plots of land, in order to manage the land and use it in an efficient uniform manner, so that the land may give more productivity (Gazette of the Republic of Rwanda 2005).

As pointed out in the previous section, various aspects have contributed in aggravating the land problem in Rwanda. According to the Rwandan Ministry of Finance and Economic Planning (MINECOFIN 2007), the situation in Rwanda is such that 2 percent of cultivating households do not own land; they rent, sharecrop or "borrow" land. More than 60 percent of

households cultivate less than 0.7 hectare of land while a quarter cultivate less than 0.2 hectare. The households' standard of living is closely related to the size of the farms; hence those holding small land parcels are generally the poorest because they cannot produce enough food to feed their families. Furthermore, the soil in Rwanda is vulnerable and very erosion sensitive (MINITERE 2004). In some areas (in Rwanda), the land's morphology is not ideal for agriculture since it is characterised by very steep slopes that favour soil erosion. The latter sweeps away (into rivers and dams) the fertile top soil which is essential for agriculture, for it generally contains nutrients necessary for crops development. The soil erosion phenomenon may lead to the loss of soil fertility (Olson 1994) and this has a negative impact on agricultural production. Erosion and land degradation have long been assumed to be severe and major reason of the poverty and food insecurity in the country (Olson et al. 2003).

Adekunde (2007) argues that, the traditional and primitive farming mechanisms and practices (such as intercropping, non-application of inputs, lack of fallowing system), used for centuries in Africa, have not changed significantly because of limited exposure to new technologies as well as economic constraints. However, despite the currently evident limitations of the African traditional farming methods, the latter have been an effective strategy for providing basic survival food needed. African small-scale farmers have developed traditional complex farming systems that have allowed them to meet their subsistence needs for centuries without depending on mechanisation or modern chemical inputs (Peshin and Dhawan 2009).

Recent reports point out that in Rwanda in general, and in Bugesera in particular (which is the focus of this study), food insecurity has been a serious concern. The food security

indicators[1] envisaged by the International Federation of Red Cross and Red Crescent Societies (IFRC) have exposed the situation of food security in Rwanda as lagging below standard. Food security is linked with food self-sufficiency and is measured by the ability of the household to secure its need for staple food. In addition, food security depends on the availability of cash which will enable a household to purchase staple food and basic factors of production such as land and labour (Calon 1990).

The NISR (2006) reports that in 2006, in spite of remarkable economic growth during the post-1994 genocide reconstruction of the country, the population of Rwanda was still extremely vulnerable to food insecurity and malnutrition. According to the 2008 National Agricultural Survey (NAS) conducted by the NISR, in 2008 there was an unsatisfactorily food self-sufficiency in Rwanda with regards to food productivity: only 15 percent and 10 percent of agricultural households declared having reached their level of food self-sufficiency (NISR 2008). Furthermore, the NISR (2009) reported that, nationally, 4 percent of households were found to have a poor food consumption score[2] (FCS), 17 percent have a borderline FCS, and 78 percent have an acceptance FCS. In addition, nationally 9.3 percent of households received food support in the 12 months prior to the 2009 Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey (CFSVANS). The 2009 NISR report also indicated that Bugesera region was most vulnerable, in terms of food security, compared to other parts of the country. In Bugesera, 45.7 percent of households reported having received food assistance. The second highest region is Huye district, where 16.9

[1] According to the International Federation of Red Cross and Red Crescent Societies (IFRC 2006:2) an individual, a household or community, a region or a country can only be food secure when all members at all times are able to purchase, produce, obtain or consume sufficient, safe and nutritious food to meet their needs and preferences for a healthy and active life. According to this view, food security is essential for healthy, productive, and quality life

[2] According to the World Food Programme, the FCS is a composite score based on dietary diversity, food frequency, and relative nutritional importance of different food groups

percent of the households reported having food assistance, and the third were Nyaruguru-Nyamagabe districts with 11.1 percent of household having received food assistance.

In order to deal with food insecurity, the post 1994 Rwandan government implemented a land reform policy in 2004. The LCP was adopted as part of this land reform policy and implemented in 2007 with the aim of joining small arable plots of land into large farms in order to improve agricultural productivity. The Article 20 of the land law N° 08/2005 explains the process of land consolidation. It states that:

> *In respect of public interest and in a bid to improve rural productivity, the Minister having agriculture in his or her attributions [...] may approve the consolidation of small plots of land in order to improve land management and productivity. Each landholder shall be entitled to the rights over his or her parcel of land* (Gazette of the Republic of Rwanda 2005).

Rwanda is strongly dependent on agricultural production. Agriculture in Rwanda contributes around 39 percent to national Gross Domestic Product (GDP) and generates about 63 percent of total export revenues (Ministry of Agriculture and Animal Resources, MINAGRI 2010). Agriculture is also crucial for national food self-sufficiency, accounting for over 90 percent of all food consumed in the country (World Bank report 2011). Certainly, any improvement in this sector will significantly enhance the livelihood of Rwandans, in general.

To our knowledge, no studies have been previously conducted to specifically assess the outcomes of LCP on household food productivity in Rwanda. Literature contains only studies concentrating on theoretical content of LCP (Ansoms 2008, Ansoms 2010) and implementation process of this programme (Huggins, 2009).

The present study seeks to examine the outcomes of LCP in Rwanda, where about 83 percent of the population depends on food production. The research focuses on food productivity, which is one of the defining aspects of food security. In this way, the contribution of this work to the academia would hopefully be to provide scientific knowledge of the relationship between government policies and food security.

1.3. Research Questions

The main objective of the study is to assess the outcomes of the LCP on household food productivity in Bugesera district (in Rwanda). In order to attend this objective, this research will be conducted based on the following key research questions.

The main question to be answered through this study is:

> What are the outcomes of LCP on household food productivity in Rwanda's Bugesera district?

Secondary questions include:

1. What is the current state of the household food security in the post LCP phase?
2. What are the household farmer's views with regard to LCP both in policy and practices?
3. Have communities participated in the LCP?
4. What forms of infrastructure support do farmers receive through the LCP?

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. An Overview of Land Fragmentation in Africa

Land fragmentation can be viewed as including a process of farming progressively in small parcels of land. This, inevitably, has negative impact on agricultural productivity. Furthermore, land fragmentation may hinder chances for economies of large-scale farming, and crop marketing. It may also hamper mechanisation and make it harder to control losses to crop thieves, pests, birds or other animals (Shipton 1989, Oppong 2009).

Blarel et al. (1992) emphasise that the costs of fragmentation include increased travelling time between fields, which leads to lower labour productivity and higher transport costs for inputs and outputs, negative externalities such as reduced scope for irrigation and soil conserving investments as well as the loss of land for boundaries and access roads. Clay (1996) adds that there may be good reason to believe that farm fragmentation inhibits farmers from enhancing productivity. This implies that the level of investment required and the relative risk of investing in distant parcels may reduce the incentives for certain types of conservation investments.

Different factors have contributed to land fragmentation in Africa, in general. One of these aspects is land ownership system. Throughout history, in most parts of African societies, initial rights to land are generally established through clearing the bush and first occupation. The individual who first cleared the land and his descendants retain a distinguished right over it and can grant more or less extended and more or less temporary rights to others (Reenberg and Lund 1998). Moreover, many empirical studies converge to show that, the major mode of land acquisition continues to be inheritance: the customary land management rules whereby

individuals gain access to land according to their positions within kinship networks and/or allocations made by customary authorities (Quan 2007). Over time, according to Migot-Adholla and Bruce (1994), people experienced simultaneous simplification and individualisation of rights whereby households increasingly acquire broader rights of exclusion and transfer as population pressure and levels of commercialisation increase. Families enjoyed rights of use over different parcels of land. In this trend, family rights were transmitted through prevailing rules of succession, which allowed divisible inheritance.

For instance, in their study on Eastern Africa, Olson and colleagues (2004) found that, in the areas characterised by high agricultural potential, there was clearance of the forest for grazing domestic animals and for shifting cultivation. There was also change from clan-based land holdings to individual family farms. As ownership is transferred from the group to the individual, and as farms shrink as seceding generations split the land holding among the sons, the land management unit also decline in size and is fragmented. Quan (*ibid*) asserts that, this is true even in countries where such mode of acquisition is more likely to lose importance, namely countries where land titling programmes have been more or less systematically implemented (Kenya, Rwanda, Burundi, Uganda, Malawi, Zambia, and Zimbabwe). Moreover, in these countries exists various kinds of gifts (in form of land) on the one hand and purchases through the market on the other hand (André and Platteau 1998).

Cotula et al. (2004) observed that, throughout Sub-Saharan Africa, land is fundamental issue for economic development, food security and poverty reduction. However, in many areas, land is increasingly becoming scarce due to a variety of pressures, including demographic growth. This had an impact on the effectiveness of land as the main asset for the livelihood of many African peoples. Shipton (1989) views that as population densities rise in Africa, land

boundaries increase and the land rights of groups and individuals are clarified. Therefore, population pressure often contributes to the division of open community land rights or individualisation.

Migot-Adholla and colleagues (1991) also explain the process in which population pressure may lead to the individualisation of land right, which subsequently lead to land fragmentation. In their view, when population pressure increases, the period of fallow shortens and shifting cultivation is replaced by systems of rotation and soil improvement. These may also be precipitated by the introduction of commercial crops production, which tends to enhance rights of exclusion of individuals even though the basic control over outsiders' access to the land continues to be exercised by the community. Moreover, Cotula (2007) pointed out that while extended family groups continue to play an important role as land management units in many parts of rural Africa, demographic changes, urbanisation, commercialisation of land relations, integration in the global economy, cultural changes and other factors tend to push towards land management decisions being taken more at individual level.

In addition, the colonialists' views were that the communal tenure in African countries entails an absence of individual land rights and a domination of group rights, so that the individual land user faces insecurity of tenure which, in turn, constitutes a disincentive to the investments needed for increasing productivity and efficiency on which agricultural development and general social progress must be based (Peters 2007). African states also took on a key role in adjusting land relations either directly, through land nationalisation, or through registration programmes aimed at creating private ownership rights (Cotula 2007). From the late 1960s to the early 1980s, land policies were promoted in Africa on the basis

that customary tenure did not provide the necessary security to ensure agricultural investment and productive use of land (Bassett 1993).

The communal character attributed by colonial administration to customary land tenure was seen as an obstacle to development. Within communal land tenure system, when there is growing competition for the use of land as a result of population growth and increased commercialisation of agriculture, communal ownership becomes unstable and produces detrimental consequences, in the form of mismanagement and overexploitation of the available land. Efforts at cultivating and conserving it are discouraged and potential social benefits are lost (Chimhowu and Woodhouse 2006, Platteau 1995).

The above challenges embedded in customary law (where especially land has been continuously acquired through inheritance), and the population growth which apparently aggravated the issue of land fragmentation led to the necessity of land reforms. Furthermore, the land reform which gives free hold tenure over land would promote long-term investment through the position of collateral security for credit (de Soto 1993).

2.2. Land Reform

For many developing countries in Africa, land is the main asset for insuring household food security and generating income. Hence having access to land is a crucial factor for survival. Land constitutes the main and fundamental dimension of economy and livelihood basis (Cotula 2007). Land access can be defined as the processes by which people, individually or collectively, gain rights and opportunities to occupy and use land primarily for productive purposes (Cotula et al. 2006). In countries where agriculture is main economic activity,

access to land is a fundamental means whereby the poor can ensure household food supplies and generate income. Thus, in order to meet the requirements, the maintenance of productive capacity of the land has to be improved and made sustainable (Sharma and Soni 2006). This implies that land management mechanisms must enable sufficient agricultural productivity (individually and collectively), and sustain the economy of the society wherein it is a pivotal aspect.

Due to the land fragmentation reality pointed out in section 2.1 (p. 7), sustainable land management necessitates imperatively land reform programmes that would counteract potential fragmentation systems. Therefore land consolidation (LC), a land reform procedure that allows consolidating fragmented parcels in order to improve food productivity, is indispensable. A LCP may comprise the exchange of spatially dispersed fragments of farmland to form new holdings (larger and better shaped) at one place, or at few places as possible (Oldenburg 1990). Within the LC, relative value and the ownership of the real plots are usually kept constant (Vitikainen 2004).

Land reform is defined as a process where a country modifies the existing arrangements in which the land is governed. It is generally a legislation to directly redistribute rights to current farmland, and thus to benefit the poor by raising their absolute and relative status in terms of power or income compared with likely situations without the legislation (Lipton 2009, Adams 1995). Depending on different societal particularities and contexts, land reform can have various practical meanings. In Latin America and parts of Asia, land reform has tended to mean an organised redistribution of holdings or rights, while in Sub-Saharan Africa it has usually meant reform of systems of rights underlying holdings (Shipton 1989). Dai (1974) argues that land redistribution has practically become a universal of all land

programmes especially in the developing countries. Moreover, land redistribution may be more appropriately considered as a basic agrarian change to which all other reform measures bear a more or less dependent relationship. Land reform has been related to agricultural changes where people seek the alternative ways of exploiting land. Dai (*ibid*) points out that all people emphasising productivity as the primary objective of reform share the belief that meaningful improvement in the well-being of small-farmers can only be achieved in a growing and prosperous agricultural economy. In other words, the land tenure system of a society and its farming mechanisms are some of the key aspects in securing food productivity.

Land reform is a blanket term often used interchangeably with agrarian reform. The idea of agrarian reform emerges when a society, or a part of it, recognizes that some of its institutions are inadequate with regard to the reality of the existing agrarian measures and in relation to the immediate economic or political needs (Jha et al. 2007). Thus, agrarian reform (International Fact-Finding-Mission to Brazil report 2000) is one of the most effective measures for guaranteeing the right to feed oneself; it breaks up the cycle of exclusion for millions of peasants, whose access and control over production resources has been denied, while offering them the option of producing food for their own subsistence and for the market. This means that in terms of policy, governments will look beyond redistribution.

With agrarian reform, the government should seek to support other rural measures such as the improvement of farm credit, cooperatives for farm-input supply and marketing, and extension of services to facilitate the productive use of the land re-allocated (Musahara 2006, ICCARD 2006). Thus, in this study land reform is seen as a change of land use procedures with the purpose of good management and rational use of national land resources including the

consolidation of small plots for more economic and productive use of land as it is stated in the Rwandan National Land Policy of 2004 (MINITERE 2004).

2.2.1. Overview and International Perspectives on Land Consolidation

Different scholars have suggested multifaceted conceptual considerations of LC. Sklenicka (2006) describes LC as a standard device for ensuring rural development and increasing land use efficiency. Similarly, Lerman and Climpoies (2006) emphasise that LC should lessen the expenses of production and increase net income for a farm of given dimension. The opportunity for LC may come when fragmented land is no longer productive (Bullard 2007). The strategy of LC is needed to ensure that necessary resources and assistance is provided to farmers (Food and Agricultural Organisation, FAO 2003).

By consolidating small plots into large scale-farms, many opportunities such as obtaining credit facilities and acquiring new technologies in farming may be made available to the land owners and lead them to improve their situation (Crecente 2002). The LC allows farmers to get farms with fewer parcels that are larger and better shaped, and to expand the size of their holdings which enables them to become more competitive in their agricultural activities (FAO *ibid*).

The LC projects may include activities such as improvement of the road and drainage network, implementing the process of irrigation, supporting community based agro-processing, landscaping, environmental management and conservation projects, and facilitating access to markets and infrastructure support. Moreover, LC projects serve to improve land administration through the better quality of information on land rights and

facilitate the development of land markets and the management of land conflicts (Vitikainen 2004, FAO *ibid*). Therefore, LC can be seen as a precondition for land use efficacy that would contribute to sustainable food security.

2.3. Theoretical Framework

Hernando de Soto's theoretical view on property right provides a framework that enables the researcher to rationally assess the different aspects of the LCP in Rwanda and the state of food security.

De Soto (2004) views property right as something that is so essential for creating wealthy and alleviating poverty. He asserts that property enables trust, which in turn enables credit, which in turn enables capital, and capital is what ultimately enables exchange. In other words property is more than simply ownership.

In his book, *The Mystery of Capital*, de Soto (2000) argues that the poor have many assets; the problem is that they hold these resources in defective forms. Houses are built on land whose ownership rights are not adequately recorded many engage in unincorporated businesses with undefined liability. Besides the fact that the rights to these possessions are not adequately documented, these assets cannot readily be turned into capital, cannot be traded outside of narrow local circles where people know and trust each other, cannot be used as collateral for a loan, and cannot be used as a share against an investment. For de Soto (*ibid*), a property document is the conspicuous sign of vast hidden processes that connect all these assets to the rest of the economy. Thus, without representations, assets are dead capital.

According to de Soto (1993), when it comes to land, property rights are embodied in formalised titles and a piece of land without such title ownership at low cost is extremely hard to market. Any trade of this land will require enormous effort to determine the following: Does the seller own the land and have the right to transfer it? What are its boundaries? Will the new owner be accepted as such by those who enforce property rights? What are effective means to exclude other claimants?

De Soto (*ibid*) thus emphasises that when people formalise titles they are aware that property is under their own legal control and therefore they have the incentive to invest their intelligence and work in improving it. He postulates that formalised titles open the door to credit. This implies that, once the rules are made clear on ownership of property it is easy for people to optimize use of assets as they have security. Likewise, Otto (2009) argues that the poor should quickly move their land assets from an unproductive extra-legal sphere into the legal sphere where these assets could turn into capital. From the foregoing, it can be argued that formal property records and titles represent our shared concept of what is economically meaningful about any asset and they capture and organize all the relevant information required to conceptualize the potential value of an asset and so allow us to control it.

De Soto's theoretical approach offers an analytical tool for addressing the role that land consolidation plays in increasing food production at the household level in Bugesera District in Rwanda. However, the formalisation theory of informal property rights as a capital generator may not claim to be the only one adequate theory to explain how to alleviate poverty in rural poor population of the undeveloped countries.

Musembi (2007), for instance, questions formal property towards the Kenyan example. According to the Kenyan Land Act, except as otherwise provided in Kenya's Registered Land Act, no other written law and no practice or procedure relating to land shall apply to land registered under that Act. Musembi's argument is that although the official idea of ownership attached on formal title does exist in some form, it is not the defining feature of property relations. It coexists, and is constantly in tension, with broader and dynamic social processes and institutions that shape property relations by constantly balancing between various competing claims and values, rights and obligations (Musembi 2007, Mathieu 1999). Thus, the content and shape of formal title varies with local context, and can be very different from what the officials and proponents of formalisation have in mind.

Beckman (2003) argues that, for de Soto, it is primarily the location in the informal, the extra-legal sphere which is the problem. De Soto seems to propose that it would be easy to legalise such rights without changing them. Hitherto, the experiences with land rights reforms show that, even with a well-functioning bureaucracy, the transformation of local property rights into actual private ownership changes the nature of the rights and leads to the exclusion of the weaker amongst them women.

De Soto's theory of accessing credit through property right has also been questioned. It is arguable that access to financial markets is very important for poor people (WB 2000). However, according to Gilbert (2002) these poor people are often discouraged and do not seek loans since they believe that they will be denied credit or they assume that they will not fulfil bank requirements. On the other side, he argues that the reluctance of the poor to request for loans may be primarily due to fear of what may happen if they are not able to pay back the loan. Thus, for every poor family, repaying a loan is a burden that may endanger the

household's entire financial viability. In Tanzania, the Shiviji Commission found that some villages believed that village titles would enable them to get loans, using the title as collateral. However, when they were made aware of the ultimate possibility of foreclosure in the case of failing to pay, simple amazement they displayed indicate that such a possibility had occurred to them (United Republic of Tanzania 1994).

Scholars like Chimhowu and Woodhouse (2006) have also contested de Soto's view by claiming that if land under customary tenure were to be considered extra-legal property, in the sense that individual land user's rights are recognised by customary authority but not in the statutory legal system, then it is not clear how in Africa formalising of property rights would generate capital in the manner de Soto foresees. Their argument is founded to the Shipton's (1992) work in rural areas of Kenya where it was found that under risky dry land farming conditions, land is rarely used to secure loans even if it is held under freehold. The farmers fear that credit can lead to debt which may result in loss of land. Hence, as Johnson and Rogaly (1997) argue, lending can harm as well as enable poor people. Financial relationships, especially those of debt, are one way in which the powerlessness of groups of poor people is rooted. Therefore, the poorest are likely to need to build up a degree of security before investment and growth becomes possible.

Thus to sum up, the LC projects are structured in such a way to promote high agricultural productivity as a priority. Hence it is of paramount importance for both public and private sector to install drastic measures to support farmers by providing them with seeds, significant inputs and new food production technology so that the underlying mandate of LC becomes more beneficial.

In Rwanda, the LCP, which is the focus of this study, was initiated by the post-1994 Rwandan government in order to effectively address the concern of food security, particularly with the aim of increasing agricultural productivity. However, before assessing the LCP in Rwanda, it may suffice to single out and briefly discuss three typical examples of African countries (Kenya, Tanzania and Ethiopia) wherein LC policies have been implemented, so as to comparatively situate our critical study of the LCP in Rwanda. As mentioned above, LC is a land reform that allows the exchange of dispersed parcels of farmland to form new holdings which are larger and better shaped at few places as possible. It can also facilitate the adoption of new farming techniques leading to a more prosperous and efficient agricultural (Oldenburg 1990, FAO 2003).

2.4. Land Reforms in Kenya, Tanzania, and Ethiopia

These three African countries are in the vicinity of Rwanda (East-Africa block and great lakes region in large), and their pre-colonial land management was almost similar to that of pre-colonial Rwandan kingdom (described above). Kenya, Tanzania and Ethiopia have earlier adopted land reform processes, as it will be discussed below. Thus, their distinctive experience in land reform, where LC has been implemented in order to improve land usage, may permit situate, comparatively, the present study (on LCP in Rwanda), by pointing out the possible challenges encountered in moving from one land management system to the other (from traditional system to a legislative land reform policy), the benefits of LC program. Thus, as such, these exemplary cases (of Kenya, Tanzania and Ethiopia), provide a contextualised reality of land reform experiences in East Africa that can shade light in assessing and understanding the Rwandan program of LC.

2.4.1. Land Consolidation in Kenya

Overview

Kenya is one of the African countries that have adopted the policy of land reform and LC (as early as 1954) in order to address the problem of land fragmentation (Barber 1970). Kenya is used as an example in this study to interrogate the possibility and chances of success of the LCP in the Rwandan situation. Its experiences and challenges are used to underscore the importance of sustainable policies that take into account local measures for their success.

As in all pre-colonial African countries, the land tenure system in Kenya was based on customary law. In his assessment of the Kenyan case, Coldham (1978) asserts that customary law was deduced to be a barrier to agricultural development. The allocation and inheritance of land (under customary law) was largely responsible for the considerable fragmentation of land holdings. The purpose of land consolidation was then to make sure that unproductive plots were replaced by large farms where agricultural productivity could be increased. Thus, in the early 1950s, the colonial administration in Kenya adopted a plan that came to be known as the Swaynnerton plan. The Swaynnerton plan implemented in 1954, aimed at entrusting African farmers with secure land ownership rights and access to export crop markets (Deininger and Binswanger 1995). One of the main objectives of the 1954 Swaynnerton plan was to transform customary land rights into individual freehold. He adds that the twin pillars of the programme were the institution of freehold land tenure and the selective loosening of restriction on African cultivation of high value crops such as coffee and tea (Kariuki 2004). This means that the main purpose of this plan was for cash crops rather than for crops for consumption by the general public.

In 1956 the land reform programme for the registration of individual titles to land held under customary law started. It was guided by three statutes which are the Land Consolidation, Land Adjudication and Land Group Representatives Act (Njenga 2004). The implications of these land reforms for individual households and for the changing land-use systems were of central importance to rural development in Kenya (Smucker 2002). Kenyan smallholders whose communities allowed the government to register their land as private property did so largely in the hope of obtaining farm loans on the security of their land titles (Shipton 1992).

What was the impact of land consolidation in Kenya?

During the year 1956, some areas in Kenya were already undergoing the early stages of an agricultural revolution, the like of which had not been seen in any other African country. For instance, with emphasis on cash crops, areas like Bungoma responded positively to the land consolidation. Furthermore, the popularity of Arabica coffee among Bungoma households during this phase of Kenya's colonial economy was reflective not only of their inclination to embrace agricultural innovations, but also of the extent to which the forces of commercialisation had penetrated their agrarian economy (Makana 2010).

The post-independence Kenya (1963 and beyond) maintained the LC projects. Throughout Kenya, consolidation and intensification of land-use was followed by state investment in infrastructure creating an emerging national political and economic core (Smucker 2002). In the 1960s, Kenya experienced the highest agricultural productivity increases in Africa (Migot-Adholla et al. 1991). Although land reform in Kenya has had notable benefits such as increased and market-oriented agricultural productivity, some cases of shortfalls have also been registered. Wilson (1971), in his study of Kisii district, found that there was no

significant relationship between increased security of tenure and added inducement to invest in the development of holdings. The reason for this may be that the smaller holdings were always relatively developed to serve immediate family needs, and also because even before registration, family heads did not feel very insecure, in spite of some land litigations. Likewise, although land titles were held by many farmers in Kenya (in the regions of Madzu, Lumakanda, Kianjogu, and Mweiga), there was no significant relationship between the possession of land title and use of credit (Migot-Adholla et al. 1991).

Green (1987) reports that although the purpose of LC in Kenya was to make sure that unproductive plots get replaced by large farms where agriculture productivity can be increased, the post-independence Kenya has been marked by imbalances in access to credit. He mentions that the post-independence Kenyan administrative rules favoured farmers with sufficient holdings, usually rich farmers, facilitating their access to credits**.** The social status of the applicant and his liquidity in monetary system was considered in order to receive credit (Okoth-Ogendo 1976). For instance, according to Shipton (1992), by December 1991, sixteen years since land registration in the Luo sub-location of Kanyamkago had been completed, only 77 (6 percent) of the 1,242 registered land parcels had ever been mortgaged for loans. The credit was available, and appropriately scaled, only to a small wealthy elite. This led to rich farmers having the privilege of owning more land while small holdings farmers were losing some of their land as it got confiscated because they were unable to fully exploit their farms (Green *ibid*).

Although many landholders have been able to mortgage their lands since registration, and obtained credit for agricultural development, Wilson (1971) points out that many of the loan recipients have been people with off farm employment since the banks based their lending on

capacity to repay rather than the security offered. Thus, the often inadequate supervision, especially of commercial bank credit, has meant ineffective utilisation of the credit facilities. Furthermore, the issue of gender and land right was neglected yet as Mbote et al. (2005) argue, customary law ensured that women do not really exercise the same land rights as men do. The issue of gender inequality in land rights in Kenya is more debated in section 2.4.3.1. (p. 52).

In addition, the political and business elites allocated themselves larger parcels of the land. In other words, the adoption of individual titles created also a new form of land fragmentation whereby a few rich individuals accumulated large chunks of land for commercial purposes and marginalised small scale farmers **(**Rutten 1997).

Thus, despite LC attempts, land fragmentation continued in Kenya. Shipton (1989) observes that the land reform did not end subdivision and fragmentation. Where holdings were consolidated under government authority, the holders continued to subdivide them in succession and inheritance. Customary law continued to determine the way in which the head of a household divides his land among his family, where a single piece of registered land would be subdivided on the ground between the registered proprietor and the members of his family (Coldham 1982).

For instance, Shipton (1992) elucidates that patrilineal system (tracing descent and kin group membership through the male line), virilocal residence (settling at the husband's natal home after marriage), and the subdivision of holdings devolving from one generation to the next remained norms in Luo area. People continued to acquire land through kinship and broader community ties. Rights of individuals were not thought inviolable, but they interlocked with

the rights of others, and overlapped with those of families and wider groups. Hence, it increased land fragmentation.

What lessons does the Kenya land reform offer?

Arguably, the main objective of land reform in Kenya was to improve the agricultural productivity. Based on these literature considerations, it appears that, though the introduction of land rights in Kenya had some significant benefits, there were some aspects of the land reform as a whole that needed attention for the sustainability of the latter. However, despite the aforementioned negative aspects in the land reform situation in Kenya, Coldham (1982) argues that the LCP has been generally successful, and judging from the existing scanty evidence, there is little likelihood that a process of re-fragmentation will occur on an alarming scale. As observed by Rutten (1997), statutory law is gradually replacing customary laws in Africa. The principal argument for tenure reform centres on the effects of uncertainty in discouraging investment on land that is held without long-term security. Thus, land tenure that improves such security may encourage investment and productivity will increase both from the demand side, as famers become more certain of gaining the benefits of investment in the future, and from the supply side, by affording farmers better access to credit. Moreover, according to the National Report on Kenya (2006), any land reform programme is expected to secure the land rights to own and use land by marginal groups especially women and indigenous communities.

2.4.2. Land Consolidation in Tanzania

Overview

Another selected example of LCP is Tanzania's case. McHenry (1976) points out that the collectivization drive actually began following the publication of President Nyerere's second "post-Arusha" paper, entitled "Socialism and Rural Development," in September, 1967. In 1969 both the government and Tanganyika African National Union (TANU) established organizations to promote the creation of *Ujamaa* villages. By the early 1970s several "operations" had been conducted to encourage people to enter the villages. Moreover, the decision by the TANU National Conference of November 1973 that the entire peasantry should live in *Ujamaa* village within three years, underlined the regime's long adherence to the view that agriculture was the main element in the development of the country (Kjekshus 1977).

Following the Arusha Declaration in 1967 and the *Ujamaa* policy, rural development was organised in two main ways: large scale farming and agriculture under parastatals and small-scale agriculture under villagisation (Tsikata 2001). The major purpose of *Ujamaa* policy was to encourage people to live in villages and do farming together and this policy was destined to affect large scale farming, to prevent the emergence of inequalities and relations of exploitation in the rural areas and to facilitate the adoption of cooperative forms of production marketing (Coldham 1995, Moore 1979).

What was the impact of land consolidation in Tanzania?

According to Tsikata (2003), both small and large-scale African producers benefited from these policy and legislative reforms in terms of access to land and inputs. Local producers did

expand their holdings and improve their productivity, and the continuities in policy affected food production positively. The *Ujamaa* villages, in order to develop their communal farms, were provided the fertilisers and mechanised equipment, all to be obtained through credit. The tractors generally allowed for the opening up of much larger areas of land than when villagers relied on their hoes alone (Hyden 1980).

The benefits of the *Ujamaa* villages cannot be underrated. Not only was the *Ujamaa* policy successfully in bringing people to live together in the villages but it also helped a great deal in giving poor peasants communal control over major means of production (De Vries 1978). However, none of these policy shifts has lead either to the transformation of production structures and relations in the rural areas or to the substantial increase in productivity of the rural areas (Lubawa 1985).

On the contrary, other scholars reported that the *Ujamaa* policy led to some shortfalls. Moore (1979) argues that the level of cooperative production in these villages was often minimal. For instance, in 1972 it was becoming clear that the formation of *Ujamaa* villages was proceeding too slowly, and that some areas were particularly antagonistic towards abandoning traditional rural systems. Hyden (1980) therefore argues that although villages using tractors to plough their land were able to achieve a higher output than those which did not, it was only a quarter of the official estimate. Similar views were held by Shao (1986) who believed that these cooperative and communal production were proving to be a failure since farmers were reluctant to participate.

In 1970s and early 1980s, maize, beans and coffee trading remained officially confined to state-controlled marketing institutions, except for food crop sales at the local market.

However, the hiccups emerged and there was a major drop in coffee procurement that led to some farmers abandoning coffee cultivation due to loses (Ponte 2001). Hyden (1980) emphasises that in order to modernise maize production, the government insisted on the use of better quality seeds and fertilisers which were provided on credit, but the peasants were reluctant to enter into such financial obligations. Subsequently, it resulted in low production according to the official estimates. The diminished production was evident when the cashewnut authority's purchases fell from 140,000 tons in 1973 to 44,000 tons in 1978/79, a decline partly associated with villagisation because peasants were moved far from their farms (Havnevik 1993). Moreover, Lubawa (1985) argues that the villagisation also affected food crop production adversely. This was due to the fact that more time was spent in moving and settling than farming.

Lorgen (1999) asserts that villagisation disturbed work in the fields when it was implemented, and the increased distances from their fields for many of villagised farmers undermined their production. According to De Vries (1978), *Ujamaa* enterprises were too small to allow scale economies. Most extension agents also had little or no training as well as experience in large-scale production. Consequently, they could only recommend techniques appropriate to small-scale production and were unable to advise village planning committees on the economics of large-scale projects. Moreover, the government assistance at the village level was concentrated in the more developed villages as these were by definition more viable. Thus, as opined by Raikes (1975), the *Ujamaa* policy did not led to any significant increases in productivity or surplus flow from agriculture. Among the impacts of *Ujamaa,* were the adverse effects on the environment and particularly on the land used for cultivating (Lorgen 1999).

On the other hand, Putterman (2002) argues that, collectivization is said to be inherently disadvantageous or unacceptable to small farmers, simply because it runs directly counter to the self-interests of peasants and to their 'human nature'. De Vries (1978) asserts that it is only when the farmers will exercise real control over the system that can serve their interests and thus aid in their self-liberation and development.

Also, women's land rights were neglected. Due to customary law, Tsikata (2003) articulates that, male children inherited larger portions of a deceased person's land because they were expected to shoulder the bulk of such responsibilities. Marital residence, which was patriarchal, did not favour women because their share of property often remained in the care of brothers to be accessed by them in case of divorce or widowhood. Yet women's inheritance rights continued to be increasingly disputed by their brothers (Tsikata 2001). Hence the cultural customs and the land problems in Tanzania have been generally marked by immensely marginalising women and subjecting them to poverty and food insecurity (Manji 1998).

What lessons does the Tanzania land reform offer?

Other countries in Africa which may be forced to embark upon resettlement programmes as a possible long-term solution to the prevailing famines should consider that the story does not end with the mere physical resettling of people. Careful planning is required to prevent environmental degradation (Kikula 1997). Moreover, specific solutions to deal with current and future land-use problems should take into consideration those practices with which most farmers are familiar before introducing new ones. It is also necessary to monitor development

projects designed to meet a specific need with a view to identifying side-effects that may aggravate the original problem (Mlay 1986).

2.4.3. Land Consolidation in Ethiopia

Overview

Ethiopia is also another country where a system of LC has been adopted. In Ethiopia, following the 1975 land reform proclamation, the socialist government (1974-1991) abolished the inequitable land ownership arrangements (Omiti et al. 1998). According to Ahmed et al. (2002), the March 1975 decree ended all forms of customary land tenure and landlordism. All rural lands were declared state property and redistributed to the tillers, primarily based on family size and quality of the land in order to create equity and fairness in land acquisition.

The same decree also banned all kind of land transactions and wage labour in rural areas to ensure that the tillers remained the beneficiaries of the land. Farmers could not sell, mortgage, lease out or transfer the land allocated to them. This means that farmers were only granted usufruct rights. Thus, measures of land redistribution, collectivisation, villagisation, and resettlement programmes were undertaken (*ibid*). Subsequently, agricultural socialisation was launched soon after land reform, with the emphasis on the peasant producer's co-operatives which were considered by the planners to be more cost-effective, and were seen as the main engine of rural transformation (Rahmato 1993).

The official aim of villagisation in Ethiopia was to introduce social and economic change through a socialist agrarian transformation which also included mechanisation and

cooperativisation (Pankhurst 1992). Within the villagisation, the government emphasised on capital-intensive commercial agriculture, and the producer cooperatives took advantage of government-subsidised fertilisers, improved seeds, and pesticides, purchasing them under favourable credit terms. Tractors and fuel were also subsidised (Brietzke 1976).

To implement both the land reform and cooperativisation programmes the farmers were to be organised into associations under the leadership of the poor and middle strata of the farmers (Rahman 1979). Thus, according to Kebbede (1987), once peasants were organised in service cooperatives, the next step was to undergo the formation of producer cooperatives, which involved three stages. In the *Malba* stage, members retained land up to the one fifth of a hectare for individual cultivation and transferred the remainder to communal holding. In the *Wolba* stage, all land, except for one-tenth of a hectare for private cultivation, became communal holding. In the *Woland* stage, private ownership was entirely abolished in favour of collective ownership. As an inducement to form cooperatives, the state gave considerable incentives to producer cooperatives. Farmers who did not wish to join co-operatives were frequently expelled and relocated in marginal areas (Stahl 2007). However, the farmers generally did not prefer communal farming. They wished to become masters of their fate as individual proprietors, and viewed the basic unit of production to be the small family farm (Rahman 1979).

What was the impact of land consolidation in Ethiopia?

According to Stahl (*ibid*), the purpose was often to raise a cash crop in order to give the farmers' associations money to invest in various small projects, but uncertainty prevailed regarding the development of collective farming. Most peasants concentrated their efforts to

their family farms; while collective farms remained with yields that were below the standard family farm. The impact of those incentive measures on the performance of the agricultural sector was not satisfying. Production of food grains was low and the grain prices in urban areas were high (Demeke et al. 2004).

On the other hand, during villagisation period, agriculture as the engine of growth for Ethiopia showed some enhancements. For instance, in Arsi region, there were some increases in agricultural production, though this was still below the potential rate because of the de-emphasis on agricultural extension, and the unsuitable use of extension agents to promote land reform. Shortages of high-cost fertilisers and seeds also served as disincentives to increased production (Cohen and Isaksson 1987).

Furthermore, in order to promote farmers associations, one of the development measure taken in by the government, according to Wood (1983), was the creation of the state purchasing agency, Agricultural Marketing Corporation (AMC), which was established in order to influence the supply and price of grain production. However, Rahmato (1993) says that the AMC ended up becoming an abomination to most peasants where it arbitrarily imposed grain production quotas on each household. In some areas farmers were asked to deliver produce which they had not grown, and in others the quotas allocated exceeded the farmers' harvest. For instance, in Wollo province in 1985/86, when most peasants were suffering from famine, many farmers had to sell the emergency supplies they had received and buy the grain produce on the open market to deliver to AMC (Rahmato *ibid*). Thus, the overall analysis indicates that there has been no significant development of agriculture in Ethiopia following the 1975 land reform (Belete et al. 1991).

In addition, the socialist revolution of 1975 happened in a situation where women's labour was being severely exploited through the sex-based division of labour that was based on male dominance and where every domain of their lives was controlled by the patriarchal society (Mariam 1994). During the socialist regime (1975-91) women's land rights were virtually non-existent. The then Ethiopia's constitution emphasised the role of men as the guardians of the means of production, basically land. There was no place or role practically left for women, which could only adversely affect their land and property rights (Mwagiru 1998). For the socialist agrarian system everyone was entitled to land as far as he/she works on it. However, this system strengthened patriarchal rule by redistributing resources since the land given to households was controlled and managed by their heads (males) (Mariam *ibid*).

What lessons does the Ethiopia land reform offer?

For Cohen et al. (1976), the Ethiopian approach of land reform appears to represent a great form of development, with the peasant association assuming the major responsibility for implementation, although the government may resist to allowing the associations to play a significant role in initiating and carrying out reforms. Negatu (2006) emphasises that, in a land reform process, there should be locality-specific and wider studies to investigate in details factors and conditions on the ground that constrain farmers from applying the improved technologies such as fertiliser and seeds.

To sum up, the three illustrated cases on land reform, namely Kenya, Tanzania, and Ethiopia indicate that the implementation of land reform programmes had notable benefits that include a certain increase in agricultural productivity. However, while the reviewed literature registers some shortfalls, the present scientific assessments could shade more the light on the

link between government policy implementation and its outcomes. Is Rwanda exceptional? What is the situation of land and agricultural productivity in Rwanda? These questions and others alike are looked at in the following section. Rwanda is the focus of this research, aiming at assessing the role of the Rwandan LCP in household food security, particularly in food productivity.

2.5. An Overview of the History of Land Fragmentation in Rwanda

Throughout her history, Rwanda has had land tenure systems that seemed to favour land fragmentation and land scarcity. Place and Hazell (1993), in their study on the relation between indigenous land rights systems and agricultural productivity in Ghana, Kenya and Rwanda, found that the majority of land parcels in Rwanda were acquired through non-market channels, such as inheritance (which is historically the most common system of land acquisition), gifts, government allocation, and appropriation or clearing of land.

2.5.1. Land Tenure in Pre-colonial Rwanda

During pre-colonial period Rwanda was unified under a king of a unique dynasty, the *Banyiginya*. Being the supreme patriarch of the parentage, chief of armies, the King was equally supreme chief of the civil administration (Gatwa 2005). The land tenure system in pre-colonial Rwanda was a customary law with the following features described by Kagame (1952):

a. *Ubukonde*: Through this land tenure system, land was held by the chief of the clan, who was the first land clearer. The chief could own vast tracts of land on which he would resettle several families, known as *Abagererwa*. Land access and occupation were also granted to

landed clients in exchange for rights and obligations (fees, duties) under the land clientship (*ubugererwa*) system (André 1998);

b. *Igikingi*: With this land tenure system, the right to grazing land was granted by the king or one of his chiefs known as *Umutware w'umukenke*, to any family that reared livestock. Until the advert of colonialists, *igikingi* was the most common land tenure system in Rwanda. The holders of *igikingi* had full control over the land and thus could partition it and allot plots to others in order to cultivate (Burnet 2003);

c. *Inkungu*: This was a land tenure right in which custom vested rights to local political authorities to own abandoned or escheated land. Here, local authority could grant the plots to the individuals who required them;

d. *Gukeba*: This was the process of settling families onto the grazing land or fallow land. *Gukeba*, or *Kugaba*, was an exercise within the province of the local authority;

e. *Umunani*: This was a father-to-son customary inheritance system, in which a father divided his land equally amongst his sons. The Rwandan customary law states that at the time of his marriage and before the death of his father, the heir receives a parcel of land and must leave her parents' house to build his own home (Bigagaza et al. 2002, Olson 1994, Bouderbala et al. 1996, Kagame *ibid*). This traditional inheritance system is still validly and legally practiced today in Rwandan society. It is incorporated into the existing land management system as a valid traditional constituency of the society.

The Rwandans viewed themselves as having a right to use the land, but there was no exclusive right to own it. The management of land and other resources was under three personalities: the administrative chief, the land chief and the pasturage chief. The land chief was responsible for collecting taxes and other duties, and the pasturage chief assigned to

collect duties on pastures as well as milk for the court (Schabas and Imbleau 1997, Vansina 1930). This kind of customary system of land tenure resulted in the problem of land fragmentation as it divided land into smaller units.

2.5.2. Land Tenure under Colonial Rwanda

During the colonial period, land rights became more individualized, property rights for the missions were introduced, and land sales and purchases increased (André 2002). According to Huggins (2009), under German authority, a decree of 1884 established a dual system, providing for compulsory registration of occupancy rights for non-Rwandans and the application of customary tenure for Rwandans. The land used for colonial enterprises, such as administrative offices and churches, were treated differently. Moreover, the Germany colonisation recognized private access and occupation obtained from the king by way of gift or purchase. During this period the king and his chiefs continued to make most decisions about land issues in the country.

Furthermore, Rwanda was divided into three parts: the German Rwanda, the Belgium Rwanda and the British Rwanda. It was during the First World War, specifically in 1916, when the German Rwanda (Rwandan Republic today), became in fact occupied by Belgium. It formed with the Kingdom of Burundi, Rwanda-Urundi territory, administered by the Belgium (Ndeshyo 1992).

Under colonial rule, some transformations occurred in the customary systems of land tenure due to shifts in political power (Burnet 2003). The Belgian administration sought to enhance the rights of individual land-users, by abolishing the former system and proposing exclusive

individual land titles (Musahara 2004, Jones 2000). This colonial land tenure system focused on establishing written law, without much interference to the existing cultural aspects (such as the inheritance system). Apparently this move by the Belgians made the political system of the central Kingdom more oppressive by breaking the delicate balance of land relations, on one hand, and by opening the way to the abusive land practices of the political authorities on the other. The latter abused their rights of land withdrawal and expulsion. Consequently, as reaction to these abuses and attempts at expulsion, the land clients demanded more secure rights to the land in order to protect and guarantee their rights to access and occupy the granted lands. Moreover, the Belgians pushed the authorities to take measures in order to assert the individual land rights (André 1998).

Under this Belgium colonial system, the appointed chiefs began granting *ubukonde* based on the lineage rather than who cleared and claimed the land independently. During this period, lineages then began to present gifts to political chiefs in the form of cattle and agricultural products, in order to be considered for land allocation (Burnet 2003). Moreover, Hoyweghen (1999) observes that the *ubukonde* land tenure system advanced towards a clientelistic system. The development of land market allowed people who might not have been able to do so under the customary rules to acquire land. Land acquired through the market was free from control by the lineage.

As the population of Rwanda increased, the pre-colonial and colonial land tenure systems led to fragmentation of the land, decreasing more and more the land for farming. Apart from territorial subdivision into governable units, the pre-colonial customs (chiefs donating lands to their subjects as a price or praise; inheritance system, etc.) contributed considerably to land fragmentation. To this, one can add the lack of advanced ways of maintaining the cultivable

lands. In effect, people kept moving from one place to another searching for cultivable land and this resulted in poor management of land. Around 1870 attempts by the Belgian authorities to standardise the monarchic system and apply it to those areas customarily administered by lineage leaders resulted in more rigid and exploitative relationships between landowners and land users (Huggins 2004).

In March 1927, a decree was issued (Decree of September 14/1886) in Rwanda-Burundi to establish a distinction between the land occupied by indigenous people under the authority of their leaders on the one hand and the vacant land belonging to the state or federal authority on the other (Revue Juridique du Rwanda 1985). The colonial authorities introduced the Napoleonian inspiration written law in Rwanda. This law was to resolve the problem of ownership of land and to determine the rules in terms of concessions and sales to non-aboriginal groups (Revue Juridique du Rwanda *ibid*, André 1994). The abolition of traditional structures for the purpose of exercising better management of land by individualising land rights caused a lot of disturbances to the majority of population (Huggins 2009). This land right tendency aggravated the issue of land fragmentation.

Also, between 1926 and 1933 Rwanda, under colonial rule, underwent administrative reorganisation. Among the objectives of this reorganisation, was to find land for young families. Traditional authorities recognized the right to dispose of the parts of the undeveloped land in order to give it to those who were landless. Therefore, the opportunity was disposed for a fatal blow against the communal land system and each member of the clan got his own parcel (Revue Juridique du Rwanda *ibid*). By 1930s, the entire communal land tenure system was parcelled (Adriaenssens 1967). In addition, in the north area of Rwanda, the *ubukonde* system was replaced by the *igikingi* system upon orders of the King Yuhi

Musinga (André 1998). As mentioned above, *ubukonde* system involved the chief holding the land as the first land clearer, and resettling some families on parts of the land whereas in the *igikingi* system the right to grazing land was granted by the King or one of his chiefs.

Due to the growing of population, the size of family holdings declined on average from 3 hectares per family in 1949 to two hectares in the 1960s (Bigagaza et al. 2002). According to Burnet (2003), between 1952 and 1954, King Mutara Rudahigwa abolished the *ubukonde* system of land tenure in the whole country and required all *ubukonde* owners to share their land with the clients exploiting it. Further to this, in 1960, an administrative decree suspended the *igikingi* land tenure system and vested decisions over pasturelands in the hands of the *sous chefferie* and later in the hands of communal authorities. Traditionally, land was not inherited before death, but over time sons became more and more competitive especially where little land would be distributed upon the death of the father (Hoyweghen 1999).

Following the 1959 Social Revolution, Musahara and Huggins (2004) point out that, land ownership continued to be distributed. Due to this social revolution, many Tutsi fled the country and their land was allocated to others. Moreover, according to André (1998), the edict of January 28th, 1961, adopted measures targeting the *ubukonde* system, proposing the restitution, division, rental or repurchase of the access and occupation of lineage lands by clearers. As result, these steps led to the parcelling-out of land held corporately into farmer's access to individually held agricultural plots.

2.5.3. Land Tenure in the Post-colonial Rwanda

Following independence (1962), Rwanda experienced a significant increase in its population. This phenomenon resulted in changing economic circumstances, such as rapid decline in farm sizes and available land per person (Olson 1990). In 1950s, the Rwandan household lived on a land which supported between 100 and 120 inhabitants per square kilometers, in 1970s that same family had to make living on the same land which supported between 280 and 290 people per square kilometers (Prioul 1976). This profoundly affected food production. The then new government of independent-Rwanda made several attempts to resettle people on the land previously reserved for pasture and cropping (Olson 1994). The government also tried to resettle large numbers of people under cash-crop-projects (the *paysannats* policy) with the hope that this would improve agricultural productivity (May 1995). In most instances, recipients were young men who did not have sufficient land of their own to establish households (Burnet 2003). However, the population of Rwanda kept growing rapidly, with an almost exponential increase in food demand.

With increasing land scarcity due to the population growth, a growing out-migration from high populated areas (in North) of the country to the East and central parts of Rwanda in 1970s occurred (Burnet 2003, Olson 1994). Furthermore, in 1976 attempts were made to mitigate the evident proliferating fragmentation of land by prohibiting the selling and buying of land of less than 2 hectares. But these governmental efforts were not entirely successful because people did not seem to mind such edicts. This implies that land transaction was allowed for someone who possessed more than two hectares and proved that he was able to ensure the subsistence of himself and his family. For the buyer he was expected to provide valuable reasons for wanting to acquire the land such as not being already in possession of a landholding exceeding 2 hectares. However, in practice Rwandans continued to buy and sell

their land without the required authorisation. Thus, the pressure on land due to the high population growth also resulted in the diminishing of soil fertility and the subsequent regression in food productivity (André 1994, André and Platteau 1998, Musahara 2004, Bizimana 2011, Ansoms 2008, Pottier 2006, Hakizimana 2007, Des Forges 2006).

Throughout the 1980s land transactions continued in many parts of Rwanda (ICARRD 2006). Migot-Adholla and colleagues (1991) observe Rwanda as the best example for testing the effect of commercialisation of land rights, where in most populated regions such as Ruhengeri (North Province), 97.5 percent of permanently held parcels are complete transfer lands. These patterns provide support for the argument that increased commercialisation hastens the individualisation of land rights. Population growth increases the value of land and Rwanda is among the African countries where land market has been strongly established due to the high population growth (Shipton 1989). This also aggravated the issue of land fragmentation and in 1994, 57 percent of rural households owned less than one hectare of land, and 25 percent owned less than half a hectare (Bigagaza et al. 2002).

The post-genocide Rwandan society experienced an overwhelming increase in population due to the mass return of refugees of 1959 and 1973. The high population growth as well as the 1994 influx of returnees posed a serious challenge to the capacity of Rwanda to provide a subsistence income for all its inhabitants (André 1998). This resulted in an immediate need for housing that was answered by the *Imidugudu* settlement policy (Leeuwen and Hilhorst 1999). In 1996, the then government institutionalised a policy of Villagisation known as *Imidugudu* and land distribution. This policy entailed the creation of villages where the returnees and the on-staying population without accommodation were provided with housing and a means of living (Pottier 2006, Rose 2002, Leeuwen and Hilhorst *ibid*).

The policy-makers also hoped that this redistribution exercise would lead to increased agricultural productivity, by grouping plots and encouraging the use of more intensive methods of cropping (Kondylis 2005). However, this policy was not envisioned to tackle the problems of rapid population growth, land scarcity and fragmentation. In 2001, almost 60 percent of household had less than 0.5 hectares. Worse still, by 2020 the population is projected to double to 16 million, which will reduce the already tiny plot sizes by half (Bruce 2007, Huggins 2004). Consequently, one can argue that population pressure has brought the country almost to the limit of its agricultural land resources. Thus, Clay (1996) asserts that population pressure and the concomitant land scarcity in Rwanda have contributed to several important changes in structure of landholdings. In return, the landholding changes have also affected the ways in which farmers manage their land, and consequently, land productivity.

The above cited literature (among others) indicates that land fragmentation and land scarcity in the history of Rwanda increasingly became a major social problem as the population grew exponentially under established customary and written laws. In addition, Clay (1996) describes how the structure of landholdings changed and became fragmented and more distant from the house. The resulting land scarcity obliged farmers to cultivate marginal land, less productive land previously used for pasture because of the need to increase food production. Moreover, households with too small land holdings would try to rent land from others and as a result are less inclined to make long term investments. It is worth noting also that 83 percent of Rwandans live on agricultural products; and every new generation continually relied on the land for its livelihood (Musahara 2004, Clay and Lewis 1990).

The land situation in the modern Rwanda can be compared to Malthus's worst-case scenario. The Malthus's population theory suggests that there is a basic difference between population

growth (exponential) and food production (arithmetic), and consequently, the human population growth will outrun the growth of food production. This would lead to famine, or disease (Diamond 2005). Thus, in the case of Rwanda, a sustainable solution is a *sine qua non* necessity in order to ensure reliable food production.

2.6. Land Reform: Rwanda National Land Policy (2004)

2.6.1. Overview and Critiques

After 1994, the government of Rwanda started to look for ways to overcome problems of land scarcity. The government started the debates in 1999 and the result has been that a land policy was confirmed by mid-2004 and a land law in July 2005 (ICARRD 2006).

The overall objective of the 2004 National Land Policy (NLP) states:

> *To establish a land tenure system that guarantees tenure security for all Rwandans and gives guidance to the necessary land reforms with a view to good management and rational use of national land resources* (MINITERE 2004:22).

One of the specific objectives of the 2004 NLP is:

> *To put in place mechanisms which guarantee land tenure security to land users for the promotion of investments in land* (MINITERE *ibid*).

This means that the land tenure system will afford secure ownership of the land. The land policy aims to replace customary law with written law which is touted as cognisant of individual rights. It is assumed that people will be able to invest or obtain credit since they have proof of land ownership. Moreover, it will empower people involved in the LCP to become aware of the limitations of plots ownership. However, there are some doubts whether this land tenure system will enhance the livelihood of Rwandans. The land title does not

necessary increase the value of the land in terms of size or productivity, noting that 70 percent of landowners possess less than one hectare (Musahara 2006).

In the interest of developing agriculture and solving the problems of land fragmentation and land scarcity, which are key issues in this study, the 2004 NLP states that:

> *Grouped settlement is the only and unique method that will allow good planning of land and rational land management in the context of land scarcity in Rwanda* (MINITERE 2004:42).

With this objective people have had to leave their dispersed settlements and move into group settlements (villagisation). It is worth noting that the system of group settlement legislated in the 2004 NLP had already been implemented in 1996. The NLP states that group settlement is a solution to the problem of high population density, poor land management and rural poverty (MINITERE 2004).

Due to the assumption that fragmented land use has a negative impact to the agricultural productivity, the 2004 NLP states that:

> *[…] the Rwandan family farm unit is no longer viable […]. […] The re-organisation of the available space and technological innovations are necessary in order to ensure food security for a steadily and rapidly increasing population* (MINITERE 2004:16)

Therefore, in order to achieve these objectives, LCP was implemented. The Land Law N° 08/2005 defines LCP as:

> *A procedure of putting together small plots of land, in order to manage the land and use it in an efficient uniform manner, so that the land may give more productivity* (Gazette of the Republic of Rwanda 2005).

Article 20 of the Land Law N° 08/2005 discourages small plots and land fragmentation. It states that:

> *In respect of public interest and in a bid to improve rural productivity, the Minister having agriculture in his or her attributions […] may approve the consolidation of small plots of land in order to improve land management and productivity. Each landholder shall be entitled to the rights over his or her parcel of land* (*ibid*).

The latter article also states that:

> *It is prohibited to reduce the parcel of land reserved for agriculture of one or less than a hectare. Similarly, the land between one hectare and five hectares may be reduced if the land commission of the level of jurisdiction where the land is found authorises the owner of land* (*ibid*).

This land law initially aimed at consolidating the small plots which are less than one hectare. Practically, farmers work as cooperative where each member continues to hold the right to his part of the land (which can be transferred), and boundary lines continue to exist (Veldman and Lankhorst 2011).

Apparently, in the context of private land use, the NLP favours those who are interested in land development. It states that:

> *[…] the process of consolidation will be fostered and the regulation of buying back land among inheritors will be established so as to render the consolidation of plots effective* (MINITERE 2004:29).

The implication of this NLP is that, landowners who will be unable to invest in their land will be forced to sell it to those who seem to be able to use it effectively. It is evident that the larger farmers have the highest chance of profiting from both land and agricultural policy. In most cases, these farmers possess the means to increase their landholdings and invest in new production techniques (Ansoms 2008). However, it is not clear how the effectiveness that will allow people to maintain ownership will be measured and how some people will survive without land as their main source of income. Such kinds of complications are of serious concern in this study. Musahara (2004) argues that many households unable to compete in local or regional markets will find a move in the direction of non-farm livelihoods challenging, and markets for non-agricultural goods and services are bound to become flooded if landlessness increases. Evidently, land reform is a sensitive issue with major consequences.

Similarly, the objective of improving rural productivity through LC has been criticised by Havugimana (2009) who questions household farmers' rights to their land since they cannot decide themselves what to produce on their land. Ansoms (2008) argues that the poor farmers may become trapped in subsistence farming as they would unable to surmount barriers towards market-oriented farming. His argument is that, when larger farms receive the main benefits from agricultural growth and are transformed into highly productive units, they will tend to drive less commercial and market-oriented farmers out of the market. Moreover, according to Havugimana (2009), given the smallholder tenancy, the high density and number of the rural population, the conventional methods of modernisation, specialisation and large-scale production do not seem to be viable options. Due to the slopes and other reasons such as the small fields, it may be very difficult to introduce mechanised agriculture in the villages. Moreover, poor farmers fear that if they are not allowed to grow varied food

crops, they will not be able to feed their families as they regularly do and their harvests of specified crops may fail because of weather of pests (Koster 2009).

Nevertheless, in a trial field study, the Ministry of Natural Resources (MINIRENA 2009) found that land title will facilitate farmers to consolidate their land. The farmers interviewed in this study were convinced that the issuing of land title would allow them to use the property as collateral, and therefore they would be able to secure loans, to purchase additional land, consolidate land holdings, plant additional crops, increase the production of cash crops, and make improvements on their property.

2.6.2. The Impacts of the 2004 NLP

In the 2008 field trial survey on the outcomes expected from the current land reform, MINIRENA (*ibid*) found potential impacts of registration and land titling on land market. Proof of ownership and greater security of tenure were the main reasons that led landowners (three-quarters of the respondents) to feel that land values would increase. Renting in land was at around 17 percent and those landowners involved in rental market showed that land market would reduce the sale of land under distress conditions. Only 14 percent indicated that they would be more willing to sell property in the case of land title.

In addition, Kairaba and Simons (2011), in their research on the impact of land reform in Rwaza and Kinyinya sectors, reported a local leader who confirmed that since land registration programme started they have increased performance by 88 percent, because they do not spend any more time on resolving land related disputes which used to take over 80 percent of their time.

However, in his study of the Ngera and Nyagahuru sectors of Southern Province in Rwanda, Havugimana (2009) found that the agricultural sector had not changed much since people joined settlements. Since villagisation policy implementation (in 1996), a number of people claimed that their lands' fertility decreased because they did not apply home manure. Also, due to the distance between villages and fields, they could not transport manure on their heads which is the usual way of transporting the loads. Moreover, no new techniques had been introduced in villages to minimise such losses or to boost the diminishing levels of production. The farming tools and other agricultural implements used for production were particularly hand hoes, machetes and axes.

Although the goals for the group settlement policy were ambitious and positive, Olson and Berry (2003) pointed out that the consequences that were being experienced included a sense of land tenure insecurity and a new group of near-landlessness. They also feared theft of their production from fields that they could not monitor. Also, the policy has been criticised by Pottier (2006) who says that many people who moved into group settlements complained that they could no longer produce the quantity of food they used to. One could also argue that these effects may reduce the willingness of household farmers to exploit their farms in order to increase their agricultural productivity as expected.

The International Centre for soil fertility and Agricultural Development (IFDC 2010) reports that on the ground, the areas under LC had been increasing from 28.000 hectares in season 2008 A to 254.448 hectares in season 2010 A. It is important to note that, in LCP, the specialisation of crops and mono-cropping systems were the main strategies to be used for enhancing agricultural productivity.

The first experiments of LCP show that the programme was forcefully implemented. In 2006, officials urged peasants in Eastern Province to plant their crops in rows and cultivate one crop at a time. In the autumn of 2006, local administrators in certain districts pulled out crops when they found peasants had not followed the guidelines (Reyntjens 2007). Twizeyimana (2009) cites a peasant in the Eastern province in May 2009, who experienced local malnutrition as a result of a combination of draught and the obligation imposed upon them to only produce maize. The peasant mentioned that if they had cultivated more than one crop they could have saved a certain amount of their harvests.

In her study, Ansoms (2008) found that although the government incorporates civil society organisations in the implementation of its agricultural and land policies, the participation lies in simply using civil society organisations in a public awareness campaign of something that has already been decided. Apparently, for policy makers, the role of the civil society organisations is to inform the population while ignoring the capacity of these organisations to give a voice to the population's reaction upon national policies. In a study conducted by Ansoms (2010), where farmers have some experience of LC in the swamplands which are the government properties, she realised that farmers were reluctant to consolidate their own plots. In Rwanda, land ownership is perceived as an individual and fundamental right. Majority of the landowners have their own ways of doing things and value their individuality in making agricultural decisions. Ansoms cited a peasant who said that, none can touch upon other's land, if one does it he can be cut into pieces. This displays the resistance that farmers expressed against the LCP.

Also, Huggins (2009) found that in some areas farmers are obliged to join cooperatives through which decisions are made regarding all aspects of farming. Farmers are forced to buy

specific kinds of seeds and fertiliser from the local authorities. These agricultural inputs are supplied on credit that is paid at harvest time. The questionable point as far as farmers are concerned, is that when the choice of crop, types of seeds, amount of fertiliser, time of planting, harvest, and sale are all controlled by the local authorities, they have effectively lost a certain control over how they use their land.

In addition, Ansoms (2010) investigated the opinions of farmers on monocropping and regional crop specialisation. She found that the overall farmers prefer multicropping for various reasons. Some mentioned that multicropping diminishes risks of crop disease or a particular climatic condition ruining the whole harvest, some said that it is a flexible system in the absence of manure and others thought that higher production may be achieved when combining complementary crop types. In contrast, some farmers had good experience with monocropping but they added that this occurs only under favourable conditions like availability of large cultivatable land, improved seeds and fertiliser, and appropriate trainings. Thus, due to the accessibility of fertiliser, improved seeds and extension services for the whole country the yields for maize and wheat increased significantly respectively by 227.6 percent and 172.95 percent from 2007 to 2009 (IFDC 2010).

Moreover, the New Times (2010) reported that LC was now boosting food production in Gatsibo district and cited a farmer who revealed that he produced four tonnes of maize on consolidated land up from 500 kilograms that he used to harvest previously. Moreover, in December (2011) the New Times also reported that LC had facilitated increased yields, especially maize in Gicumbi district. The district's agronomist pointed out that maize was planted on over 4.000 hectares of land compared to 3.000 hectares in the previous season. However, the district officials expressed concern over persistent delays in distributing

fertilisers to the farmers, an issue the agronomists mentioned as noticeably affecting agricultural productivity.

Furthermore, Huggins (2009) found that farmers face the problem of lack of the market for their harvests. For instance, in Kirehe district with the entire maize fields. Local markets for the products were very limited. Most rural households are too poor to be able to transport their products outside of the district for sale in other areas. Moreover, local officials promised tarpaulin sheets to help farmers in order to dry and sell good maize products, but the sheets did not arrive. In consolidated land use areas, insufficient storage facilities, coupled with the lack of appropriate equipment such as drying tables, pallets, humidity meters, as well as outdated hulling and milling machines are among the causes of the high post-harvest losses encountered by the famers (IFDC 2010). Therefore, one can argue that the marketing of household production may turn out to be more favourable for the farmers who are apt to deal with the conditions of market than the poor who apparently do not have bargaining power in the markets.

2.6.3. Gender Inequality in Land Rights

As in other African states, women in Rwanda face numerous cultural, customary, economic, legal and social constraints in their access to land and ownership of property in general (Burnet 2003). In the context of gender equality, the 2004 NLP (2004) states that:

> *Modes of land access, acquisition and ownership should be known to all Rwandans, men and women, since they are the principal beneficiaries* (MINITERE 2004:28).

It is worth noting that the problem of property ownership had also been addressed by a new inheritance law published in the official Gazette N° 22 of 15th November 1999. The Article 50 of the same legislation stipulates that:

> *All legitimate children of the de cujus, in accordance with laws, inherit in equal parts without any discrimination, between male and female children.*

According to the customary land tenure systems in Rwanda, only men had the right of access to land (Bigagaza et al. 2002). Usually, a woman did not inherit land from her father. A married woman received land from her husband to provide for the needs of her husband, their children, and herself (Rose 2004). A woman could inherit land only when she had neither male children nor living male relatives of her deceased husband (Bigagaza et al. *ibid*). These examples demonstrate how a woman had no right to land either from her native family or from her husband. This could be a possible factor in household food insecurity especially for the households headed by the widows.

In a fieldwork done in 2006 by Daley et al. (2010), they found that the new land law of inheritance and land policy started to positively affect social relations and land inheritance patterns in practice. A majority of young women in Rwanda reported that they had received a parcel of land from their family (*umunani*) at the time of succession. Moreover some women mentioned that before the land law establishment, they were mindful of consequences of disagreeing with their husbands, but such fears were diminishing as they were now allowed to inherit their own land. According to the results of a study conducted by Uwayezu and Mugiraneza (2011), subsequent to the new land policy, local leaders helped widows in receiving back land that they were evicted from by their in-laws. Female orphans whose lands had been grabbed witnessed that the current land laws and policy had helped them to

claim their rights. 94 percent of them reported having received back land that had been grabbed by their uncles and brothers, while 6 percent stated that their rights were recognised by the mediation committee and low courts.

However, in a research done by Brown and Uvuza (2006), some Rwandan women are convinced that through the new land law they will have the same rights over their land while others assert that a woman within a household has a right to the land but not really any control over the land. This means that most times within a household the man is the key decision maker. Moreover, by comparing the equality of land rights between the male-headed households and female-headed households, Isaksson (2011) found that the female household tended to have smaller landholdings, which to a greater extent have been inherited or received as a gift rather than purchased, leased or sharecropped. But female-headed households were to a lesser extent reported to have the right to sell and mortgage land. Thus, women seemed to exist only as the wives of household heads; their actions are considered secondary or unimportant to the changes that landholdings systems undergo (Yngstrom 2010).

For instance, evidence across Africa suggests that men rather than women exert control over commercial crops (Huggins 2009). Similarly, traditionally in Rwanda, cash crops such as banana (used for making beer as well as eating) and coffee are usually managed by men, while food crops are grown by women (Hahn 1992). Benschop (2004) reports that even where statutory national laws recognise women's right to land, housing and property, traditional values prevail amongst judges, police officers, local councillors and land officials. They often interpret statutory laws according to what is presently sanctioned by custom, depriving women of their rights (*ibid*). Hitherto, it cannot be denied that cultural patterns in

Rwanda still play a significant role in land ownership or distribution and thus cannot be overlooked.

Moreover, Verma (2007) argues that there are laws that safeguard women's land rights but the question still lingers as to how effective those laws are in practice. Thus this section problematizes gender as an influential factor in LC and household food security in Rwanda. Gender inequality may lead to excluding women in the decision making process with regards to the management of cash and food crops.

2.6.3.1. Women's Land Rights Situation in Kenya

The women's land rights scenario in Kenya is similar to that in Rwanda wherein women do not really exercise the same land rights as men do. In terms of constitutional rights, Kenya's constitution recognizes customary laws, but at the end of the day, the state law is the ultimate authority and is dominant over other legal codes (Verma 2007).

Under customary law there is a general principle that the husband is to manage the wife's property except for movables such as personal effects (Mbote et al. 2005). In addition, Gray and Kevane (1999) point out that, after the death of the husband the male children would eventually inherit land and continue to let their mothers cultivate land. However, with the increases in land sales, the sons would sell the land without their mother's permission and this would in turn affect household food productivity. Widows without male children were especially vulnerable as the land would customarily go to her husband's relatives and she would be rendered landless. This implies (like in the Rwandan case) that a woman did not have any property rights (land included).

Furthermore, the implementation of written law did not change the situation of women, i.e. under Registered Land Act, women were disfavoured by being excluded from acquiring titles to land since they only had rights of use while men retained those of allocation (Mbote et al. *ibid*). Thus Shipton (1988) argues that registration has allowed men to obtain absolute legal ownership of land rights and exclusion of women. As women did not have rights to land, the majority of farmers who got credit from after land registration have been men. However, women were supposed to share the risks of dispossession in the event of men defaulting on their loans (Shipton 1992). The implementation of the land registration programme however was carried out in a period in which gender was not high in the development agenda (Cotula 2007). Thus, the most detrimental consequence is the barrier to women's economic empowerment, with a decline into extreme poverty (Harrington and Chopra 2010). Land policies that are gender-blind are likely to undermine women's rights (Borras and Franco 2008).

To sum up, it is not clear as to whether large scale farming system was more profitable to the farmers than the smallholdings system. Lerman and Climpoies (2006) report that, the prevailing wisdom spells out that the consolidation of small fragmented parcels into contiguous holdings is preferred by farmers. On the contrary, some authors found that fragmentation was favourable for Rwanda due to its farming characteristics. Rwandan farming system is characterised by fragmented land and intercropping. Some fields, almost always including the banana grove, surround the house. Others are scattered and pieced out following divisions where each heir possesses each type of field on the land inherited from the father or on bought or given land (De Lame 2005). Moreover, Ansoms et al. (2010) argue that, in an environment where peasants are often driven into distress sales of land, the worse land plots are assumed to get sold first. Therefore, a greater level of fragmentation is likely to

be correlated with lower soil quality and with lower productivity rates. Thus, as Blarel et al. (1992) have stated, fragmentation is not as inefficient as broadly assumed as it gives farmers the means for managing hazards, seasonal labour shortages and food insecurity when other alternatives might be costly.

Although the land reform policy is not fully implemented, the existing literature on LCP in Rwanda fails to offer a consistent and scientific presentation of the impact of LC in Rwanda on food productivity. Apart from government reports that indicate the positive side of the policy, there is little evidence from the land policy researches conducted to offer a critical evaluation of the outcomes of the LCP in Rwanda. Rigorous scientific studies are thus needed to critically examine the relationship between the implementation of LCP and the outcomes in terms of food security. Hence, the current work seeks to fill this gap in literature by assessing thoroughly the role of LCP in household food security, with a focus on agricultural productivity. This will hopefully shed light on the relationship between government policies and social realities such as food security.

2.7. Household Food Security

2.7.1. Definitions and Concepts of Food Security

The concept of food security gained coherent definition in the 1996 World Food Summit in Rome which articulates that food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Continuous access to a diverse diet should be the definition of food security (Herforth 2010). Moreover, to improve food

security, a country needs to enhance its total food production by increasing the area under production and by raising the productivity levels of existing lands (Kathiresan 2010).

Food security is founded on three pillars which are: food availability, food accessibility, and food utilisation (Gross et al. 2000, World Health Organisation 2011, Tweeten 2009, Heath and Zahadi 2011). Firstly, Food availability means sufficient quantities of food available on a consistent basis. In this regard, there is a bread basket of food available for a population consume, but this concept says nothing about how it is distributed (Scanlan 2001). Food availability is not enough, on its own, to ensure food security. Poor people often have no access to food because their access to the necessary resources to buy food is limited. People often go hungry, even if enough food is available nationally (Valens et al. 2011). Secondly, food access implies having sufficient resources to obtain appropriate foods, through production, purchase or donation, for a nutritious diet. Many people are not food secured due to economic discrepancies and lack of agricultural development. This means that food can be available but not accessible to everyone. Problems with food access are the most common underlying factors in food insecurity in wealthier nations, as well as in many parts of developing world. Thirdly, food use means appropriate use of food based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

Food stability is also a dimension of food security. According to FAO (2006), to be food secure, a population, household or individual must have access to suitable food at all times. They should not risk losing access to food as a consequence of sudden shocks (i.e. an economic or climatic crisis) or cyclical events (i.e. seasonal food insecurity). The household ability to have food needed for consumption remains at the centre of food security. There have been on-going debates on how humanity avoids scarcity of food by instituting policies

that enhance high productivity in the developing world by use of modern food technology which has at some point compromised food quality.

2.7.2. Food Security in Rwanda

Although the scope of this work will be mostly limited to household food productivity, it is worth situating the latter into its bigger reality of household food security, referring to the situation in Rwanda. Rwanda still remains a low income country with an estimated GDP per capita of US$ 530 (World Bank report 2011). Although Rwanda's head-count poverty rate has decreased from 60.2 to 56.9 percent from 2001 to 2006, there are 600,000 more Rwandans living in poverty than there were five years before 2007 (UNDP 2007). This leads to the assumption that poverty goes hand in hand with the crisis of food security.

Rwanda, like many countries in sub-Saharan Africa, is challenged by the problem of food insecurity and poverty particularly in rural areas (Valens et al. 2011). The 2006 Comprehensive Food Security and Vulnerability Assessment (CFSVA, NISR 2006) reports that, 28 percent of the population was found insecure in 2006, with 24 percent classed as highly vulnerable to food insecurity. Only 22 percent of the population was considered to be food secure. Large differences between different regions exist (Bugesera, Crete of Nile, lake Shore and Eastern Curve are the food economy areas most affected by food insecurity. The 2009 CFSVANS (NISR 2009) provided information on food consumption scores which are also indicators of food security. According to this 2009 survey, nationally, 4 percent of households were found to have a poor food consumption score (FCS), 17 percent have a borderline FCS, and 78 percent have an acceptance FCS. Considering the proportion of

households with poor FCS from different areas, Bugesera district is where the proportion of households with a poor FCS remained constant.

Food access also seems to be a problem in Rwanda. According to the 2006 CFSVA (NISR 2006), 38 percent of households have 'very weak access'[3] to food, 34 percent of households have 'weak access'[4], 23 percent have 'medium access'[5], and only five percent have 'good access'[6] to food. Food accessibility is particularly problematic in the Eastern Curve, Bugesera district, Southern plateau and lake shore areas, where over 45 percent of the households were found to have weak access capabilities. In 2005 alone, more than 110.000 people, in this province, experienced serious food shortages (UNDP 2007). Historically, the Eastern savannah areas (Bugesera, Kibungo and Umutara) have known numerous famines. Currently these areas remain particularly vulnerable to food insecurity (Burnet 2003).

Rwanda's agricultural sector has long been the backbone of its economy, with 83 percent of the population still living directly off the land (Buruchara et al. 2002). However, the lack of big cultivable land due to land fragmentation in Rwanda is among the main reasons for limited capacity of household farmers to produce sufficient food, and consequently among the main causes of food insecurity (Mpyisi et al. 2004).

[3] Definition of 'very weak access': Households which perform poorly in at least two of the following items: 1) Total per capita expenditure; 2) per capita food expenditure as percentage of total expenditure; and 3) months of harvest availability. On average, monthly per capita food expenditure is 78 per cent of overall expenditure (1,600 RWF of RWF 2,000). Harvests last for an average of three months per year (NISR 2006).

[4] Definition of 'weak access': On average, total monthly per capita expenditure remains low (RWF 3,100), with food accounting for 56 per cent (RWF 1,700) of it. Harvests throughout the year last longer (six months).

[5] Definition of 'medium access': Total monthly per capita expenditure is above RWF 5,000, with little expenditure on food (33 per cent) and with about seven months of harvest availability throughout the year.

[6] Definition of 'good access': Households with high per capita expenditure (RWF 18,000, availability of cash), and long availability of harvest (up to ten months). When harvests do not last, households possess adequate financial resources. Per capita food expenditure represents 19 per cent of the total per capita expenditure.

The 2009 CFSVANS (NISR 2009) shows that, nationally 19 percent had less than 0.1 hectares, 37 percent less than 0.2 hectares, and 59 percent less than 0.5 hectares. Only 4 percent of the households had access to 1 hectare or more. The proportion of households accessing less than 0.1 hectares was the highest in Bugesera (37 percent), Huye (32 percent), Nyabihu (32 percent), and Musanze-Burera (29 percent). Thus, the CFSVA (NISR 2006) showed that there is an important link between plot size and food insecurity. Farmers with less than 0.1 hectares 41 percent were food insecure compared with 21 percent of those cultivating 0.5 hectares or more. As these are averages, it means that many farmers have less than 0.7 hectares, the generally accepted minimum size needed to feed the average household (Verwimp 2002), and 0.9 hectares which is the FAO's recommended size of an economically viable cultivation plot in Rwanda (Bruce 2009). One can argue that it is important for poverty reduction that people have enough access to land to be able to derive food from it.

The limited land availability and population pressure have resulted in both small plot sizes and cultivation of marginal land (hillsides), with subsequent erosion and loss of fertility or drought (NISR 2006). The 2009 study (NISR 2009) reveals that droughts, irregular rains and dry spells are the most commonly reported shocks experienced by farmers during the year before this study. This was mostly reported in the Eastern Province (especially in Bugesera district, 87 percent), in the Southern Province (Nyanza, 71.4 percent, Gisagara 60.4 percent, and Huye 58.7 percent), and in the Western Province (Rusizi-Nyamasheke (58.8 percent).

Rwanda Agricultural Development Authority (RADA 2010) reports that agricultural productivity is hindered by, poor marshland and hillside irrigation, and crops destroyed by animals (baboons). Moreover, Valens et al. (2011) argue that land degradation and resulting deterioration in soil fertility have lowered the soil productivity. Despite the efforts in

agricultural intensification (intensification technology package: mineral fertilisers, manure, improved seeds, liming, erosion control), soil productivity has deteriorated or remained stagnant. Compared with productivity of most crops in 1957, the average was lower in the period 2004-2008.

The 2006 NISR study reports that the produce harvested in agricultural season A lasts less than two months for 61 percent of households. Produce harvested in season B lasts a little longer: 52 percent of households revealed that it lasted for two months or less, while 43 percent said that theirs lasted for between three and six months. For season C, 83 percent of households said that their harvests lasted for two months or less. In terms of geographic distribution, the harvest produced lasted for the shortest time in Bugesera, Southern Plateau, and Eastern Curve. This means that household farmers face the problem of food insecurity, especially during March and April and in September and October. In addition, because of insufficient resources, the post-harvest and marketing activities are not sufficient (IFDC 2010). Thus Valens et al. (2011) argue that in Rwanda, the lack of food storage and food processing facilities pause greater risks to the availability of food. This leads to a situation where farmers often have to sell their products during harvesting times at low prices and then a few months later they have to buy more at higher prices, which is difficult because of their purchasing power.

Furthermore, the National Agricultural Policy emphasises the transformation of agriculture into a high value and high productivity sector to ensure food security (Engels et al. 2002). According to Herforth (2010), government support promotes regionalised production of crops, with the result that individual farmers produce fewer crops in favour of the one that the government supports in their region. Herforth (*ibid*) criticises this policy by asserting that

nutrition and the environment though essential for food security, are not at the core of this policy since its approach reflects a strategy to exploit agriculture as an engine of national economic growth and increase individual household income for farmers.

To sum up, food security phenomenon in Rwanda has deep connections with performance of agricultural sector and this implies that food security in Rwanda can be promoted through sustainable agricultural productivity since other sectors on the economy are weak. One may argue that, the trickle-down effect of the economic growth can address food insecurity and hunger in most areas.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Research Design

In order to investigate the central questions of the study a qualitative approach was employed. Qualitative research generally aims at addressing questions demanding a broad understanding of the meaning and experience dimensions of humans' lives and social worlds (Fossey et al. 2002). The strength of qualitative methodology is its ability to generate interpretable knowledge about certain social issues, providing an understanding of social actions in terms of their specific context, given the fact that the research is conducted in the natural setting of social actors (Adler et al. 1995).

Although findings from qualitative data can often be extended to people with features similar to those in the study population, gaining a rich and complex understanding of specific social context of phenomenon rationally takes precedence over eliciting data that can be generalised to other geographical areas or populations (Mack et al. 2005).

Hence, this research is a qualitative study, and it has been designed to focus on a pre-defined small sample of population situated in their concrete social context of everyday life. The present study has thus gathered and thoroughly analysed the data from different people involved in and affected by the LCP in Rwanda. As described in the previous section, this research aimed at investigating rigorously whether the LCP in Rwanda is being beneficial or not in attaining household food security.

3.2. Case Study

A case study approach was used in this study in order to give detailed information on the outcomes of LCP in household food productivity in Gisenyi village. A case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances (Stake 1995). A case study is not limited to a single source of data and it may use multiple sources of evidence (Yin 2011).

The approach is used with full knowledge of its limitations which the researcher attempts to moderate. A major limitation of a case study approach, according to Yin (*ibid*), is that the reliability and applicability of information gathered is determined by the area that served as a case study. This means that some areas may have different responses to the policy and this may result in different outcomes. Case study theory building is a bottom up approach such that the specifics of data produce the generalisations of theory. Eisenhardt (1989) argues that building theory from case study may end in a narrow and idiosyncratic theory. Nevertheless, this study does not aim at generating theory from case study, but adding empirical evidence for theoretical considerations.

The present study intends to investigate the role of LCP in food productivity at the household level. This work, as has already been mentioned, is designed as a case study, focusing on Gisenyi village of Kibirizi cell in Mayange sector of Bugesera district, in Eastern Province of Rwanda.

In Gisenyi village, all households are involved in agriculture as their main economic activity. Some of them (40 percent) also have other economic activities which seem to provide less

income. This is related to the figures of the 2009 NAS where 85 percent of Rwandan heads of households are agricultural farmers (NISR 2008). It is important to mention that farmers wish only to cultivate their farms in one season per year (from mid-March until mid-June, known as season B) since it is the only season that has enough rain in this village. Compared to the other regions of the country, Bugesera area is characterised by a hot climate, the absence of rains with some periods of non-severe droughts (Republic of Rwanda 2006). Also most households (95 percent) are composed of 4 or more members in Gisenyi. This number is related to birth rates in Rwanda with an average of five children born per couple (Temel 2011).

Four reasons motivated the choice of this area for case study. First, Bugesera district is one of the 8 districts where the LCP started (Ministry of Agriculture and Animal Resources, MINAGRI 2011). Second, Bugesera district is a region in Rwanda that has mostly suffered the occurrence of famines. Third, Mayange sector, where Gisenyi village is found, has been chosen by the government as an example in the programmes of agricultural development because it was the most vulnerable in terms of famine in Bugesera. Fourth, the focus on the Gisenyi village of Bugesera district is compelled by the need to narrow the scope of the research.

3.3. Sampling

Sampling is the process of selecting units from the population in order to gather information and make inferences about the whole. It provides a practical and efficient means to collect data (Channels 1985). Sampling helps in the data collection process as a model of the larger population (Babbie 2010).

The study used a random sampling approach to identify respondents for the data collection process in Gisenyi village of Bugesera district. Channels (*ibid*) remarks that, the random sampling is known to give the best replication of the characteristics of the population since a randomly drawn sample relies upon an external, objective selection process, giving each element an equal chance of inclusion in the sample. Considering that the study is about the LCP, the data were collected from a community of household farmers in Gisenyi village (of 105 houses) in Kibirizi cell.

The random sampling used in this study allowed identifying the household farmers involved in and affected by the LCP in Gisenyi village. The total sample used for this study consisted of 20 household farmers from Gisenyi village in Bugesera (11 males and 9 females) and 8 key informants. The household farmers to be interviewed were selected from a list of Gisenyi household famers provided by the civil local authorities of Gisenyi village. The civil local authorities of Gisenyi village also assisted in localising and informing the interviewees about the study.

3.4. Data Collection Methods

This study used data collection methods that strategically answer the research questions and objectives as outlined in Section 1.3. The methods included interviews, observations and document analysis.

3.4.1. Document Analysis

This study used document analysis to support qualitative methods. According to O'Leary (2004), document analysis involves collection, review, interrogation and analysis of various

forms of text as a primary source of research data; and these documents are pre-produced texts that have not been generated by the researcher. The main documents analysed were related to Rwanda regarding the issue of land scarcity and land fragmentation. Relevant journal articles, books, research reports, internet, magazines and newspapers all related to land have been consulted. Moreover, the 2004 NLP and the Organic Land Law 2005 which contain the information about LC as well as the 2008 NAS have been used as sources of data.

During the data collection period in Rwanda, the researcher also consulted other works related to agricultural activities done by other researchers including the works from the National University of Rwanda, MINAGRI and from Association de Coopération et de Recherche pour le Développement (ACORD). Documents on land reform experiences in Eastern African countries found in the Cullen and other libraries at the University of the Witwatersrand have been also used.

3.4.2. Non-participant Observation

The technique of observation is defined as an ideal means for noting behaviours that people may be unaware of, such as the non-verbal behaviours of gestures or postures (Cargan 2007). The researcher used non-participant observation. With this technique a researcher does not live within the society or community, and he is refrained from interventions in the field (Flick 2009).

In order to come up with substantial findings for this study, it was essential to make a fieldwork visit to Gisenyi village of Mayange sector (Bugesera district). The researcher observed the way inhabitants are settled in *Imidugudu* (villagisation), food production

situation in the homes of household farmers and how they were taking their food production to the market (especially maize production). The researcher also physically visited the farms of the interviewed household to see how they cultivated the land and the types of crops they cultivated. This observation helped the researcher to obtain empirical evidence about the kinds of changes the new LCP had brought to the farmers' food security situation.

3.4.3. Unstructured or In-depth Interviews

In-depth interviews were used to gather data. In-depth interviews were useful for this study as it sought to obtain detailed information about people's thoughts and behaviours or to discover new issues in-depth (Boyce and Neale 2006). Qualitative interviewing refers to asking questions to individuals or focused groups, and recording the responses. Face to face interviews were used to collect data in this study and the researcher used his Kinyarwanda language competencies in conducting interviews. The interviews followed set sub-questions outlined in the interview schedule.

For the purpose of this study, in-depth interviews were to allow for better contact between the researcher and household farmers. The interview permitted the researcher to discover the state of household food productivity by pointing to key empirical aspects related to the household farmers' experiences within agricultural production. Thus, the researcher was able to ask questions in order to get detailed information about the benefit from food production, the amount of food stored and its sustainability. In-depth interviews allowed household farmers to provide detailed data about performance in their agricultural activities and the challenges with LCP. However, a weakness of this in-depth interview method might have

been the fact that the researcher's presence could have influenced the respondents' openness in sharing or answering questions (Gramatikov et al. 2009).

3.4.4. Key Informants Interviews

Key informants differ from other informants by the nature of their information-rich connection to the research topic. The three main reasons for using key informants are: to gather information efficiently, to gain access to information otherwise unavailable to the researcher, and to gain a particular understanding or interpretation of cultural information (Gilchrist and Williams 1999).

The information provided by the selected 8 key informants was pertinent to this research since they were the best informed persons in land matters and had been actively involved in land consolidation processes. The 8 key informants who were interviewed comprised:

- One local administrative leader (Executive of Kibirizi cell)
- An agronomist of Mayange Sector
- One specialist of agricultural sector in MINAGRI.
- Senior agronomist in Husbandry, Water Harvesting and Hillsides Irrigation Project (of MINAGRI)
- Four people representing local Non-Governmental Organisations (NGOs) intervening in agricultural projects. These NGOs are: Millennium Villages Project (MVP), CARITAS Rwanda, ACORD and IMBARAGA syndicate (national union of farmers and breeders of Rwanda).

These key informants were chosen based on their expertise on agricultural development. For instance MVP is based in Mayange sector. Mayange sector was chosen as a sector that was

more vulnerable with deforestation and little rainfall. The key informant from this organisation provided the researcher with rich information about the process of the LCP in Mayange sector. Also, the respondent from CARITAS Rwanda provided the researcher with valuable information since CARITAS is much involved in agricultural activities and poverty reduction in Bugesera district. For the representative of ACORD interviewed, he was sufficiently informed about the LCP. As this NOG is also involved in rural development especially in terms of supporting Rwandan farmers, the respondent was also adequately informed about agricultural activities and the challenges farmers face in the LCP. Furthermore, the syndicate IMBARAGA is closer to the farmers since the members are also involved in agricultural sector. The information provided by the key informant from IMBARAGA syndicate had an added-on value of being experience-based facts.

3.5. Ethical Issues and Considerations

For the interview-based-research to be fully ethical, the researcher must first present consent forms to the respondents for them to sign and officially agree to participate in the research and as well as to be audio recorded (Hoonaard 2002). The researcher is obliged to protect the participants' identity, and their locations. In this study, the researcher followed the ethical guidelines in guaranteeing full anonymity and confidentiality to the respondents who participated in the interviews he conducted (data sampling phase) (Seale et al. 2006). In the data analysis and research findings presentation stages, the interviewees' names are not used, as well as any other form of official identification. Furthermore, the participation in the research was voluntary, and the interviewees agreed, with a full consent, to the use of their responses and information for this academic research.

Safety from any physical and/or psychological harm was also considered and guaranteed to the participants in the data collection phase of this research. The research questions had to ensure neutrality and avoid being judgemental. In responding to the research questions, the control of emotions and interactions were respected. Bias in questioning was avoided to guarantee fair responses from the interviewees, meaning that there was no personal manipulation of responses to ensure a fair record of people's viewpoints.

3.6. Limitations and Scope of the Study

This study was of qualitative nature. Due to the limited number of the interviewees, the findings of this research portend a statistical limitation; hence a categorical generalisation is avoided in presenting the results of this study. Thus, further studies, in regards to the LCP in Rwanda, are recommended. The purpose of this study was to provide in-depth point of view of the LCP as a government policy to enhance food security, particularly food productivity.

A part from limited time and resources, the main limitation encountered during field work of this research was reluctance and lack of openness from the interviewees. This could be explained to certain extent by the context of Rwanda (historical, social and cultural). To lessen suspicion and distrust, the researcher was introduced to the Gisenyi community by local authorities as a student conducting a purely academic study. Nevertheless, a few respondents remained sceptical about the researcher's identity of 'student'. Many respondents were also reluctant to give information especially that which related to their incomes.

In addition, the household farmers interviewed were less willing to disclose the amount of their agricultural productivity and the amount they earn. This is not surprising as culturally,

Rwandans do not open up to anyone (especially a stranger), sharing details of their in-house realities such as economic situation or family situation.

Furthermore, since the respondents were sceptical that the researcher was a student, they saw him as a government agent sent to assess their agricultural products. This scepticism was apparently based on the fact that the household farmers were given free fertilisers by the state; and they feared to be taxed or charged if the productivity was remarkably improved. This is illustrated by what some of the respondents disclosed to the interviewer. For instance, one household farmer told the researcher that "*some farmers are thinking that if they reveal that they have got high agricultural production the government will oblige them to pay the fertiliser*" (Respondent 13, July 2011). During the first three years of implementation of the LCP, the fertiliser has been granted to the household farmers for free. Providing fertiliser in the first years of the LCP implementation was like an incentive, so that household farmers could easily welcome the programme. However, since the year 2011, household farmers of Gisenyi village have been told that they have to pay for the fertiliser after the harvest.

This reluctance or lack of openness is the gate-keeping incident faced by the researcher. According to Shoemaker and Vos (2009) "Gatekeeping is the process of culling and crafting countless bits of information into the limited number of messages that reach people each day". The Gatekeeper here is the person who can open or close the information, a person with enough influence or authority to affect information flow in a way that might reflect personal bias (Stone et al. 1999).

CHAPTER FOUR: RESEARCH FINDINGS AND INTERPRETATION

As mentioned in previous chapters, the aim of this study was to investigate the outcomes of LCP in household food productivity, in Rwanda. As a case study, the research was conducted in Gisenyi village of Bugesera district in Rwanda. Furthermore, as a qualitative study, only a limited number of people (household farmers and key informants) were interviewed; and they provided necessary data which were used to assess the situation of agricultural productivity following the 2004 NLP implementation which incorporates the LCP. The empirical research was conducted from 4th July to 25th July 2011.

This chapter presents and discusses the findings of this qualitative study. In order to qualitatively assess the outcomes of the LCP in household food productivity in Rwanda, the research findings are thematically divided into four main sections. The first section looks at the description of the area and the demographic profile of respondents (household farmers, men and women), interviewed in this study. The second main section discusses the agricultural land usage and the household food productivity situation in Gisenyi village before the implementation of the 2004 NLP. This section is divided into two subsections: firstly the agricultural land usage is looked at, and secondly household food productivity situation is assessed. The third section debates on the implementation of the 2004 NLP by looking at the implementation of the LCP in Gisenyi village, as described by the respondents (household farmers, and key informants). The last main section examines the agricultural land usage and the household food productivity following the implementation of the NLP. This permits a qualitative assessment of the outcomes of the LCP in household food productivity in Gisenyi village.

4.1. Description of the Area and Demographic Profile of Household Farmer Respondents

This section looks at the description of Bugesera district located in the Eastern Province of Rwanda. It also profiles the household farmers (of Gisenyi village, in Bugesera district) that were interviewed in this research. Characteristics such as gender, age, household size, household land size, economic activities, and annual income are used as tools to describe the household farmer respondents.

4.1.1. Description of the Area

Bugesera district is located in Eastern Province of Rwanda. The district of Bugesera is one of the seven districts constituting the East Province of Rwanda. The relief of Bugesera is a succession of trays on the heights subsidised and whose altitude varies between 1300 and 1667 meters. Bugesera is also characterised by a set of curlings of hills to the soft and middle slopes. The low trays that overhang some mounts: Juru mount, the more culminating of the district with 1667 meters, the mount Nemba with 1625 meters and the Maranyundo mount that have an altitude of 1614 meters (Republic of Rwanda 2006). Compared to the other regions of the country, Bugesera is a non-mountainous region characterised by a hot climate, the absence of rains and sometimes periods of non-severe droughts. There are two rainy seasons: short rains from October to November and long rains from mid-February to May. Bugesera district gets water resources from its lakes and rivers such as river Nyabarongo, and the lakes like Rweru, Cyohoha, Gashanga, Kidogo, Rumira, Mirayi, Kirimbi, and Gaharwa. Although Bugesera is blessed with considerable water resources, famine has been frequent following poor harvests due to drought and inadequate water harvest and control (African Development Fund, ADF 2006).

The population of Bugesera district is about 274.113 people: 131.979 men and 142.134 women. Its economy is largely based on agriculture and more than 80 percent of the population lives on agricultural activities. The population of Bugesera largely faces the problem of the low accessibility to lands. Approximately 30 percent of households are landless and another 40 percent owns less than a half-hectare. In Bugesera, Agriculture is mostly for subsistence with a moderately fertile soil. On average only 18 percent of households are producing for market. In the past, Bugesera region was the country's breadbasket where the major food crops were beans, sorghum and cassava among others. In 1994, the genocide had a devastating effect on the region, worsened further by the exploding number of single-parent families (38 percent of women and several young orphans now head families). During 1997-2006, the region recorded a lot of climatic irregularities which went as far as lacking rains completely, the direct consequences of which have been food insecurity and massive population movements (ADF 2006, Republic of Rwanda 2006, Republic of Rwanda 2007).

4.1.2. Demographic Profile of Household Farmer Respondents

4.1.2.1. Gender

Table 1: Gender distribution (Fieldwork data July 2011)

Gender	Number of farmers	% of farmers
Male	11	55
Female	9	45
Total	**20**	**100**

As indicated in the above table (**Table 1**), the household farmers interviewed in this research were in total 20 people: eleven men (representing 55 percent of the interviewed farmers) and nine women (representing 45 percent of the interviewed farmers). It is worth noting that, the number of both men and women has been chosen randomly. The low number of women in the sample of this study is explained by the fact that, five out of twenty household farmers interviewed were headed by women (widows), while other 4 were available during interviews. These figures are related to those of the 2009 NAS where 85 percent of Rwandan heads of households are agricultural farmers, out of which 27 percent are female (NISR 2008). The literature review showed that, in Rwanda, cash crops are usually managed by men, while women are interested in food crops (Hahn 1992). However, during the fieldwork interviews, it was found that household farmers (both women and men) are interested in cash crops and they are all cautious about maintaining their plots for food crops.

4.1.2.2. Age

Table 2: Age distribution (Fieldwork data July 2011)

Age-group	**Number of farmers**	**% of farmers**
30-34	2	10
35-39	3	15
40-44	2	10
45-49	7	35
≥ 50	5	30
Total	**20**	**100**

The table above shows that the majority of household farmer respondents (70 percent) were less than 50 years of age. This means that many household farmers are still able to use their physical forces in agricultural activities. These figures are related to those of the 2008 NAS where the farming population is relatively young with the average age of heads of farming households at 44 years (more than 75 percent are less than 54 years old) (NISR 2008).

4.1.2.3. Household Size

Table 3: Household size distribution (Fieldwork data July 2011)

Members in household	Number of farmers	% of farmers
1-3	1	5
4-6	12	60
≥ 7	7	35
Total	**20**	**100**

Most households of the respondents (95 percent) were composed of 4 or more members. Almost all household are made up of parents and their children except two households that have additional people from the extended family. It is a challenge for such sizes of households in a developing country like Rwanda, to get sufficient food production for the entire household. Demeke (2004) argues that households with larger family size are more likely to suffer from consumption shortfalls or plunge into poverty than those with smaller family size. Rwanda has one of the highest birth rates in Africa with an average of five children born per couple (Temel 2011). Such increasing population pressure leads to the fragmentation of land as farmers look harder for whatever pieces of land may be available for cultivating (Clay 1996).

4.1.2.4. Household Land Size

The majority of the household farmers (60 percent) who participated in this research possess cultivable land of 2 hectares each (**Table 4**). Only 5 percent cultivate less than 0.5 hectares of land, and 5 per cent of interviewed household farmers had 3 hectares of cultivable land, each.

Table 4: Household land size distribution (Fieldwork data July 2011)

Household land size	Number of farmers	% of farmers
≤ 0.5 hectare	1	5
1 hectare	4	20
1.5 hectare	2	10
2 hectare	12	60
3 hectare	1	5
Total	**20**	**100**

This profile of land size distribution in the Gisenyi community differs significantly from the national average land distribution, which was published in 2007 by MINECOFIN. The latter stated that 60 percent of household farmers in Rwanda (in general) possess less than 0.7 hectares of cultivable land, each (MINECOFIN 2007).

This observation that 60 percent of farmers with 2 hectares of land in Gisenyi village (**Table 4**) could be explained by the historical fact that in Bugesera district people settled in *Paysannat* system following the country's independence (Havugimana 2009). Under the *Paysannat* system, every farmer was allocated a two hectare plot on which he had his family house and grew food and cash crops. It is important to note that in most instances, recipients

were young men who did not have sufficient land (*ibid*). However, even though, the majority of household farmers (60 percent) in Gisenyi possess 2 hectares of land, food insecurity continues to be a disquieting issue in Bugesera.

4.1.2.5. Household Consolidated Land Size

As described in previous chapters, the LCP (in Rwanda), implies a procedure of putting together plots of cultivable land for an efficient use of the land, aiming at increasing food productivity (MINETERE 2004:29; Land Law N° 08/2005). Household farmers in villages are thus expected and encouraged to participate in the LCP by consolidating their land, i.e. putting together their respective plots of cultivable land.

In this research, it was found that the household farmers in Gisenyi village did not offer all their cultivable land for the LCP. As deduced from **Table 5** below, 95 percent of the interviewed household farmers consolidated one hectare or less, for the LCP. Although all household farmers are invited to consolidate their land (in the LCP), it is within their rights to decide the size of the land to put in the LCP. This was also confirmed by a key informant from CARITAS who pointed out that a household farmer is not obliged to consolidate his/her entire farm for only one or two chosen crops for the LCP.

Table 5: Household land consolidated distribution (Fieldwork data July 2011)

Consolidated land size	Number of farmers	% of farmers
< 0.5 hectare	6	30
0.5 hectare	6	30
1 hectare	7	35

1.5 hectare	1	5
Total	**20**	**100**

Since one of the aspects of the currently implemented LCP in Rwanda is to increase agricultural productivity, the tendency of all household farmers (**Table 5**) is to use one part of their cultivable land for the LCP (for cash crops) and keep the other part for themselves wherein they cultivate other crops they need. However, one of the key informants from the MINAGRI reported that there are also some household farmers who choose to consolidate their entire land and buy other food products from the income they get from the cash crops (from the LCP).

4.1.2.6. Household Economic Activities

In order to situate the LCP in a village such as Gisenyi (in Bugesera district), it became necessary to empirically inquire about the economic situation in this community: means of income and main economic activities.

Table 6: Household economic activities distribution (Fieldwork data July 2011)

Economic activities	Number of farmers	% of farmers
Agriculture	12	60
Agriculture and livestock	5	25
Agriculture and small trade	1	5
Agriculture, livestock and small trade	1	5
Agriculture and small craft	1	5

Total	**20**	**100**

As **Table 6** (above) indicates, the main economic activity in the Gisenyi community (Mayange sector of Bugesera district) is agriculture. Through this activity a household farmer hopes to provide food and other basic needs to his/her family. This is often a big challenge to the farmer, hence some farmers (only 40 percent in this study, see **Table 6**) engage in extra economic activities (though small) that can assist them to complement their income.

Agriculture remains the main source of income and means of providing all basic needs in the community of Gisenyi. 60 percent of the household farmers interviewed (**Table 6**) live exclusively on agricultural products. This empirical observation is actually related to the already established fact that the lives of many Rwandans, about 83 percent, depend on agricultural sector (NISR estimation 2011). Certainly, in such economic context where agriculture is crucially fundamental for the livelihood of the society, an effective program that aims at increasing agricultural productivity, such as the LCP, is imperatively important.

4.1.2.7. Types of Cash Crops in LCP in Gisenyi Village

The LCP is designed not only to provide increased food productivity at the household level, but also to create a means of generating income for food security in particular, and farmers' livelihood in general (Ministry of Justice, MINIJUST 2010). The household farmers from Gisenyi village, who participate in the LCP, have thus been invited to cultivate cash crops, under the supervision of governmental agents (from MINAGRI). As **Table 7** (below) shows, the main cash crop cultivated in Gisenyi village is maize.

Table 7: Types of crops in LCP distribution (Fieldwork data July 2011)

Types of crops	Number of farmers	% of farmers
Maize	7	35
Maize and beans (mixed)	13	65
Total	**20**	**100**

Reckling (2011) reported that maize cultivation has been expanded by most farmers in Bugesera, not because of the government policy of LC but also because of its high market value and drought tolerance. However, all household farmer respondents have confirmed that maize was not amongst their staple foods before the LCP. As indicated in **Table 7** (above), 65 percent of the respondents have mixed maize and beans. One of the key informants confirms that:

> *The household farmers have been allowed to mix maize and beans. This is because they do not want to cultivate maize only on large-scale without mixing their staple food, which is beans* (Informant 2, July 2011).

Based on this empirical observation, one can argue that in the implementation of a government policy such as the LCP, all social aspects are to be seriously and contextually considered so as not to impact negatively on the daily life of the concerned community. As MacHale and MacHale (1979) emphasise, food constitutes one of the basic needs for the livelihood (or survival) of human beings in a society. Hence, the LCP implementation must accommodate the staple food of the farmers, especially in a community where agriculture is the main source of a daily meal.

4.1.2.8. Household Agricultural Productivity within LCP

In this programme of LC, the crops cultivated in Gisenyi village are maize and beans.

Table 8: Household agricultural products per year, in LCP (Fieldwork data July 2011)

Productivity (Kgs/year)	**Maize**		**Beans**	
	Farmers	**% of farmers**	**Farmers**	**% farmers**
1000 -1500	2	10	---	---
500 -1000	10	50	8	40
< 500	8	40	12	60

As indicated in **Table 8** (above), 60 percent of household farmers can harvest more than 500 kilograms of maize per year. Beans are another staple food cultivated in Gisenyi village. On the other hand, only 40 percent of the farmers (interviewed in this study) are able to produce more than 500 kilograms of beans per year (**Table 8**).

4.1.2.9. Yearly Monetary Income of Household Farmers

Although the LCP provides means of generating income for the household farmers, the majority of the household farmers in Gisenyi village, 70 percent, have annual monetary income of 90.90 or less to 181.81 US$ (**Table 9** below), i.e. a monthly income of 7.6 US$ or less to 15.2 US$ per month.

Table 9: Yearly monetary income of household farmers (Fieldwork data July 2011)

Monetary income (US $)*	Number of farmers	% of farmers
727.27 to 545.45	1	5
545.45 to 363.64	1	5
363.64 to 181.81	4	20
181.81 to 90.90	6	30
Less than 90.90	8	40
	20	100

* 1 US$ = 550.00 RWF (Rwandan Franc: the currency used in Rwanda)

The other 30 percent of the household farmers who participated in this study register an annual income of 181.81 to 727.27 US$ as indicated in **Table 9**. The main reason behind these differences in annual income was that all household farmers are not equally interested in cash crops. Therefore, they allocated different size of their land to maize and beans cash crops. Those who earn a higher yearly income, more than 545.45 US$, have devoted almost the whole size of their land for the cash crops. Those who earn low incomes annually maintained a larger portion of their land under household food production while using only a small size of land to cash crops. However, it is evident that almost household farmers in Gisenyi village earn less than 530 US$ which is the estimated GDP per capita of Rwanda (World Bank report 2011).

As mentioned above, also the household farmers in Gisenyi village have shown a certain hesitation in embarking on the LCP. Most of the farmers have hold back a portion of their land to cultivate the staple food they need on a daily basis. Therefore, the question as to

whether household farmers view the LCP as a programme which may enhance their agricultural productivity emerges.

This brings up the question of knowing the benefit of the LCP in regards to securing the human basic need of daily food in a village like Gisenyi where agriculture is a fundamental sector for livelihood. Thus, in order to assess thoroughly the outcomes of the LCP in food productivity (in Gisenyi village), it is necessary to examine the food situation prior to the 2004 NLP and the LCP implementation in Gisenyi village.

4.2. Agricultural Land Usage and Household Food Productivity Situation before the 2004 NLP

In order to get a clear picture of the food productivity situation in Gisenyi village before the 2004 NLP, two key aspects are examined: the agricultural land usage and agricultural productivity. The study was limited to these two factors based on the fact that its main focus is on the outcomes of the LCP in agricultural productivity in particular. Thus, the two factors could provide qualitative tools for measuring the changes brought by the LCP.

4.2.1. Agricultural Land Usage before the 2004 NLP

In this study, it was found that, before the 2004 NLP there was no land consolidating system in place, and land management was left to the owner of the land. Each household farmer used his/her own cultivable land as it fits him/her. Houses were dispersed and land was fragmented. The lack of good land management and the ineffective agricultural system (lack of fertiliser and limited time of fallowing) led to detrimental implications in the agriculture. Balasubramanian and Egli (1986) in their study of some regions of Rwanda (Bugesera-

Gisaka and Migongo), found that household farmers were characterised by overcropping without the addition of adequate nutrients and cropping of marginal lands. They were also characterised by poor conservation and cattle manure resulting in loss of nutrients.

In their farming system, all household farmers interviewed affirmed that before the 2004 NLP, they rarely used fertiliser. One of the household farmers said that he could even have non-industrial fertiliser from home wastes, but he never used it for keeping the land fertile. Some of them claimed that since the soil was fertile using fertilisers was not necessary. Moreover, household farmers could fallow the plots and rotate the crops. All household farmers emphasised that, rotating crops and fallowing allowed the soil to remain fertile. However, one of the household farmers interviewed revealed that in early 1980s all household farmers could leave their land fallow for sometimes because the land was available, but later on this system was abandoned slowly because land was becoming scarce.

As mentioned in the previous chapter, the land tenure before the 2004 NLP was also that of "land titles", i.e. people had land ownership rights. The land management system prior to the NLP in Gisenyi village favoured land fragmentation, which in turn had an overall effect on the agricultural production in a way. Therefore, the lack of proper land management and the ineffective agricultural system prior to the NLP, as deduced from the respondents' inputs, contributed extensively to the vulnerability of the Gisenyi village in terms of food security.

4.2.2. Household Food Productivity Situation before the 2004 NLP

In their agriculture, household farmers cultivated different crops on the same farm (intercropping system) where they could mix sorghum, maize, and beans on the same piece of

land. One of the household farmers interviewed claimed that because they cultivated different crops on the same plot, the productivity for each crop was small. Thus, due to the poor agricultural productivity, the income was significantly insufficient and household farmers could not afford other necessities. MacKay and Loveridge (2005) observe that, in 1990s, rural household incomes in Rwanda were low by international standards.

Sorghum and beans were the most cultivated crops before the NLP (**Table 10** below). Sorghum was the main cash crop, and most of the household farmers, 65 percent, used to harvest more than 500 kilograms of sorghum per year. Beans, on the other hand, were mostly cultivated as a staple food, and only 30 percent of the household farmers (who participated in this study) could harvest more than 500 kilograms of beans per year.

Table 10: Household agricultural products per year, before the 2004 NLP (Fieldwork data July 2011)

Productivity (Kgs/year)	**Sorghum**		**Beans**	
	Farmers	**% of farmers**	**Farmers**	**% farmers**
1000 -1500	7	35	---	---
500 -1000	6	30	6	30
< 500	7	35	14	70

Due to the small quantity of the other food crops cultivated before the NLP (cassava, sweet potatoes, etc.), as the respondents stated, sorghum and beans played a vital role in their monetary income and daily meal, respectively. The other food crops were cultivated to supplement the daily household food.

However, due to the size of a family (as described in the first section of this chapter), the respondents mentioned that generally the food production was insufficient. A single family could afford only one meal a day yet as mentioned in the literature review, food security meant affordability of sufficient quantity of food and nutritious meal at the family level (Tweeten 2009).

Due to this insufficient agricultural production, the household farmers in Gisenyi village could hardly afford to care for their respective families in terms of other needs such as clothing, proper housing, schooling of their children, etc. As earlier indicated, the livelihood of the most Rwandans in rural areas like Gisenyi village is agriculture-dependent (Buruchara et al. 2002); 80 percent of the respondents (household farmers) value their annual monetary income (from agricultural production) prior to the NLP in terms of assets. They mentioned that they could buy livestock (specifically a goat) from their agricultural income. This was their strategy of saving for the future. Most of the household farmers also mentioned that they could sell their products (mostly sorghum) occasionally for money, allowing them to attend to other needs such as buying other types of food, solving some familial problems and other urgent matters like medical treatment. However, this unstable income was significantly insufficient due to the poor agricultural production, as emphasised by the respondents.

One of the other factors that affected household food security in Gisenyi village was food shortage due to severe drought. In general, Bugesera district used to face drought, hence the agricultural activities were not favourable (ADF 2006). In this study all household farmers interviewed mentioned that before the NLP they faced a severe drought which caused famine especially during 2000-2003. During this severe drought, many people abandoned this area and others were even reported to have committed suicide (like parents killing themselves

because they were unable to feed their children, as revealed by one of the key informants from CARITAS). All household farmers (who stayed in the area) relied on food aid for survival, as stated by respondents.

The food shortage in Rwanda's rural areas has been also reported by other scholars. MacKay and Loveridge (*ibid*) for instance pointed out that in the ten years between 1990 and 2000, Rwandan rural households have faced food production deficits due to drought, pests and diseases in various crops, and the devastating effects of the 1994 genocide.

A social situation, where people are not able to sustain themselves in terms of food security (sufficient food/daily meal), calls for government policies that can bring a change by pragmatically addressing the underlying causes of the situation at hand. Thus, Rapley (2007) argues that a state may have responsibility and obligation to provide mechanisms and support that allow all its citizens to alleviate poverty and enjoy the fundamental human needs, which include food availability.

The above section, based on the respondents' inputs, described some of the challenges related to the agricultural land usage (land fragmentation and intercropping system) and the critical situation of household food security (in terms of insufficient food production) before the NLP implementation in Gisenyi village. Hence the government of Rwanda, in order to overcome these challenges, came up with the 2004 NLP.

4.3. Land Reform: the 2004 NLP

4.3.1. A Brief Presentation of the LCP Implementation in Gisenyi Village

This section looks at the LCP (a government policy) in Gisenyi village, assessing to a certain extent the implementation of this LCP and the existing challenges in this programme, as far as agricultural productivity is concerned. The section is subdivided into four subsections. Firstly, how the LCP was implemented in Gisenyi village will be looked at, and the participation of NGO's and other social agents in this process of the LCP implementation. Secondly, the government support following the LCP implementation will be assessed. The third subsection looks at the response and views of the household farmers on the LCP. Lastly, the fourth subsection presents some challenges encountered in the LCP currently.

4.3.1.1. Implementation of LCP in Gisenyi Village and Key Players Involved

Recalling from the literature review section of this study, the LCP forms part of the 2004 NLP of Rwanda. The latter has as its main objective, the establishment of a land tenure system that guarantees land tenure security for all Rwandans, providing guidance to the necessary land reforms, with a view to proficient land management and rational use of national land resources (MINITERE 2004). As mentioned previously, this NLP (comprising the LCP) was to provide answers to some crucial problems such as land fragmentation and food insecurity in Rwanda.

The LCP, defined as a procedure of putting together small plots of land so as to promote good management and efficient usage of the land (Rwanda Land Law N° 08/2005), would thus enhance agricultural productivity. As the key informants from MINAGRI emphasised, the alarming situation of food insecurity across the whole country urgently called for concrete

and practical action from government, hence the necessity to implement a programme such as the LCP.

Thus, as confirmed by the respondents (household farmers and key informants), the LCP was implemented in Gisenyi village, by inviting household farmers to interlink their plots in order to cultivate one crop. However, one of the fundamental requirements for this consolidation of land is the land title, as stipulated in the Article 20 of the Rwandan Land Law N° 08/2005. As mentioned in the earlier sections, de Soto (1994) asserts that the legally formalised land titles system gives people a sense of legal ownership of their property and therefore they have the incentive to invest their intelligence and work in improving the land. Formalised titles open the door to credit. All household farmers interviewed had registered their land, and received land titles.

Apart from the government (particularly the MINAGRI), other key players involved in the LCP implementation process in Gisenyi village were NGOs such as ACORD and CARITAS. The literature shows that NGOs, in developing countries, play a key role in social and economical development programmes. They provide technical and/or consultative support, and sometimes they participate in a social/economical programme as facilitators (Willis 2005).

The role of NGOs in the LCP implementation in Gisenyi village was mostly technical support and sensitization, as confirmed by different NGOs agents concerned. A key informant from the MVP indicated that in Gisenyi village, the MVP is involved in mobilising household farmers to participate in the LCP, emphasising the legal ownership of their land. The MVP also provides educational support (to the farmers) on possible ways of accessing the market

for their agricultural products; and technical assistance in terms of crop-disease control. CARITAS is also one of the NGOs involved in the LCP implementation in Rwanda. A key informant from CARITAS mentioned that CARITAS provides trainings to the household farmers in terms of how to cultivate and use fertilisers. It also distributes seeds for crops.

One of the critiques expressed by the NGOs' key informants regarding the LCP implementation process is that NGOs were not initially consulted in the preliminary studies of the programme. NGOs merely supported the LCP process technically and played the role of facilitators. One of the key informants from ACORD expressed this in these terms:

> *Normally, the NGOs disseminate the LCP rather than having critical side against that programme. They do not ask themselves too much about the challenges, success and worries that can occur from that programme. That is why I find that the NGOs did not play a significant role in the LCP implementation* (Informant 7, July 2011).

It is possible that consulting NGOs could have speeded up the implementation process of the LCP and opened up other aspects and areas to be explored for the success of the programme. Thus, Ansoms (2008) argues that civil society organisations have a capacity to give voice to the population's feedback about national ambitions and policies. NGOs continuously assist the farmers in the LCP, but most of the support is provided by the government as discussed below.

4.3.1.2. Impacts of the LCP Implementation

As confirmed by the interviewed household farmers of Gisenyi village, the land titles served not only in the LCP implementation, but also in other aspects of people's lives. Some (60 percent) confirmed that the land titles helped in reducing land conflicts. The literature review

also showed that a programme of LC could help in addressing potential conflicts which may occur due to changes in the use of land (FAO 2003).

Kairaba and Simons (2011) in their research on the impact of land reform, in Rwaza and Kinyinya sectors, also found that, since land registration programme started farmers have increased performance by 88 percent, because they do not spend any more time on resolving land related disputes which used to take over 80 percent of their time.

Moreover, 75 percent of the farmers stated also that with land titles they can confidently approach the banks for loans. Similarly, in Kenyan case, Wilson (1971) mentioned that many landholders have been able to mortgage their lands since registration and got credit for agricultural development. As Crecente (2002) emphasises, when small plots are consolidated into large scale-farms, farmers get opportunities such as facilities for getting credit. However, a few household farmers were sceptical about the land titles system, viewing it as a government way of controlling them and getting money from them (land registration fees). This scepticism may be explained by the lack of a proper communication on the government side as they failed to educate people about the government social policies/programmes. This will be expanded on in section 4.3.1.4. (p. 94).

The cynicism of household farmers about requesting credit against their land titles is also explained by the fear of the risks which can occur in their agricultural activities. One of them said that;

> *It is not even good for us to take bank credit because the weather is unpredictable in our area. One can take credit and invest in agriculture and the rain becomes scarce.*

Then we put ourselves in risk where the bank can come and sell our house because we have failed to pay the credit (Respondent 15, July 2011).

Likewise, in Tanzanian case, farmers were sceptical about the use of their land titles as collateral for getting bank credit fearing the financial obligations that could occur in the case of failing to pay (Hyden 1980, United Republic of Tanzania 1994).

4.3.1.3. Government Support in the LCP

The LCP is a government initiative of Rwanda. According to the Article 7 of the Ministerial order N° 14/11.30 of 21/12/2010, which determines the models of the LCP, the Ministry in charge of agriculture shall provide assistance to local landowners and land tenants. The assistance includes: a) understanding and participating in market-based agriculture, b) crop selection, c) determination of prices, d) provision of inputs, e) loans, f) agriculture sensitisation services and g) facilitation of the sale of the crops to buyers (MINIJUST 2010).

The household farmers of Gisenyi village confirmed that government had been supporting them in the LCP by providing fertilisers and seeds. The fertilisers were to be provided on small credit to be paid back after getting the agricultural income. However, in the first three years (ending by 2010) of the LCP in Gisenyi village, fertilisers were given to the farmers with no fee charged so as to encourage them to join in the LCP.

Another form of government support to the farmers in the LCP (as a key informant from MINAGRI revealed) included making available the store rooms where household farmers could store their agricultural products, mobilising the traders who go in different areas and buy agricultural products and distribute them in different areas, and buying agricultural

products from farmers when the traders are not able to buy all the products. When it comes to selling agricultural products (from the LCP), the government assisted in fixing prices when possible. However, there may be a fluctuation in these selling prices due to different reasons, such as lack of buyers, poor functioning in local market, etc.

The problem of the poor functioning of the local market in the LCP was also found in research conducted in other regions of the country. Huggins (2009) and Ansoms and colleagues (2010) report that the bargaining power of household farmers in the commodity chain is limited. Thus, it allows intermediary brokers to speculate and make high profits at local actors' expense. This problem is partially due to the lack of access to transport, but also related to the household farmers cooperatives which are not forceful.

The household farmers in Gisenyi village acknowledge the government support in the LCP: a functional public store room for agricultural products has been put in place, infrastructure such as roads have been constructed, and regular training in different aspects related to agriculture are provided. However, there are other government supports generally provided in this LCP, though not yet available in Gisenyi village. As MINAGRI key informants confirmed, these include farming machines (on credit), assistance in getting bank loan with 20 percent discount, training in business skills and knowledge (drawing-up a small business plan or project), sufficient store rooms and markets for agricultural products.

Similarly, the government support to the household farmers, in their agricultural development, has been available in Ethiopian case of LCP. The government emphasised on capital-intensive commercial agriculture, and the producer cooperatives took advantage of

government-subsidised fertilisers, improved seeds, and pesticides, purchasing them under favourable credit terms (Brietzke 1976).

Government support in a social programme such as LCP (in rural areas) is of a paramount importance as illustrated by the empirical data from this case study. The development policies including agricultural development would help to reduce poverty and consequently improve the livelihood of poor people (Norton 2004). The LCP, with all the government assistance, has indeed contributed in increasing food productivity (to a certain extent), and in improving lives of the household farmers. Certainly there is still room for improvement in some aspects of the LCP as it will be discussed in the following sections.

4.3.1.4. Household Farmers' Response and Views on the Implementation of LCP

In Gisenyi village (where this study was conducted) the LCP was not initially welcomed by the household farmers. The latter were sceptical about the Land Reform Policy, fearing that their land would be taken away by the government. The government ended up enforcing the policy on the people, however, with no legal punishment, as asserted by key informants from the MINAGRI. The policy enforcement has also been reported by Ansoms (2008), Huggins (2009) and Ansoms et al. (2010).

However, as the household farmers in Gisenyi village experienced the benefits of the LCP, they started to gradually embrace the programme with appreciation. Actually the farmers' reluctance to embrace the LCP at its initial stage could be explained by a lack of proper communication on the government side. The government needed to educate and inform (gradually and properly) the farmers about the LCP at its initial stage, clarifying the benefit

and the goodness of the programme at the rural farmers' level.

The implementation of a social policy such as the LCP demands that the beneficiary be involved from the preliminary phase of the programme. Willis (2005) argues that, one of the key routes in which empowerment is significant to be achieved is through participation. Participation is usually used as an umbrella term to refer to the involvement of the concerned community in decisions about development policies. The beneficiary should be consulted and listened to from the start and not brought through when policy has already been decided.

The farmers' responses confirmed that the LCP has generally made a difference in food security (in Gisenyi village), by increasing agricultural productivity, and opening up ways of getting income to attend to other needs. Section 4.4 (below) elaborates on this point. The general view from key informants about the LCP is that the latter is imperatively needed as one of the key pillars of the economic development of Rwandans. The programme, when properly and fully implemented, provides ways forward in food self-sufficiency, and comes with other benefit such as infrastructure development.

4.4. The Current Agricultural Land Usage and the Household Food Productivity

Situation in the Post 2004 NLP Phase in Gisenyi Village

This study found that, the key achievement of the implementation of LCP in Gisenyi village was the introduction of the new farming techniques which led to the effective agricultural land usage. In this study, all household farmers interviewed acknowledged an increase of agricultural productivity, thanks to the system of monocropping, and the availability of fertiliser and the improved seeds, which are part of the LCP. LC projects are conducted to

consolidate fragmented agricultural properties, as well as dispersed parcels from different farms in order to achieve improvements in the agricultural productivity and in living standards. By consolidating small plots into large scale-farms, the opportunities such as new farming technologies may be made available to the land owners and lead them to improve their situation (Crecente 2002, Hartvigsen 2006, Cay and Iscan 2011).

As explained in the previous sections, the livelihood of 60 percent of the household farmers in this study depends exclusively on the agricultural sector. Based on the empirical data from this research, this section looks at the land usage and the agricultural productivity in Gisenyi village (at household level) following the implementation of the 2004 NLP.

4.4.1. Current Agricultural Land Usage

The 2004 NLP was practically put into realisation following the villagisation process whereby people are sensitised to live in villages (*Imidugudu*). Villagisation was implemented as an initial step in dealing with the issue of land fragmentation. After people were settled in *Imidugudu,* it facilitated the process of consolidating the plots.

As mentioned above, the implementation of LCP introduced the new farming techniques. All household farmers mentioned that the system of monocropping (particularly with the technique of cultivating on the raw) and the availability of fertiliser and the improved seeds, allowed them to increase the agricultural productivity. Moreover, they recognized that, before the LCP they could not measure the benefit expected from their agricultural productivity since they mixed many crops. However, within the LCP, where they cultivate one crop at large-scale, they find it easier to estimate whether they benefit or not.

In their agricultural system within the LCP, all household farmers displayed that they leave their farms fallow. They are also aware of the importance of rotating crops in terms of keeping the soil fertile. However they declared that they are not allowed to rotate since the implementation of the LCP. Gebremedhin and Shwab (1998) argue that crop rotation is important since it breaks weed and diseases cycles. Also, since crop rotation can effectively reduce soil erosion, this avoids the long-term decline in the productive capacity of the land and reduces the non-point pollution that could occur. It also improves soil structure and enhances permeability. Thus, a succession of the same kind of crops on the same piece of ground in LCP may deteriorate not only the ground but it may also hinder the agricultural productivity.

4.4.2. Advantages of Land Use Consolidation

Throughout this study, it was found that there are other advantages that lead household farmers to appreciate the LCP. LC for arable land sustains rural livelihood of farmers by lowering production costs, lowering labour input and removing structural inadequacies (Thomas 1997). This means that, through LC which is implemented by the proficient working conditions, the farmers may be able to optimise their incomes.

In this study, all household farmers interviewed pointed out that, generally their ways of cultivating changed positively. As it was illustrated in the previous sections, the farmers did not consolidate their entire farms. Household farmers are free to cultivate the non-consolidated plots out of the LCP structures. However, this study found that, the knowledge that household farmers acquired through the LCP (especially the technique of cultivating on the raw) was also useful in other parts of their plots which are not consolidated. In their non-

consolidated plots they cultivated many crops and they put each crop in its small portion; which as they confirmed, allows them to increase their entire agricultural productivity.

Household farmers interviewed also stressed that the LCP can prevent their agricultural production from being stolen. One of the respondents revealed that when all their consolidated farms have the same crops, no one is interested in stealing other's crops. The key informant from URUGAGA syndicate also said that the LCP helped the household farmers in terms of reducing the expenses in agricultural activities in different ways. First, before the LCP, farmers used to pay money for the security of their farms and it was expensive because this was done individually. But, within the LCP only one security guard is paid for different farms. Second, farmers buy fertiliser as a group. It means that they can hire transport for bringing fertilisers to their farms together. Third, with LC it is easier to do mechanisation because crops are cultivated at large-scale. In addition, dissemination can be made easily since crops are located in one place.

Furthermore, all household farmers underlined that the LCP implementation allowed them to meet agronomists who trained them on the modern methods of farming. One of the respondents mentioned that before the LCP the farmers who produced coffee and tea were the only ones who could get training from the government agronomists.

4.4.3. Agricultural Products and its Sustainability within LCP

In this study, the household farmers in Gisenyi village expressed that the LCP led to the development of their agriculture which allowed them to increase agricultural productivity. Consolidating small plots in the larger farms which are rationally shaped facilitate the

farmers to make their agricultural activities more effective and beneficial (Grossman 1988). LC should be considered as a mechanism to stimulate food production, develop and improve working and living conditions of people living in rural areas. It should also lessen the expenses of production and increase net income for a farm of given dimension (Lerman and Climpoies 2006:4, Pasakarnis and Maliene 2010). Thus, as mentioned in the literature review, LC projects allowed Kenyan farmers to achieve the highest agricultural productivity increases in Africa in 1960s (Migot-Adholla et al. 1991).

Thus, this study found that the LCP increased their agricultural productivity compared to the situation before the implementation of the programme. The majority of the respondents (90 percent) confirmed this. One of the respondents stated that,

> *Since I came here in Bugesera district in 1987, I have never produced at the high levels like I do today, and the soil was more fertile than today. For us if we have much more agricultural production, it means that the LCP affects our food production positively* (Respondent 2, July 2011).

The increase of agricultural productivity was also confirmed by the key informants. The key informant from CARITAS declared that since household farmers saw that the LCP increased agricultural productivity, they increased the plots allocated to those specific cash crops, and this gave them higher income. Ansoms et al. (2008) in their research found that in other regions of Rwanda, some farmers appreciated monocropping in terms of increasing agricultural productivity.

Besides the increase of agricultural productivity, all household farmers interviewed mentioned that the LCP allowed them to have stores for their agricultural production. After

each agricultural season, they had to take a portion of their harvest to the public food stores. The storage programme was highly appreciated by the farmers for it serves as a backup when their home stores got empty.

During the fieldwork, it was also found that local civil authorities ensure that household farmers stored a portion of their production into the public store. It is planned that household farmers can start requesting for their food at the beginning of the following year (in January). These empirical data suggest that the food storing system, brought by the LCP, gives a sense of food security to the farmers in terms of food availability: orderly management of their agricultural production.

The other point worth mentioning is that some of the household farmers interviewed in this study stated that they only prefer to cultivate in one season per year (from mid-March until mid-June, known as season B) during which there is enough rain in the whole country. However, one of the key informants from local civil authorities revealed that the household farmers are obliged to also cultivate in season A (from mid-September to mid-December) though this period is characterised by short rains. According to the latter key informant, household farmers may refuse to take fertiliser (on credit) since they fear the risks of not getting sufficient harvest in this period.

Though there is a good food storage system, not all farmers meet the standards in their production, and consequently their storage quantity is low and often it may run out before the other agricultural season. This is due to the fact that, since the household farmers of Gisenyi village expect to cultivate during only one agricultural-season per year, the sustainability of their food reserves from one harvest season to another may not be secure. This was confirmed

by some household farmers interviewed (40 percent) who revealed that, although the LCP allowed them to increase the agricultural production, sometimes their food reserves do not sustain till the following season. As household farmers in this village depend almost only on agriculture, their food reserves continue to diminish as they consume without producing for a long period. However, when their food stores are finished, some of them are able to sell their livestock (especially goats) and buy food while others have to go to other places and cultivate for other farmers where they cultivate two seasons per year.

Although 40 percent of the household farmers in Gisenyi village declared that stored food is not sustainable from one agricultural season to the next, the LCP increased their agricultural productivity compared to the situation before the programme. Before the 2004 NLP, the stored food products could not sustain the families till the following agricultural-season for the majority of household farmers (75 percent). Furthermore, since the implementation of the LCP, household farmers in this village do not request for food hand outs. This implies an improvement in terms of availability of food.

4.4.4. Economic Situation of the Agricultural Production Following the LCP Implementation

In Gisenyi village, household farmers witnessed that generally their livelihood improved compared to the situation before the LCP. This is mainly due to the fact that the LCP led to the improvement of market conditions of agricultural produce. Farmers get easily the clients (traders) since they cultivate as a cooperative with the main focus on the high marketable production such as maize. An overall objective of LC projects is to increase the net income from land holdings by increasing the amount of production and decreasing its costs.

Moreover, LC can play an important role in improving rural development. In other words it can strengthen rural economy by promoting broad-based growth, including providing access to markets and infrastructure support (FAO 2003).

With the emphasis on cash crops, Makana (2010) reports that farmers in the areas like Bungoma in Kenya also responded positively to the LC. This led them to become more market-oriented farmers since the forces of commercialisation had penetrated their agrarian economy.

In this study, many household farmers (90 percent) confirmed that the LCP led to the improvement of market conditions of agricultural produce. The fact that the price of maize cash crop is highly marketed with a favourable price, led household farmers in Gisenyi village to increase their income which was not the case before the 2004 land reform where the price of sorghum as their cash crop was lower.

4.4.4.1. Market Situation of the Agricultural Produce

In Gisenyi village, the implementation of the LCP encouraged household farmers to be more involved in marketing their agricultural produce. Some household farmers (40 percent) mentioned that they were now cultivating for sale due to the increase of agricultural products such as maize which was highly marketable. This allowed them to increase their monetary income. One of the respondents declared that he managed to buy a cow and he is building a new house from the agricultural products.

Before the LCP implementation, as confirmed by the key informant from URUGAGA syndicate, it was not easy for a household farmer to hire a lorry to transport the farm produce since he/she does not have much produce for selling. But since household farmers have consolidated plots, they are able to receive demand from a factory interested in buying their agricultural produce. Another key informant from MINAGRI declared that, with the implementation of the LCP, the market context became easy for the traders in agriculture because the latter now knew where to find each agricultural produce, whereas before the LCP, finding agricultural products to buy was time consuming as it required to inquire from different parts of the country.

However, according to the key informant from CARITAS, the idea of market-oriented agriculture is not yet developed in household farmers' mind. They remain at the level of increasing productivity and they still need government assistance in getting market for their agricultural products. Therefore, the majority of household farmers interviewed (60 percent) consider themselves as self-sufficient farmers. They confirm that they do not have the surplus for the market. They can only sell their agricultural products if they need to buy something like clothes, paying medical insurance or other food that they need. In addition, they have to sell and buy livestock which will be sold again when their food stores will be empty.

Although many household farmers are self-sufficient type of farmers, they are actually in the process of being market-oriented farmers. This is shown by the fact that much importance is given to the maize production with the idea that its high demand will lead the farmers to earning high income in terms of money. This was emphasised by the key informant from the MINAGRI who said that the household farmers were now cultivating with the target of marketing their production: maize production as cash crop can ensure a certain viable income

(once sold) to the farmer, enabling the latter to attend to other basic needs or affording to buy other food products she/he needs. The household farmers are becoming gradually aware that the agricultural activities can lead them to economic growth. Thus they can be able to run other economic projects.

4.4.5. Challenges within LCP

While 90 percent of household farmers interviewed appreciate the LCP, they also mentioned their worries about the programme. As mentioned earlier, in the initial stage of the LCP, the household farmers received government support (particularly improved seeds and fertiliser). However, the prevailing challenge mentioned by all household farmers was the delaying of this promised supports (particularly improved seeds) from the government. Consequently, sometimes, the harvest was not satisfying as expected. It is worthy to note that, in Bugesera district, when a farmer delays to cultivate at least one week she/he should not expect to harvest effectively for that season. In addition, household farmers mentioned the lack of government supports such as farming machines, assistance in getting bank loan, training in business skills and knowledge (drawing-up a small business plan or project), sufficient store rooms and markets for agricultural products.

Moreover, the seeds provided by the government to the farmers are sometimes not fresh and so they would fail to grow. The household farmers replaced these seeds, but their agricultural production was significantly low. The other consequence of using such seeds is that the fertilisers were wasted and this impacted on the finances of the farmers (fertiliser fees, and other expenses involved in their agricultural activities). One of the household farmers interviewed revealed that, in 2008 they faced a problem of a food shortage when the maize

product at a large-scale holding became stale. Household farmers were obliged to cut all maize crops since they could not produce anything.

Other challenges faced by household farmers are related to the lack of knowledge in some of agricultural activities. For instance, some household farmers interviewed (30 percent) mentioned that they do not know how to use industrial fertilisers. Hence, they experienced the negatives effects where the use of these chemical fertilisers burned their crops.

The other challenge found in the LCP is the sustainability of the programme once the government support comes to an end. For instance, some household farmers interviewed (25 percent) expressed the incapacity to pay for the fertilisers, and most of them would prefer free fertilisers. The key informant from CARITAS, using the example of fertilisers (provided by the government as subsidy) expressed sentiments of uncertainty in regard to the sustainability of the LCP. This suggests that a long-term plan is imperatively required if the programme is to be effectively beneficial to the population: aspects such as accessibility of fertilisers (industrial and non-industrial) should be looked at.

The key informant from ACORD claimed that the government involvement makes household farmers lose their freedom in their agricultural production. He stated that;

> *The household farmers are controlled in their agricultural activities by civil local authorities. It means that the amount of the produce sold and what a household farmer is left with are counted. Thus, household farmers lose a certain kind of sovereignty somehow. In addition because they are grouped in cooperatives they are not fully independent vis-à-vis their agricultural products* (Informant 7, July 2011).

Consequently, one can argue that this may affect food security of household farmers since they lack some sovereignty in managing their food productivity. In fact, poor household farmers are usually obliged to turn to crops with shorter cultivation and the immediate food needs oblige them to harvest prematurely. However within the LCP, it seems to be a bit prohibited since they are not fully independent. This has been confirmed by the scholar Huggins (2009) who also found the same results in his research in Kirehe district (in Eastern Province), where the communities have been prevented from selling their commodities until instructed to do so by civil local authorities who negotiate their price with businessmen.

In Gisenyi village, all household farmers cited the lack of infrastructures (such as sheets and small machines) for treating maize products. This implies that they do not fully exploit their land in order to increase the agricultural productivity in the LCP. The key informant from the MVP complained that using a hoe delays the household farmers in their agricultural activities. Moreover, Bugesera was characterised by a little rain and this obviously affected their agricultural productivity.

According to the key informant from the MVP, another challenge for the LCP implementation is the way in which people are and have settled. The fact that all household farmers are not yet settled in Villagisation does not facilitate the LCP implementation. It is impossible to consolidate the plots while people are settled in different corners and where many households are surrounded by their small plots. During the fieldwork, it was observed that two household farmers interviewed were not yet settled in villagisation.

Furthermore, household farmers face numerous challenges in their agriculture that are related to the characteristic of Rwanda's soil morphology (very steep slopes). It is speculative

whether the LCP is able to overcome this natural problem and make land more profitable to the household farmers. Since land is scarce, household farmers cultivate the soil which was not supposed to be cultivated. According to the key informant from ACORD, consolidating land (particularly doing mechanisation) will remain difficult as the soil is characterised by high steep slopes. For instance, Kathiresan (2010) in his study found that 16 percent of cultivable soils in North, and West of Rwanda are steep slopes where mechanisation is not applicable.

Another major challenge stated by a key informant from ACORD is related to Rwanda's agricultural vision, which is market oriented: that exportation is being promoted and encouraged. Consequently, in the LCP, the tendency is to focus more on crops which are more marketable and exportable such as coffee, flour, maize, etc. However, this approach may have some negative impacts by reducing the production of staple food that ordinary household farmers need for their daily livelihood. More often than not, in developing countries, agricultural policies tend to promote export crop (cash crops such as coffee, tea, rubber, etc.) production than food production for domestic consumption (Barbier 1987, Govereh et al. 1999).

CHAPTER FIVE: SUMMARY AND CONCLUSION

Introduction

The overall aim of the present study was to assess the outcomes of the land reform policies in Rwanda, and the main focus was to investigate the results of the LCP in household food productivity in Bugesera district of Rwanda. The LCP is incorporated into the NLP, which was officially launched by the Rwandan government in 2004. The research investigated how this NLP (particularly LCP) has dealt with the issue of land fragmentation in Rwanda and the outcomes in terms of improvement of household food productivity. The research was designed and conducted as a case study. A selected number of the household farmers of Gisenyi village in Bugesera district, who are involved in the LCP, constituted a sample of the population in this study. Interviews were conducted to obtain data and information that were used to answer the key questions of the study. This chapter is thus a summary of the whole study. The chapter presents a contextual background to the study (section 5.1) and the key findings of the research, highlighting the relationship between the 2004 NLP and household food productivity (section 5.2). The chapter ends with a conclusive paragraph.

5.1. Summary of Background to the Study

In this study, the problem of food insecurity in Rwanda is seen as the consequence of inadequate land management and lack of a proper and efficient usage of agricultural land. Throughout her history, Rwanda has had land tenure systems that favoured land fragmentation and land scarcity. Place and Hazell (1993), in their study on the relation between indigenous land rights systems and agricultural productivity in Ghana, Kenya and Rwanda, found that the majority of land parcels in Rwanda were acquired through non-market channels, such as inheritance (which is historically the most common system of land

acquisition), gifts, government allocation, and appropriation or clearing of land. These mechanisms led progressively to the land fragmentation and consequently the decline of agricultural production (Clay et al. 1998).

This study highlighted the issue of food insecurity in Rwanda in general and Bugesera district in particular. The Agricultural sector is the backbone of Rwanda's economy. However, the lack of big cultivable land plots (due to land fragmentation) in Rwanda restricted household farmers from producing sufficient food, resulting in household food insecurity. The 2009 CFSVANS (NISR 2009) shows that nationally only 4 per cent of the households had access to 1 hectare or more, 19 percent had less than 0.1 hectares, 37 percent less than 0.2 hectares, and 59 percent less than 0.5 hectares. The poor accessibility to land is also a problem in Bugesera district. Approximately 30 percent of households are landless and another 40 percent owns less than a half-hectare of land (Republic of Rwanda 2007).

This lack of farming land is mainly due to the land fragmentation situation. Land fragmentation is defined by Shipton (1989) and Oppong (2009) as a practice of farming progressively in small parcels of land. Fragmentation may hinder chances for economies of large-scale farming, and crop marketing. It may also hamper mechanisation and make it harder to control losses to crop thieves, pests, birds or other animals.

Land fragmentation is viewed as common issue in Africa. The customary land management rules whereby individuals gain access to land according to their positions within kinship networks and allocations made by customary authorities is viewed as the main factor that led to the fragmentation of land in Africa (Quan 2007). Over time, as Migot-Adholla and Bruce (1994) pointed out, people experienced simultaneous simplification and individualisation of

rights whereby households increasingly acquired broader rights of exclusion and transfer as population pressure and levels of commercialisation increased. Families enjoyed rights of use over different parcels of land. In this trend, family rights were transmitted through prevailing rules of succession, which allowed divisible inheritance.

Chimhowu and Woodhouse (2006) argue that the customary land tenure is seen as an obstacle to development. Therefore, it necessitates a land reform which gives free hold tenure over land and promotes long-term investment through a position of collateral security for credit. In this study land reform is understood as a change of land use procedures with the purpose of good management and rational use of national land resources including consolidation of small plots for more economic and productive use of land as it is stated in the 2004 NLP (MINITERE 2004).

The de Soto property rights concept (2000) formed the theoretical framework of this study. In his book, *The Mystery of Capital*, de Soto (*ibid*) points out that the poor have many assets, but, the problem is that they hold these resources in defective forms such as houses built on land whose ownership rights are not adequately recorded and unincorporated businesses with undefined liabilities. Moreover, the rights to these possessions are not adequately documented and as such assets cannot readily be turned into capital, cannot be traded outside of narrow local circles where people know and trust each other, cannot be used as collateral for a loan, and cannot be used as a share against an investment.

Therefore, for de Soto (*ibid*), the most important aspect of having the property rights is that, it allows people to be able to get credit from the bank for investment since their assets are formally considered as their capital. Property rights imply that when people possess

formalised titles they are aware that the property is under their own legitimate control and consequently have the incentive to invest their intelligence and work in improving it.

In the context of this case study, the de Soto's property rights-outlines provide a conceptual framework that helps to theoretically situate and assess the empirical data of this research, noting that the 2004 land reform programme in Rwanda introduced the legitimised ownership of land and aimed at an effective and efficient land usage system. Furthermore, in order to comparatively contextualise the present study, a brief literature survey on LC in Kenya, Tanzania and in Ethiopia was presented. Lessons from the experiences of these countries were drawn (from the literature) and aided in the interpretation of the research findings.

In 2004, the government of Rwanda embarked on the NLP which incorporated the LCP. The latter was implemented in 2007. On its agenda, this land reform was to establish a land tenure arrangement that allows all Rwandans to gain tenure security and give guidance to the necessary land reforms for good management and rational use of national land resources (MINITERE 2004). However, apart from government reports that indicate the positive side of the policy, there is little empirical evidence to allow a critical evaluation of the outcomes of the LCP in Rwanda in regards to food productivity.

Hence this case study was conducted to investigate the impact of LCP on food productivity in Gisenyi village of Bugesera district (in Rwanda). The study sample was made up of 28 respondents (20 household farmers and 8 key informants). The 20 household farmers consisted of eleven men (representing 55 percent of the interviewed farmers) and nine women (representing 45 percent of the interviewed farmers). All household farmers interviewed are implicated in the LCP. 60 percent of them live exclusively on agricultural

products. On the other hand, 8 key informants interviewed are involved in agro-based development programmes. Bugesera district was chosen because it is among the 8 districts where the implementation of the LCP started (MINAGRI 2011). Documentary analysis, observation, in-depth interviews techniques were used to gather data. Qualitative methods were used for data collection and analysis.

5.2. Summary of the Key Findings

The findings of this study highlight the key points that answer the main research question. Generally the results of this study have shown that the household farmers of Gisenyi village in Bugesera district have increased the food productivity through LCP. Specially, the LCP implementation in Gisenyi village introduced the new farming techniques which led to effective agricultural land usage. The section of findings is divided into two main sub-sections: first section looked at the agricultural land usage and agricultural productivity situation before the 2004 NLP implementation and second looked at the situation of agricultural productivity following the NLP.

Before the 2004 NLP there was no LC system in place, and land management was left to the owner of the land. The traditional inheritance system of land was still valid and each household farmer used his/her own cultivable land as it fit him/her. Moreover, houses were dispersed, which implies also that land was fragmented.

Furthermore, before the 2004 NLP, household farmers in Gisenyi village used the system of intercropping where they could cultivate sorghum, maize, and beans on the same piece of land. Household farmers interviewed affirmed that there was lack of the use of fertiliser and

fallowing system. This inadequate treatment of land led to insufficient agricultural production.

Due to the insufficient agricultural production, the household farmers in Gisenyi village could hardly afford to care for their respective families in terms of other needs such as clothing, proper house, schooling of their children, etc. The livelihood of most Rwandans in rural areas like Gisenyi village is agriculture-dependent (Buruchara et al. 2002), 80 percent of the household farmer respondents value their annual monetary income (from agricultural production) prior to the NLP in terms of assets. They would then buy livestock (to be sold at a future date) as a strategy of saving for the future. This unstable income was however described by the respondents as insufficient due to the poor agricultural production.

In a situation where people are not able to sustain themselves with regard to food security (sufficient food), government policies that can pragmatically address the underlying causes of the situation and bring a change are a requisite. A state may have responsibility and obligation to provide mechanisms and support that allow all its citizens to alleviate poverty and enjoy the fundamental human needs, which include food availability (Rapley 2007).

In order to overcome the challenges related to inadequate agricultural land management and which seems to be the main cause of insufficient food productivity, the government of Rwanda elaborated the 2004 NLP which includes a LCP. The NLP's main objective is to establish a land tenure system that guarantees land tenure security for all Rwandans, providing guidance to the necessary land reforms, with a view to proper land management and rational use of national land resources (MINITERE 2004). The NLP defines the LCP as a procedure of putting together small plots of land, in order to manage the land and use it in an

efficient uniform manner, so that the land may give more productivity (Gazette of the Republic of Rwanda).

According to the Article 7 of the Ministerial order N° 14/11.30 of 21/12/2010, which determines the models of the LCP, the Ministry in charge of agriculture shall provide assistance to local landowners and land tenants. The assistance includes: a) understanding and participating in market-based agriculture, b) crop selection, c) determination of prices, d) provision of inputs, e) loans, f) agriculture sensitisation services and g) facilitation of the sale of the crops to buyers (MINIJUST 2010).

The results of this study show that the 2004 NLP implementation provided household farmers of Gisenyi village with opportunities to improve their everyday lives. All household farmers in Gisenyi village registered their land, and received land titles. In their responses, the household farmers emphasised that the land titles served not only in the LCP implementation, but also in other aspects of their everyday lives, such as reducing land conflicts and being able to approach the banks for loans. 75 percent of the farmers stated that with land titles they were able to confidently approach the banks for loans while 60 percent mentioned that the LCP implementation helped in reducing land conflicts.

Household farmers of Gisenyi village confirmed that government had been supporting them in the LCP by providing fertilisers and seeds. The fertilisers were provided on small credit to be paid back after getting the agricultural income. Other government support systems to the farmers in the LCP (as a key informant from MINAGRI revealed) included making available the store rooms where household farmers could store their agricultural products, mobilising the traders who act as brokers, and buying agricultural products from farmers when the

traders are not able to buy all the products. Moreover, the government assisted in fixing prices when possible, providing regular training in different aspects related to agriculture and constructing infrastructure such as roads.

However, there are other forms of government support listed in the LCP plan that are yet to be provided in Gisenyi village. As MINAGRI key informants confirmed, these include obtaining farming machines (on credit); assistance in getting bank loan with 20 percent discount; and, training in business skills and knowledge (drawing-up a small business plan or project). However, the findings of this research show that the LCP in Gisenyi village, with all the government assistance, has indeed contributed in increasing food productivity (to a certain extent), and in improving lives of the household farmers though there is still room for improvement in some aspects of the LCP.

The farmers' responses (90 percent) confirmed that the LCP has generally made a difference in food security (in Gisenyi village) compared to the pre-2004 NLP situation, by increasing agricultural production, and opening up ways of getting income to attend to other needs. Before the 2004 NLP, the stored food products could not sustain the families till the following agricultural-season for the majority of household farmers (75 percent). But within LCP, only 40 percent of the household farmers in Gisenyi village declared that stored food is not sustainable from one agricultural season to the next. Moreover, since the implementation of the LCP in Gisenyi (2007), there has been no case of food aid request as prior to the LCP. This implies an improvement in terms of availability of food.

Moreover, many household farmers (90 percent) confirmed that the LCP led to the improvement of market conditions of agricultural produce. For instance, the maize product as

a cash crop is currently highly marketed and this enabled household farmers in Gisenyi village to increase their income which was not the case before the 2004 NLP. According to FAO (2003), an overall objective of LC projects is to increase the net income from land holdings by increasing the amount of production and decreasing its costs. LC can also play an important role in improving rural development.

In terms of agricultural land usage and productivity, the implementation of LCP introduced the new farming techniques which allow them to boost their agricultural products. All household farmers acknowledged an increase in agricultural production due to the monocropping system (with the technique of cultivating on the raw), and the availability of fertiliser and the improved seeds. Moreover, household farmers underlined that the LCP implementation allowed them to meet agronomists who trained them the modern farming methods.

Other LCP advantages acknowledged by the Gisenyi farmers included protection of their agricultural production. One of the respondents observed that since in the LCP all farmers cultivate the same crops, occurrence of theft was minimal unlike the way it used to happen before the LCP implementation. The key informant from URUGAGA syndicate also added that the LCP helped the household farmers in terms of reducing the expenses in agricultural activities in different ways: hiring only one security guard for the consolidated farms; cutting the cost of fertiliser transportation (since they buy fertilisers and transport them as a group); with LC it is easier to do mechanisation because crops are cultivated at large-scale.

Apart from these remarkable improvements that the LCP had on the livelihood of Gisenyi farmers (particularly a noticeable increase of food production), the research also highlights

some observed weak aspects of the LCP. This study found that in the LCP implementation process, NGOs were not initially consulted in the preliminary studies of the programme, and they were merely encouraged to support the LCP process technically and as facilitators. It is possible that consulting NGOs could have speeded up the implementation process of the LCP and opened up other aspects and areas to be explored for the success of the programme. As Ansoms (2008) points out, in preliminary studies of a society-oriented programme, civil society organisations have the capacity to give a voice to the population's feedback upon national ambitions and policies; and this can help in designing a reality-based or context-based implementation plans for the policy under consideration.

The study also found that there was a lack of proper communication on the government side, to educate and inform (gradually and properly) the farmers about the LCP at its initial stage, clarifying the benefit and the goodness of the programme at the rural farmers' level. This led to the farmers' reluctance to welcome the LCP at its early stage. The implementation of a social policy such as the LCP demands that the beneficiary be involved from the preliminary phase of the programme.

The farmers in Gisenyi village pointed out that the government sometimes delays in delivering the promised support systems such as improved seeds and fertiliser. This delay negatively affects their farming plans and consequently their agricultural productivity. There are cases when the seeds provided by the government are sometimes not fresh and cannot grow, which subsequently has a negative impact not only on food production but also on the farmers' finances (fertiliser fees, and other expenses involved in their agricultural activities). The other aspects (in LCP) that still need improvements include modern technology that can assist in farming and in crops products treatment, expansion of the markets (for agricultural

products) by building more modern shops and attracting more buyers.

Conclusion

The LCP has generally contributed in increasing food productivity and in improving lives of the household farmers in Gisenyi village. Evidence from this study displayed that 90 percent of household farmers improved their livelihood through the implementation of the LCP. The general view from key informants about the LCP is that the latter is imperatively needed as one of the key pillars of economic development of Rwandans. However, the present study found that the LCP is still in its early stages, and the currently main challenges include the lack of advanced technologies such as machines for the farmers to improve more on the agricultural products. On the other hand, the findings of this research suggest that, the LCP, properly and fully implemented, will highly enhance food self-sufficiency situation in Rwanda, improving also the livelihood of rural areas through other benefits such as infrastructure development.

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ANNEX A: IN-DEPTH INTERVIEW GUIDE

1. Questions to the Household Farmers

1.1. General Questions

1. Name

2. Sex

3. Size of household

4. How many in your household are farmers?

5. Economic activity: a) Full-time farmer

b) Part-time farmer

1.2. Questions for the Pre-2004 NLP Phase:

1. What approximately was the size of your own farm before the 2004 NLP?

2. What type of crops did you normally cultivate?

3. What was the average size of your harvest? Was the output high or low?

4. What was your main economic crop?

5. What kind of problems did you often encounter in your agricultural activity?

6. What methods were you using in your agricultural activity?

7. What are materials did you use in your farming activity?

8. Did you use fertilisers in your agricultural activities?

9. Have you ever faced the problem of food crisis?

10. Have you ever received some food assistance?

11. Briefly comment on the monetary gain made with respect to farming.

12. How was the state of your food store during the periods of non-agricultural seasons?

13. a) Has the government been supporting your agricultural activities before LCP?

b) If yes what kind of support have you received from the government?

1.3. Questions for the Current Situation after the LCP Phase:

1. What is the size of your consolidated land?

2. Briefly discuss what you understand by LCP and why it is necessary

3. What are your opinions about LCP?

4. How has it affected your food production? Explain.

5. What kind of food crop you cultivate in LCP?

6. Is it the crop you have been cultivating or it was imposed within the LCP?

7. How do you get other food production apart from those produced within LCP?

8. How did LCP affect the diversity in your food production?

9. What are the materials are you using in your farming activity in LCP?

10. Do you practice crop rotation? If yes, do you find it useful for your agricultural activities?

11. Do you have food reserves? Has LCP assisted in agricultural development in your area? Explain.

12. Has agricultural productivity increased due to the LCP? Explain

13. Do you find your agricultural activities different from that before the LCP? Explain.

14. Does your agricultural products give you benefit in terms of money? If yes how can you value it per year?

15. How do you find your agricultural productivity within LCP?

16. a) Do you receive some food hand outs? If yes, from where?

b) How useful are they in meeting your subsistence requirements?

17. What are the supports do you receive from the government in your agriculture?

18. What do you think that must be done to improve your agricultural productivity?

19. Are you able to provide with food adequately?

20. Has your land been legally registered?

21. Do you find it necessary for the government to protect your land through land titles?

22. Has LCP led to credit access from the bank? Explain.

23. How is the state of your food store during the periods of non-agricultural seasons?

24. Do you think that you are farmers for food security household or for the market?

25. What are the problems do you encounter in LCP?

26. Is there someone whose land has been taken away because she/he does not implement the LCP as expected?

2. Questions for the Government Agents (MINAGRI):

1. Briefly comment on LCP process.

2. What basic role does the government play within the LCP?

3. What forced the government to adopt for the LCP?

4. How does LCP get implemented?

5. Has it been successful as mandated? If not, what are the challenges?

6. What kind of public response received when this programme was introduced to the household farmers?

7. How has LCP improved household food productivity?

8. What are the available support and assistance to the farmers through LCP?

9. How does government assess improvement in agricultural productivity through the LCP?

10. How do the farmers get access to the market for their agricultural production?

11. What do you think that must be done to further improve household food security?

12. What are the pro and cons of the LCP?

3. Questions for Civil Local Authorities:

1. What are your opinions on the LCP?

2. What role have local authorities played in the implementation of the LCP?

3. What is your collaboration with the famers in the LCP?

4. Do you find that LCP has been successful? Does it have full local support?

5. What impact has it brought to agricultural sector in this village?

6. Do the farmers use the rotation and fallow system?

7. Is there any support offered by local authorities to the farmers involved in the LCP? Explain

8. What are the disadvantages and advantages of the LCP?

9. Has LCP increased agricultural productivity in this village? Explain.

10. How do the farmers manage to get other food production while they supposed to cultivate one crop in the LCP?

11. Do you think that LCP has improved household food security?

12. What kind of problems do the farmers face through LCP?

13. What other measures could be installed to further improve household food productivity?

4. Questions for NGOs Representatives:

1. What are your opinions on LCP?

2. What role have NGO’s played through LCP?

3. What are your major activities in this programme?

4. Did you find a case of severe food shortages in this village before or after LCP? What about Bugesera district?

5. a) Has your organization been involved in food hand outs in Bugesera district before or after the implementation of the LCP?

b) If yes what types of food assistance does the organization offer? And how do you assess the value of your food donation to a household?

6. a) Do you think that LCP has improved household food productivity?

b) What role does the organization play in improving food productivity?

7. Does your organization see LCP as a comprehensive programme? Explain

8. What challenges are there within the LCP? What areas should be improved?

ANNEX B: LOCALISATION OF BUGESERA DISTRICT

