

# **Role of farmers' participation in Land Use Consolidation in Rwanda: From principles to practice**

**Pierre Damien NTIHINYURWA, Rwanda and Fahria MASUM, Germany**

**Key words:** land use consolidation, farmers' participation

## **SUMMARY**

Land Use Consolidation (LUC) in Rwanda began to be implemented in 2008 with the objectives of increasing agriculture production, food security and improving rural livelihoods. It has been implemented to some extent in all districts of Rwanda, and continues to expand to additional areas. In spite of its growing interest, different researches at different times reported inefficiency in the policy implementation and lack of public participation in the process. Hence, the main objective of the study is to evaluate the role of farmers' participation in implementation of LUC policy.

The research was conducted in 4 villages representing 4 provinces of Rwanda. The findings have shown that there is a big gap between the principles and their implementation. The implementation process has been found to use compulsory and forced participation of local farmers by local authorities whereas the law stipulates that voluntary participation should be executed based on negotiations and democratic principles.

The research recommends the involvement of farmers in decision making on the choice of crops to grow and move from informative level of participation to involvement and collaboration level. This requires a bottom up approach in the implementation process instead of existing top down one. The study confirms that the comprehensive land consolidation has a prospect to be an effective solution to cope with land ownership and land use fragmentation problems in Rwanda.

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## **1. INTRODUCTION**

Rwanda is a small hilly land locked and the highest densely populated country in Africa. Due to topographic nature the country earned the name 'Land of a Thousand Hills'. The country has 462 population on an average per square kilometer with large and steadily population growth rate of 2.8% (recorded in 2013) and high scarcity of land (Index Mundi, 2013). Its economy is largely agrarian where more than 80% of the projected population of around 11.4 million on an area of 24,700 square kilometers lives from subsistence agriculture in rural areas (Index Mundi, 2013; NISR, 2015).

Although about 79% of the country's land is classified as agricultural, only 11% of the land represents permanent crop land. The remaining agricultural lands are covered with forests, marshlands and marginal lands in the hillsides where permanent and routine cultivation of crops are not tenable. Of the total arable land of 2,294,380 hectare (ha), 1,735,025 ha is cultivated with food and cash crops and the remaining represents pastures and bushes (Kathiresan, 2012; Mbonigaba and Dusengimana, 2013). This leads to high fragmentation of land distribution where about 36% of the households own 6% of farm lands, with an average of 0.11 ha. 30% of households own 25% of farm lands with an average of 0.6 ha while 24% of households own 70% of farm lands with an average of 2 ha (PSTA II, 2009 quoted in Kathiresan, 2012; Mbonigaba and Dusengimana, 2013). The national average holding of 0.76 ha is generally divided into 4 to 5 small plots, often in multiple locations. Such multiple holdings are valued by Rwandans since they can diversify their crop production in the different locations and thus provide protection against natural risks and unbalanced nutrition even though it leads to low agriculture productivity (Kathiresan, 2012; Mbonigaba and Dusengimana, 2013).

Land in Rwanda is the most valuable, productive and contested asset due to its scarce nature and multiple competitive interests in it. Hence, its proper management is a must. Several reforms and policies are under implementation in Rwanda. The Organic Land Law sets minimum plot size for agricultural land to be subdivided and it prohibits the subdivision of a parcel of land which leads to small parcels of less than 1 ha in size for each of them. It encourages the collective use of such land to reduce the adverse effects of fragmentation and endorses the consolidation of the use of small plots of farm lands in order to improve land management and agriculture productivity (GOR, 2005). Among these reforms, Land Use Consolidation policy or consolidation of use patterns enunciated in 2004 and started in 2008 as a main pillar of Crop Intensification Program (CIP) initiated in 2007 by the Government through the Ministry of Agriculture and Animal Resources (MINAGRI). The key objective of the policy is agricultural transformation within the context of Economic Development and Poverty Reduction Strategies (EDPRS) and the Country's Vision 2020 which stipulates social transformation through shifting from such subsistence farming to a market oriented agriculture as embarked in the Millennium Development Goals (MDGs) (Kathiresan, 2012).

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The term ‘Land Use Consolidation’ is new in the field of land management. Although many people confuse it with the term ‘Land Consolidation’, these two terms do not have many similarities. Different reports of Government and Development Organizations, Land Consolidation Ministerial Order (2010) in Rwanda and relevant research (i.e. Kathiresan 2012) tried to explain Land Use Consolidation (LUC) as a tool of land management which is an integral part of land consolidation. In Rwanda it is explained as a policy in which farmers in a given area with closed parcels grow the same priority crops on a minimum size area of 5 ha in a synchronized manner on the provision of subsidized inputs by the government while the boundaries and rights on parcels remain intact.

In Rwanda LUC is a large-scale initiative covering approximately 13% of the total cultivated land (recorded in 2011) with participation of approximately 40% of the farmers in the country (Kathiresan, 2012). It has been implemented to some extent in all districts of Rwanda, and continues to expand to other parts of the country. Farmers retain individual ownership of their parcels under LUC, but agree to consolidate aspects of their operations within the program (USAID 2007, 2014). LUC also entails shift in patterns of cultivation for participating farmers.

Traditionally, Rwandan farmers practice mixed crop farming. A single farmer can mix up to ten crops in less than one hectare of the farm plot (Takeuchi and Marara, 2009). Under LUC however, participating farmers agree to grow a single priority crop that has been identified by MINAGRI as best suited to local conditions and consistent with Rwanda’s overall agricultural strategy. Priority crops include beans, maize, irish potatoes, cassava, wheat, rice, soybean and banana (Kathiresan, 2012).

Although the available data from government reports indicate considerable gains in yield and productivity (Mbonigaba and Dusengemungu, 2013), different researches found it to be inefficient (in terms of process, goals, time and effort involved), since there is no proof that it has contributed to the poverty reduction and food security while people were suffering in different periods from insufficient food and non-balanced nutrition as a result of imposed mono-cropping (Musahara et al., 2014).

Different researchers also found a trend of gap between land use consolidation principles and their implementation since farmers are imposed by the local authorities to grow a certain type of crop, while in Article 14 of Ministerial Order n°14/11.30 of 21/12/2010 on Land Consolidation Models in Rwanda stipulates the implementation based on negotiations among all stakeholders including farmers in a democratic and participatory way along with the voluntary participation of farmers and private investors (Huggins, 2012). For this, farmers’ participation in the land use consolidation practices has been put into question. Therefore, the main aim of the research is to evaluate the role of farmers’ participation in land use consolidation practices in Rwanda and to propose how to improve farmers’ participation for ensuring efficiency of land use consolidation practices.

## 2. LAND USE CONSOLIDATION: FROM RWANDAN PERSPECTIVE

Though land consolidation is not a new concept and has been implemented in different countries for a millennia, there is no common definition of it as it varies from context to context. However, it is generally known as a process of arranging the parcels in order to make them more productive and to reduce the adverse effects of fragmentation. According to Bullard (2007), land consolidation is generally defined as simple reallocation of parcels to overcome the effects of fragmentation. According to FAO (2003) there are four approaches to land consolidation.

- i. **Comprehensive land consolidation** which includes the re-allocation of parcels together with a broad range of other measures to promote rural development. Examples of such activities include village renewal, support to community-based agro-processing, construction of rural roads, construction and rehabilitation of irrigation and drainage systems, erosion control measures, environmental protection and improvements including the designation of nature reserves, and the creation of social infrastructure including sports grounds and other public facilities.
- ii. **Simplified land consolidation** which optimizes conditions in the agricultural sector through the re-allocation or exchange of parcels, and the provision of additional lands from land banks. These simplified projects are often combined with the rehabilitation of infrastructure and sometimes the provision of minor facilities.
- iii. **Voluntary group land consolidation** which is entirely voluntary. All participants must agree fully with the proposed project. As a result, voluntary projects tend to be small, and voluntary consolidation tends to be best suited to address small and localized problems.
- iv. **Individual land consolidation** which can take place on an informal and sporadic basis. The state is not directly involved and so these initiatives do not include the provision of public facilities. However, the state can play a significant role in encouraging consolidations that improve agriculture by promoting instruments such as joint land use agreements, leasing and retirement schemes.

Practices of land consolidation are found today in Germany (Flurbereinigung), the Netherlands (Ruilverkaveling), France (Remembrement), Belgium, Luxembourg, Austria and Switzerland, as well as in Finland (Uusjako), Norway, and Sweden (Fastighetsreglering). There has been considerable practice of land consolidation in Eastern European countries after political reform in socialist system that had resulted in fragmented property right. In Western Europe by the early 1990s land consolidation involved a quarter of all cultivated land which is in excess of 38 million hectares of agricultural land (Vitikainen, 2004 quoted in USAID 2014). Though the aim of land consolidation varies from country to country, it is considered as a rural development instrument which is not only aimed at agricultural production but also at improving social, economic and cultural aspects.

In Rwanda according to the Organic Land Law No. 08/2005 of 14 July 2005, Land Consolidation is ‘*a procedure of putting together small plots of land in order to manage the land and use it in an efficient manner so that the land may give more productivity*’. Further, the Ministerial Order of 21/12/2010 Determining Models of Land Consolidation and Its Productivity, defines land consolidation as *the unification of land parcels with an estimated easier and productive farming than the fragmented plots*. Both definitions emphasize on joint cultivation of large areas and have nothing to do with land tenure.

The Article 5 of the Ministerial Order n°14/11.30 of 21/12/2010 defines three kinds of general models of land consolidation for its farming and productivity:

- **Farming contract:** The terms of the farming contract shall be negotiated between farmers and the buyer. The Ministry in charge of agriculture may facilitate the negotiations to ensure that both parties come to an agreement. Any individual farmer shall retain all the reserved rights on his/her plot.
- **Cooperative farming:** Cooperative farming shall be established in accordance with the Law on Cooperative Societies in Rwanda.
- **Farming Corporation:** It shall be established in conformity with all applicable laws relating to the corporations and entities with legal personality. Investors may contribute cash to the farming corporation as shares such that the farmers and investors own shares in a single corporation, or farmers can own a corporation based on their land, while investors on the other hand may own a separate corporation that provides processing, marketing, transportation or other services. In such cases, farmers and investors shall be stakeholders who jointly enter into an operation agreement.

In the Rwandan context, the term *Land Consolidation* and *Land Use Consolidation* are often used interchangeably in law and policy. The Ministry of Agriculture and Animal Resources (MINAGRI) as a main stakeholder use the term Land Use Consolidation (LUC), while the Ministerial Order n°14/11.30 of 21/12/2010 introduces Land Consolidation Models in Rwanda. The Official Gazette of 16/06/2013, Article 30 of the Law Governing Land in Rwanda used the term ‘Land Use Consolidation’ undertaken for purpose of optimization of productivity. In USAID funded land projects in Rwanda, it is known as ‘farm land use consolidation’. All these terms only refer to the consolidation of the use of farm land where all farmers with closed parcels grow the same priority crop in a synchronized way.

Though Land Use Consolidation is often considered as a part and special form of land consolidation (i.e. Konguka 2003) and apparently these two terms have some similar objectives, in practice nothing in common with regard to the activities involved. On the one hand, LUC process in Rwanda does not include restructuring of ownership, size, shape, and location of land parcels as land consolidation process does (Table 1). On the other hand, Land Consolidation does not include cultivation of priority crops by farmers as it is done in Land Use Consolidation.

Table 1: Comparison of objectives of land (use) consolidation in Europe and Rwanda

Objectives	Finland	Germany	The Netherlands	Sweden	Rwanda
Improvement of agricultural land division	xxx	xxx	xxx	(x)	xx
Improvement of forest land division	xx	(x)	(x)	xxx	0
Improvement of property division in village centers	x	xxx	xxx	0	0
Reallotment of leasehold areas	x	xxx	xxx	x	0
Enlargement of the farm size	xx	xxx	xxx	x	xxx
Land use planning in village centers	x	xxx	xxx	0	xxx
Acquisition of land for municipal/state in village centers	0	xx	xx	0	0
Readjustment of building land	x	xx	xx	0	0
Improvement of road network in the land consolidated area	xx	xxx	xxx	x	0
Improvement of drainage networks in the land consolidated area	xxx	xxx	xxx	x	0
Implementation of environmental and nature conservation projects etc	x	xxx	xxx	x	0
Promotion of regional development projects	x	xxx	xxx	x	0

Source: Musahara (2014)

Therefore, the authors argue that there is no reason for land use consolidation to be considered as a part of land consolidation; rather it is a special type of land use management tool since no single activity involved in land use consolidation is a part of land consolidation. Based on the activities done in LUC in Rwanda, it can be referred also as ‘Crop Consolidation’.

### 3. MATERIALS AND METHODS

The research was conducted in 4 villages selected from 4 provinces in Rwanda (Map 1). The villages are NGOMA (Rutsiro district in Western Province), NYIRAMUYENZI, (Musanze district in Northern Province), MUNINI (Nyamagabe district in Southern Province) and GISUNZU (Kayonza district in Eastern province). The 4 provinces represent different Agro Ecological Zones

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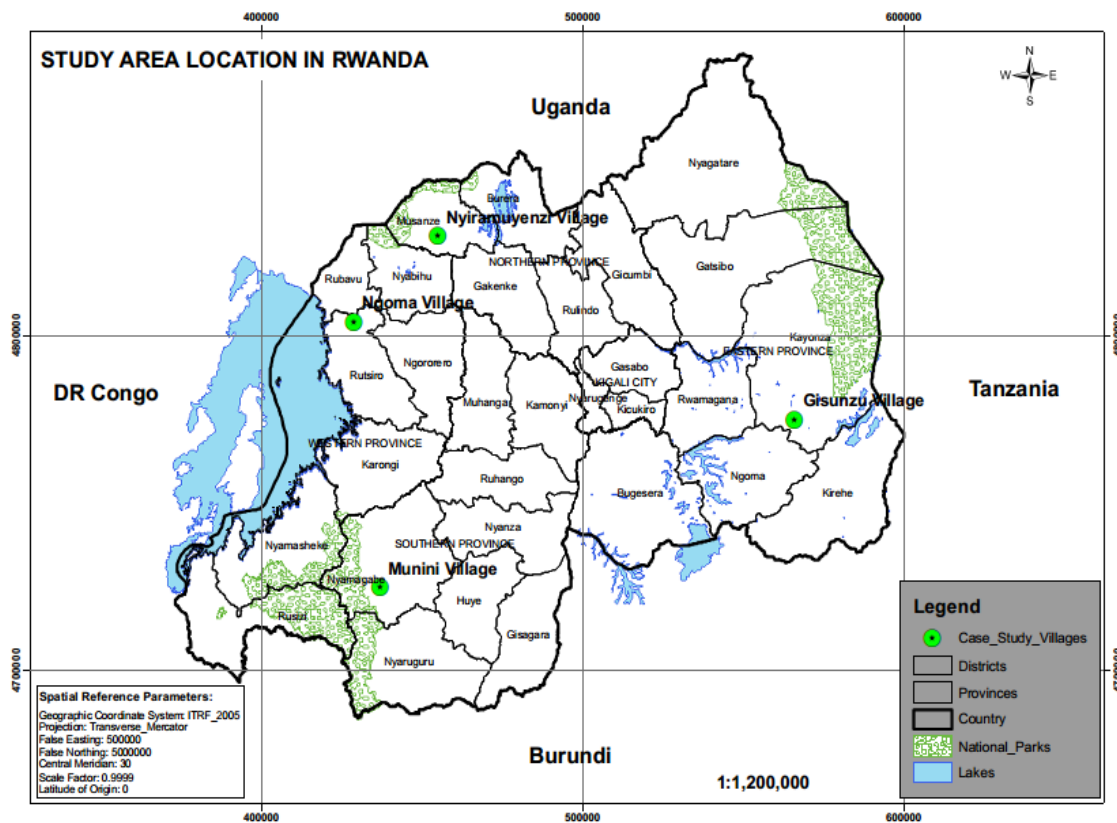
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(AEZ) established by the Ministry of Agriculture and Animal Resources, where LUC program was undertaken. The researchers decided to select 4 villages from 4 provinces as they represent different priority crops production. Furthermore, the case studies were chosen considering the nature of the research objectives which intended to evaluate the process of LUC and role of farmers in LUC implementation at country level. The results from the study are being considered as representative of the whole country but specifically reflect the situation in the areas of study.

With regard to the nature of research, both primary and secondary data were collected. Primary data were collected through household survey in 4 villages and semi structured interviews with key respondents (government officials and LUC researchers/experts). In total, 86 respondents from 86 households were randomly interviewed which represent 15% of total households in 4 villages. In addition, 7 key respondents were purposively selected and interviewed including 4 local government officials (2 sector agronomists and 2 cells agronomists), 1 national government official (Head of the Department of Crop Intensification and Food Security in Rwanda Agriculture Board) and 2 researchers/experts (Chief of Party of USAID Land Project in Rwanda and a university professor). Key informants were asked questions about current LUC implementation procedure and involvement of stakeholders and farmers' participation, level of efficiency of LUC program, and measures to improve the efficiency of LUC program. Secondary data collection included review of the existing literature (i.e. Government Laws, reports, and scientific papers) relevant to LUC program.

Map 1: Location of case study areas



Source: Authors

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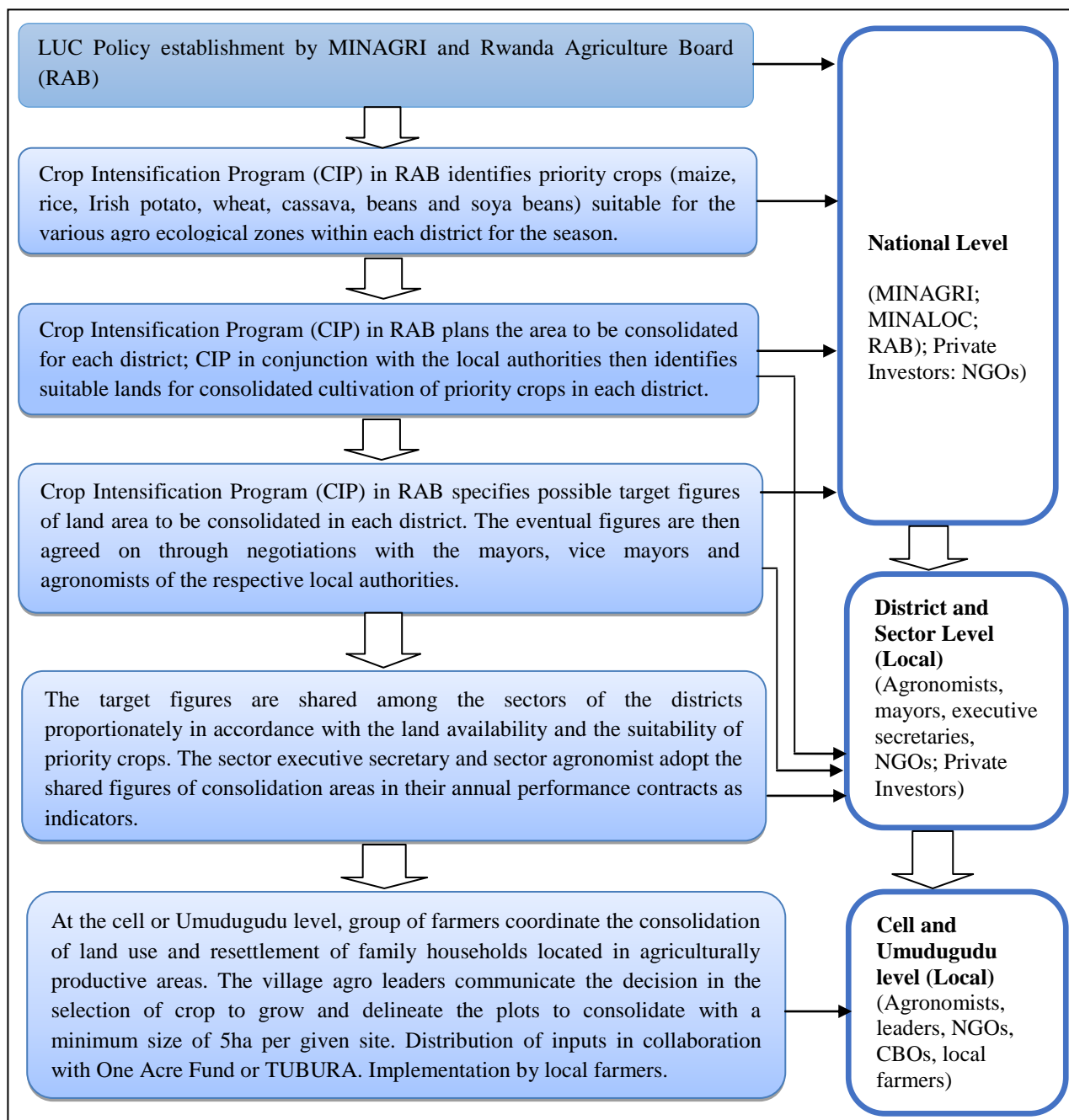
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## 4. RESULTS AND DISCUSSION

### 4.1 LUC implementation process

The field study confirms that the Ministry of Agriculture and Animal Resources (MINAGRI), Rwanda Agriculture Board (RAB), Ministry of Local Government (MINALOC) and local authorities at district, sector, cell and village level, private investors, NGOs, community based organizations (CBOs) and local farmers are involved in LUC process as stakeholders.

Figure 1: LUC implementation process and stakeholders' involvement



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The head of *Umudugudu* (village) or a farmer is selected to lead the team of farmers together with other two selected farmers responsible for monitoring the use of farm inputs delivered by MINAGRI. The MINAGRI-CIP staff, local government authorities, agronomists and *Umudugudu* leaders are responsible for mobilizing the farmers in implementing land use consolidation policy.

District and sector agronomists facilitate the process to ensure on time implementation of LUC. Service providers attached to the Rwanda Agriculture Board (RAB) mobilize farmers to use farm inputs, prepare land at the right time, and other follow-up farming activities including product marketing. The research confirms that LUC process follows top-down approach. The evidence from local authorities confirms that as the target figures are fixed and captured in ‘performance contract’ (Target Based Development locally known as *imihigo*) through negotiation with district authorities, local people are forced to grow the priority crops chosen for them at national and district level.

#### **4.2 The gap between LUC principles and their implementation**

Land Consolidation Ministerial Order n°14/11.30 of 21/12/2010 addresses the role of farmers’ participation in LUC process. This was specifically mentioned in the Article 14 as

*‘To determine the possibilities of encouraging farmers and private investors to voluntarily participate in the program and to support it’.*

It further stipulates

*‘To apply democratic principles, use of consultative methods on any issue to be tackled and provide avenue for members of the community to express their comments on various programs’.*

However, the research found that the above principles were not applied in practice since the implementation of the policy was found to be compulsory with a forced participation of local farmers in the program. The field study revealed that 86% of total respondents (farmers) were forced to participate in LUC implementation and to grow priority crops. During survey it was also reported that the farmers who refused to grow the priority crops were forced to pay the penalties of 2000 Rwf in some cases which was also confirmed by one of key informants at local level.

The research also managed to find out that local authorities do not have the same understanding of concepts and objectives of Land Use Consolidation as MINAGRI and RAB have. Local authorities are directed by the target driven system which put emphasis on ‘product’ than ‘process’ and ultimately forces local people to grow the priority crops in order to meet the target figures of ‘performance contract’ in the respective areas. These findings reveal the big gap between the land use consolidation principles and their implementation.

#### **4.3 Level of farmers’ participation in LUC formulation and implementation**

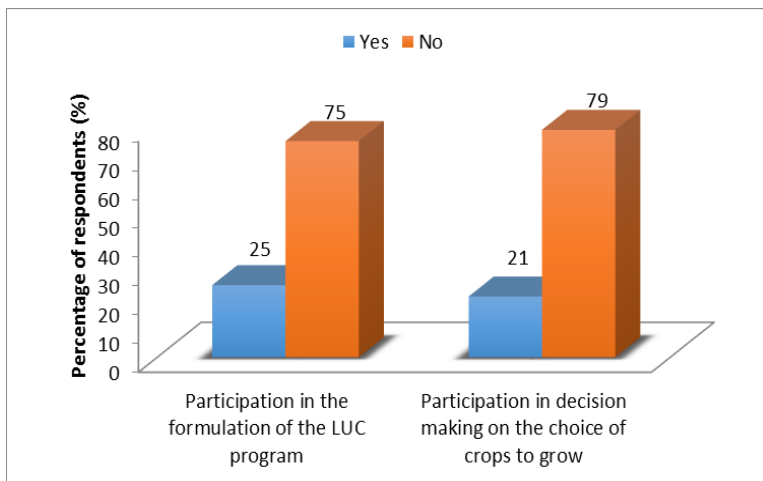
Figure 2: Level of farmers’ participation in LUC formulation

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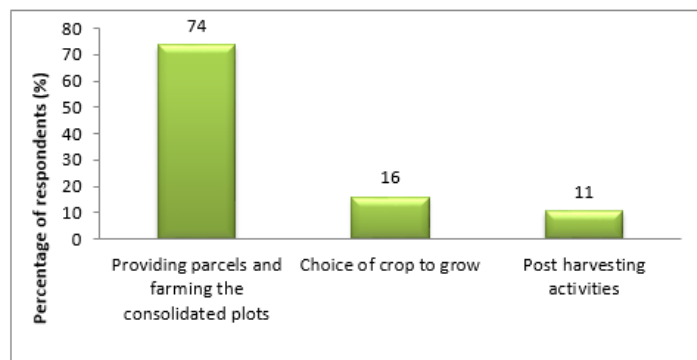


Source: Field study

The results showed that there was no active participation of farmers in the formulation of LUC program and in the choice of crops to grow. They were only informed by the local authority about the new program to be undertaken and crops to grow. The farmers received instructions for the implementation as well. The figure 2 shows the level of farmers' participation in the formulation of LUC policy and in the choice of crops.

Figure 3: Level of farmers' participation in LUC implementation

The research findings further reveal that farmers' participation in the LUC implementation is only limited to the farming the consolidated plots, since 74% of the respondents admitted that. Their role in the choice of crops to grow and participation in post harvesting activities was very limited.



Source: Field study

From findings, the problem of confrontation or overlap of individual's right and state's right over the land was raised. The Organic Land Law, 2005 (revised in 2013) gives the state the responsibility and the right of managing land with an objective of economic development and social welfare. On the contrary, along with right to possess and sell land the 'Bundle of Land Rights' gives the private land owner to enjoy all other rights including right to access and use land in various ways; to enjoy the benefits of those uses; to exclude others from using; or to dispose of by will (di Robilant, 2013). As LUC follows a target driven top down approach, farmer's right to use and manage land is violated. Huggins (2012) in his research also critiques land use consolidation in Rwanda as an attempt by the government to exert state control over agricultural land.

#### 4.4 Level of farmers' satisfaction with LUC policy and priority crops

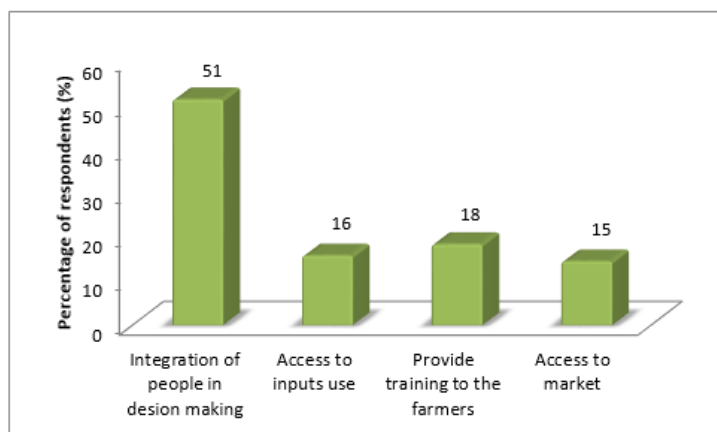
This study further examines the performance of land use consolidation in terms of rural farmers' levels of satisfaction. The research reveals that most of the local farmers are not satisfied with the LUC policy. 34% and 5% of the respondents are reported 'unsatisfied' and 'very unsatisfied' respectively with present LUC policy whereas 16% and 20% are found satisfied and very satisfied respectively. 25% of the respondents have reported neutral to negative feelings about LUC policy.

With regard to the level of satisfaction with priority crops, most of the respondents (62%) reported to be not satisfied with chosen crops to grow. The prioritized crops were maize and beans in Ngoma; maize, cassava and soya beans in Gisunzu; irish potato, maize and beans in Nyiramuyenzi; and maize, wheat and beans in Munini. The crops to grow were selected by the cell and sector agronomists. The respondents argued that the chosen crops are not suitable to grow (considering soil condition, weather and cultures) in their respective area and not profitable for them. Most of them expressed their interest in growing sorghum, banana, sweet potatoes grand nuts, peas which are considered non-priority crops by the local authority.

#### 4.5 Measures to improve the efficiency of LUC program

Farmers were asked what measures should be undertaken to improve their participation in LUC process and LUC efficiency. The figure 14 below shows the suggested measures by local farmers.

Figure 4: Farmers' opinion on improving LUC program



Most of the farmers (51%) believe that LUC should be participatory. Therefore, need for farmers' involvement in decision making process was highly emphasized. The study further reveals that government gives fertilizers and seeds of the priority crops to farmers on loan within CIP-LUC program. The loan has to be paid back during harvesting period.

Source: Field study

If the farmers do not get enough production of the priority crops, they need to find out alternative means to pay back the loan. They also sometimes do not get the market for their production, or sell it at lower prices. As most of the farmers are very poor, often they do not have means to pay back the loan. Therefore, 16% and 15% of respondents asked for affordable agricultural inputs and access to market respectively. The importance of farmers' awareness about LUC program and capacity building were also stipulated by 18% of the farmers.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The problems of land fragmentation and land scarcity are imminent in Rwanda due to ever increasing population density. The attempt to make the best use and management of land through land use consolidation process without active involvement of farmers does not guarantee an increase in productivity and less land fragmentation. Dealing with these problems needs to differentiate between land ownership fragmentation and land use fragmentation. It is not clear in the LUC policy which one is referred to. The fact of compelling the farmers to grow the priority crops chosen by the government in a top down way is seen as government's control over farmers' land use right. If this tendency persists, the resistance of local people against the program will increase; thereby it will affect program's performance and may cause land use conflicts.

This calls for an active involvement of local farmers in the decision making process on how to use their land through a bottom up approach instead of existing top-down approach. In response to the need, a more participatory comprehensive land consolidation is required which includes the restructuring of parcel size, shape, ownership and location. Based on the findings the research came up with following recommendations:

- The role of government should be limited to the provision of technical and managerial advices and assistance. The level of farmers' participation should move from passive level (i.e. information giving) to active level (i.e. taking part in decision making). In this respect, strong legal framework should be formulated. A post-project evaluation is also necessary to ascertain if farmers' participation was adequate and meaningful.
- Closer coordination between government officials at national and local level should be emphasized as during field research local administration was found not to be aware of LUC principles which induced them to implement it in a contradictory way.
- The target figures in 'performance contracts' should be fixed together with local authorities and local farmers through a bottom up approach.
- The government should not merely focus on increasing market oriented agriculture production to meet the national food security. It should rather give focus on strengthening the subsistence agriculture with multiple crops as one of the strategies to meet food security at household level. Wherever applicable, considerations should be given to profitability of other crops by considering 'inter cropping', 'crop rotation' and 'mixed cropping system' in order to meet the nutritional balance at household level.
- The terms 'land consolidation' and 'land use consolidation' should not be used interchangeably in ministerial orders and government documents as these two terms do not refer to the same meaning. Considering the program objectives and activities involved in the process the term 'land use consolidation' is found applicable and should be strictly used.
- Considering the ever increasing land fragmentation problem in Rwanda, the government should start thinking of moving from land use consolidation to comprehensive land

consolidation program in order to facilitate the improvement of working conditions in agriculture farms and rural livelihood.

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## **BIOGRAPHICAL NOTES**

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**Fahria MASUM** is a consultant in Land Management and Land Policy. She gains more than 10 years of international experience in education and capacity development with key expertise in education strategy and policy development in land sector. She took part in consultancy projects funded by the World Bank, GIZ and GLTN/UN Habitat. She served Chair of Land Management at the Technical University of Munich (TUM), Germany as a scientific staff, 2007-2016. She was coordinator of the Master's Programme and Doctoral Studies Land Management and Land Tenure at TUM. Since 2010 she is guest lecturer 'land conflict management' at ITC, University of Twente, the Netherlands. Fahria Masum holds a PhD from the Technical University of Munich in urban land management.

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