INVESTIGATING THE CONTRIBUTION OF LAND RECORDS ON PROPERTY TAXATION: A CASE STUDY OF HUYE DISTRICT, RWANDA

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February 2016

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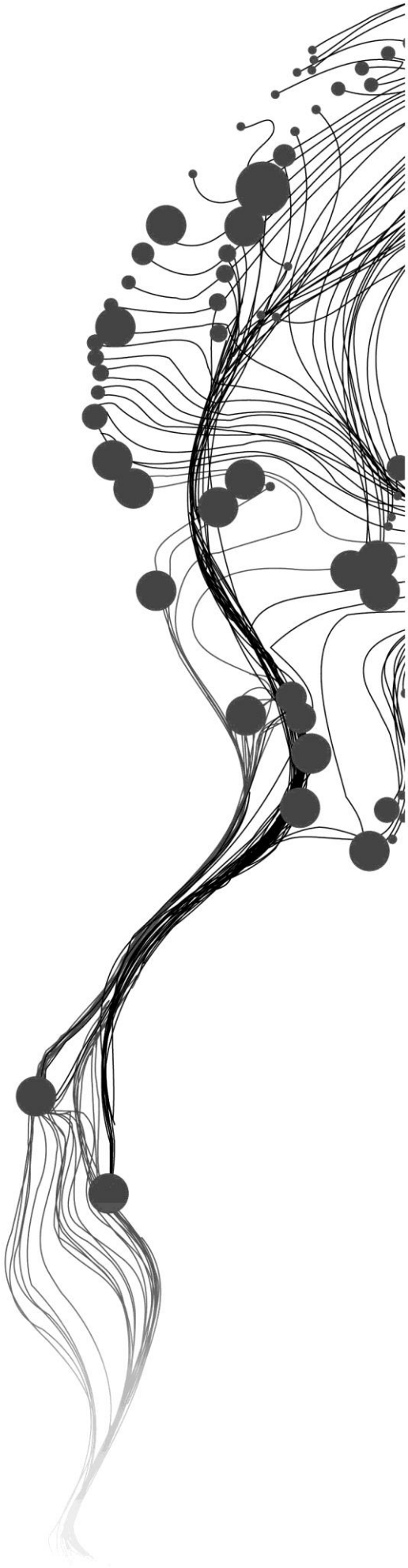

INVESTIGATING THE CONTRIBUTION OF LAND RECORDS ON PROPERTY TAXATION: A CASE STUDY OF HUYE DISTRICT, RWANDA

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ABSTRACT

Property taxation is one of the means at the disposal of the governments to generate revenue. Increasing the amount of the tax revenue is a daily concern for tax authorities. Countries adopt policies and laws to facilitate property taxation process and to make tax collection more efficient and easier. Establishment of land records and their use in property taxation is the most important tool to support property taxation system. Throughout many decades, cadastres have been developed in different countries initially or mainly for the taxation purpose. Various authors have discussed the importance of the land records in general, but not enough researches have been carried out to investigate the contribution of land records on property taxation. The objective of this study is to investigate how the use of land records by the tax authorities contributes to the improvements in the property taxation system leading to an increase of property-based revenue in Rwanda.

This research is based on the case study approach. Both qualitative and qualitative approaches have been used to collect and to analyse data. Three sectors of Huye district, namely Mukura, Ngoma and Tumba were chosen as the study area. Field activities including interviews and direct observations were undertaken in order to get information on property taxation system and land records management. Information collected concern also the use and the suitability land records for property taxation purpose. In addition, findings are used to investigate how land records contribute to the facilitation of property taxation process leading to the increase in the amount of property-based revenue and to the improvement of tax compliance.

The research reveals that the use of land records in property taxation is very essential. Digital data are continuously exchanged between the institution responsible for land records (RNRA) and the tax authority (RRA). The results show that since the establishment of the land registry/cadastre in 2012, the use of land records has facilitated the property taxation process and consequently property-based revenues collected in Huye district have been multiplied almost 30 times during the last four years. Despite that dramatic increase, the analysis of spatial and non-spatial data reveal that the quality of land records is affected by issues resulting from the low reporting of all land related changes, errors in land registry and the lack of some relevant information for property valuation. Furthermore, the research assesses the relationship existing between land records and the tax compliance and founds the land registration to be a triggering factor for new taxpayers to enter in the property taxation system.

In general, with reference to all above mentioned merits, the contribution of land records on property taxation has to be recognised. However, the efficiency in property taxation requires the correctness, the completeness, the updating of land records as well as the data sharing. Enforcement efforts of the tax authorities are also needed to induce the tax compliance.

Keywords: Land records, property taxation, taxes, fees, revenue.

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LIST OF ABBREVIATIONS

at al.	: et alia (and others)
DFID	: Department for International Development
eMRS	: Electronic Mortgage Registration System
etc	: et cetera ("and other things" or "and so forth")
FAO	: Food Agriculture Organisation
IRPV	: Institute of Real Property Valuation in Rwanda
ICF	: Investment Climate Facility for Africa
GBT	: Gemeentelijk Balastingkantoor Twente
GoR	: Government of Rwanda
LAIS	: Land Administration Information System
LTR	: Land Tenure Regularisation
MINIRENA	: Ministry of Natural Resources
MINECOFIN	: Ministry of Finance and Economic Planning
MININFRA	: Ministry of Infrastructure
MoU	: Memorandum of Understanding
NEN	: Nederlands Normalisatie Instituut
NIDA	: National Identification Agency
NISR	: National Institute of Statistics of Rwanda
OECD	: Organisation for Economic Co-operation and Development
OSC	: One Stop Centre
RALGRM	: Rwanda Automated Local Government Revenue Management
RDB	: Rwanda Development Board
RNRA	: Rwanda Natural Resources Authority
RRA	: Rwanda Revenue Authority
RWF	: Rwandan Franc
SIDA	: Swedish International Development Cooperation
SMS	: Short Message Service
UML	: Unified Modelling Language
UN-HABITAT	: United Nations Human Settlements Programme
UNSD	: United Nations Statistics Division
UNECE	: United Nations Economic Commission for Europe
UPI	: Unique Parcel Identifier
USSD	: Unstructured Supplementary Service Data

1. INTRODUCTION

1.1. Background and Justification

Property taxation is one of the means used to finance local governments in many countries. It is about the collection of property taxes and fees paid by property owners or occupants according to the provisions of law. According to Dellinger (1992), the process of property taxation involves five steps namely the identification of taxable properties, valuation of the properties, assessment, billing and collection of tax payment. Tax revenues not only constitute the main source of national income and especially of local governments' revenue but also they facilitate social development (FAO, 2012). They are used by the government to finance its projects for the benefit of the citizens; like health care facilities, education, public transport, electricity, water, hygiene and sanitation, etc. However, due to deficiencies in tax administration, many countries are facing problems to the extent that the tax collection rate is extremely low. In developed countries, the contribution of property taxation is about 7.29% of the total tax revenues and 4.5% of the total tax revenues in developing and emerging countries (Walters, 2011). Deficiencies in property taxation include among other: the limited data coverage, an unclear process of property valuation, the use of inadequate techniques, corruption, unskilled staff, etc.

In order to make property taxation more efficient and effective, many governments have put in place various mechanisms such as fiscal decentralisation, the establishment of fiscal cadastre, mobilisation through outreach programs, enforcement mechanisms, online tax payment, etc. Bird & Slack (2004) noted that existence of land registry/cadastre is very important for the property taxation system. With this regard, Blankart (2014) stressed that the relationship between land and men should be established. This relationship is established when all information about land and owners is recorded and put in one repository to build up land administration functions. Land administration is here defined as " *the process of determining, recording and disseminating information about the ownership, value and use of land when implementing land management policies*" (UNECE, 1996). It is suggested that inventories or registers provide complete and accurate information on taxable properties, property owners, sales prices and land use zones (Çağdaş, 2012). In this regard, Tuladhar (2004) suggests that there is a need to develop a parcel-based geo-information system enabling parcel information to support all land management activities including property valuation and taxation. With the support of land information infrastructure and land policy, land registry/cadastre will be able to provide information needed by tax authority and there will be an economic prosperity (Williamson at al., 2010).

The GoR has recognised the importance of property taxation in the national development and has taken various decisions to enhance property taxation system. In 2002, local taxes related to immovable property were decentralized from central to the district level to provide decentralised entities with adequate resources to implement decentralized functions. However, due to the lack of expertise of local governments, in March 2014, the GoR has given to Rwanda Revenue Authority (RRA) the mandate of collecting property taxes and fees on behalf of and for the districts (Buyinza, 2014). Apart from the fiscal decentralisation, in 2004, a land policy was developed in order to address land-related issues, property taxation included. The policy guideline for property taxation is to establish a property tax for the benefit of local governments and a land administration that supports the process of property taxation (MINIRENA, 2004). In line with property taxation, two legal instruments were enacted: Law n°59/2011 and Presidential order n°25/01. The Law n° 59/2011 provides a fixed asset tax levied only on the authorised developed land held under freehold tenure regime and the Presidential order n°25/01 provides an annual land lease fee charged on land held under emphyteutic lease.

With regard to the land registration, a program called Land Tenure Regularization (LTR) has been carried out from 2009 to be completed in 2012. The aim of this program was to register all land nationwide and to provide legally valid land certificates to all landowners. By using general boundaries approach and orthophotos, data were captured in the presence of landowners and local authorities. In this program, 10.4 million of parcels were registered (RNRA, 2013b). As far as property taxation in Rwanda is concerned, the total number of parcels that are subject to property tax and lease fees is 1.5 million, which is 14% of all registered land parcels countrywide. The majority of the remaining parcels are agricultural and rural lands which are, according to law, exempted from paying taxes or fees (Musharraf, at al., 2013; Sagashya & English, 2007). Therefore, in order to ensure the maintenance of land records, a Land Administration Information System (LAIS) was developed and it is connected to 30 districts. As mentioned above, the Rwanda land policy suggests that reforms in land tax and administration should lead to a higher government revenue. With this regard, in December 2014, RNRA and RRA have signed a memorandum of understanding for continuous exchange of digital data related to land registration. The data provided to RRA serves the basis for fiscal cadastre and include information about the parcel and the owner. The two institutions have connected their databases for exchanging data from one institution to another. From August 2015, land information from RNRA is being imported into RRA's system called "Rwanda Automated Local Government Revenue Management (RALGRM)" which was developed to facilitate tax collection by enabling taxpayers to file and make tax payments online.

The existence of land information does not guarantee efficiency in tax collection. There are some issues to be addressed in order to see positive results in property taxation as stressed by Bird & Slack (2004). One of the issues to be addressed is information updating which is the core problem that some cadastral systems can encounter. Another issue to be taken into account is the fragmentation of information in different institutions. This hinders the easy access to land information and has a negative impact on the efficiency of tax collection. Finally, Bird & Slack (2004) highlights the quality and quantity of land information. Land register has to be able to provide updated, accurate and complete information that supports efficiently property taxation. By contrast, if land records are not well established and updated, it hinders the transparency of valuation and decreases tax collection efficiency (World Bank, 2010). Deficiencies in land records can be noticed in any land registration system and corrections continue after initial land registration and can take many years. Therefore, as LAIS is still young, some issues to be addressed have been noticed and the main ones concerns the correctness, completeness and updating (Khan et al., 2015). Despite these deficiencies, it is noticed that since 2012, there is an increase of property-based revenues collected (Musharraf et al., 2013). Many factors contributed to this increase of property-based revenues and the land registration program can be one of them. The contribution of the present research is to examine how land records are used in the collection of property taxes and fees and to assess how much land records are contributing to the ability of local authorities to raise revenue, especially in Huye District.

1.2. Problem Statement

It is a general experience that systematic land registration brings an increase in the amount of revenue from property taxes/fee and allows the government to control tax evasion by using information supplied in discovering taxable items and taxpayers (Van der Molen, 1998). The GoR has identified the establishment of the land registry as one of the solutions hoping that the availability of land information needed in collecting property taxes will enable tax authorities to generate considerable revenue for the government (MINIRENA, 2004). However, it has been reported that RNRA faced challenges during the process of land registration and continues to face some land related issues, especially the information updating (Biraro, 2014; Muyombano, 2014) and the quality of land information where for some cases the re-demarcation and corrections are required (Khan et al., 2015). With this situation, taxpayers are likely to pay less or more than what they should pay and the amount of property taxes and fees to be collected is less than what should be collected.

A study carried out in 2013 showed that the property-based revenues collected from all districts of Rwanda in the fiscal year 2011-2012 totalled Rwf 4.2 billion (≈ Euros 4,906,542) for land lease fees and Rwf 890 million (≈ Euros 1,039,720) for fixed asset tax (Musharraf et al., 2013). The same study revealed also that the annual growth in the number of taxable items for land lease fees was 125% compared to the previous year 2010-2011. From this situation, it is noteworthy that in Rwanda there is an improvement in property taxation system. This may result in part from the systematic land registration program and in part from the use of land records by the tax authorities as it is expected by the national land policy. This expectation is based on the assumption formulated by De Soto (2003) according to which if a land is registered and land titles are issued to the landowners; it is expected that firstly landowners enter in the formal way of holding land and are aware of their obligation of paying property taxes. Secondly, government officials make use of land records kept in the land registry when collecting property taxes and fees. Thirdly, there is an increase in the amount of revenue from property taxation due to the availability of information about taxable properties and taxpayers. Having correct and updated land information, tax authorities efforts and taxpayer' compliance are one of the key factors for property taxation to be efficient and effective (Walters, 2011).

Although previous researchers (Kopanyi, 2015; Musharraf et al., 2013) provided some insights about property taxation in Rwanda, they did not illustrate how land records contribute to property taxation and the level of that contribution is still unknown. This study is conducted in order to investigate to which extent the use of land records brings changes in the collection process of property taxes and fees, in the amount of collected property taxes and fees; and in the compliance of property taxpayers.

1.3. Research objectives

1.3.1. Main Objective

The main objective of this research is to determine how the use of land records by tax authorities after systematic land registration has contributed to improvements in the property taxation system leading to an increase of property-based revenues in Rwanda.

1.3.2. Specific objectives

In order to achieve the main objective, the following are specific objectives:

1. To review property taxation system and land records in general and in Rwandan context.
2. To analyse the needs of tax authorities to use land records in property taxation activities.
3. To investigate the level of the contribution of land records to the ability of tax authorities to raise property-based revenues.

1.4. Research questions

For each specific objective, the following are questions to be answered in this research:

1. *To review property taxation system and land records in general and in Rwandan context*
   - 1.1. What are taxes and fees associated with land and improvements?
   - 1.2. What are the benefits of property taxation to the citizens?
   - 1.3. What are activities and actors involved in the collection of property taxes and fees?
   - 1.4. How is the management of land records organised in Rwanda?
2. *To analyse the needs of tax authorities to use land records in property taxation activities*
   - 2.1. What types of land information needed by government officials in the collection of property taxes and fees?
   - 2.2. How do tax authorities access to land information needed for property taxation purpose?
   - 2.3. How suitable are land records for property taxation purpose?

3. *To investigate the level of the contribution of land records to the ability of tax authorities to raise property-based revenues*
   - 3.1. To which extent do the land records facilitate the collection process of property-based revenues?
   - 3.2. To which extent do land records contribute to the increase in the amount of the collected property-based revenues?
   - 3.3. What is the contribution of land records in relation to the compliance of taxpayers to pay property taxes and fees?

In order to answer the research questions mentioned above, methods and techniques used to collect and to analyse data are described in chapter 3 of this study.

1.5. Conceptual framework

In light of this study, the conceptual framework described in figure 1-1 shows how the land policy, land registration, land records and property taxation are interrelated to each other. This study seeks to investigate the status of that relationship. In a country where a land policy was established to address land-related issues, land registration is one of the programs to be initiated which is the inventory and recording of rights to land. The outcome of land registration is the establishment of land records by developing a land registry/cadastre and issuing land titles to rightful owners.

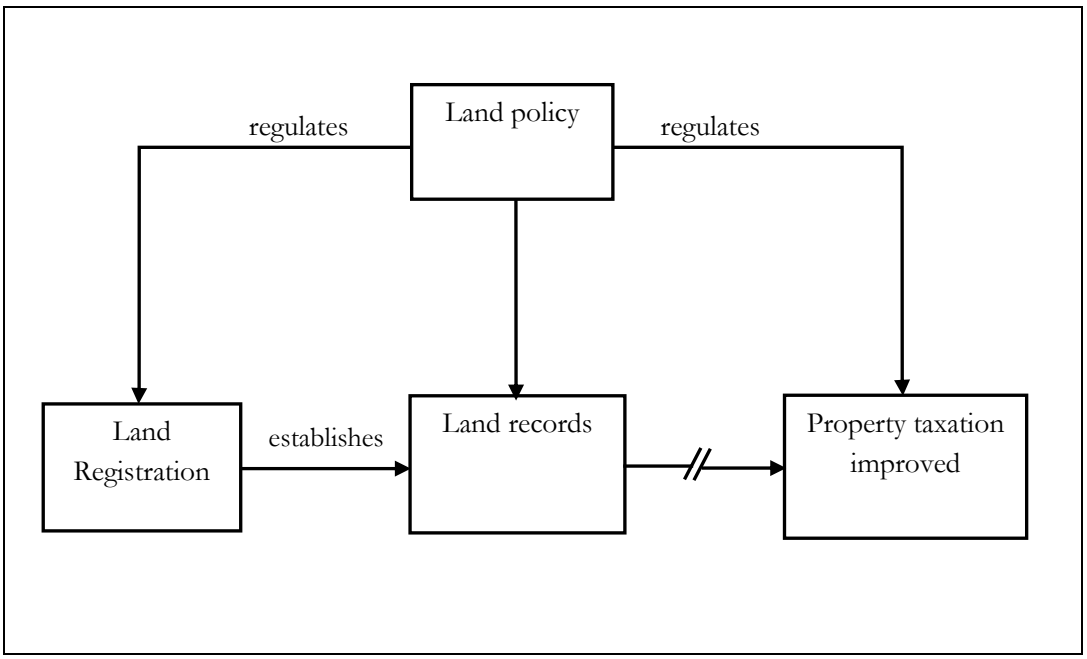


Figure 1-1. Conceptual framework

As land records are set to serve many purposes including property taxation, their use in collecting property taxes and fees will bring more efficiency and effectiveness (UNECE, 1996). The full coverage of the information on land enables tax authorities to execute efficiently property taxation activities and to collect more property-based revenues. By contrast, if land records are not correct, complete, updated or shared; their relationship with property taxation is likely to be broken or a gap is increasingly created between the two concepts.

1.6. Research matrix

The research matrix as presented in table 1-2 gives an overview of the whole research process. It includes specific objectives, research questions, techniques of data collection and data analysis, and anticipated results. Details about these items are presented in chapter 3 of this study.

Table 1-1. Research matrix

Specific objectives	Research Questions	Techniques of Data Collection	Data Analysis techniques	Anticipated Results
To review property taxation system and land records in general and in Rwandan context	1. What are taxes and fees associated with land and improvements? 2. What are the benefits of property taxation to the citizens? 3. What are activities and actors involved in the collection of property taxes and fees? 4. How is the management of land records organised in Rwanda?	• Documentation • Direct observations • Secondary sources • Interviews	• Literature review • UML Diagram • Coding	An overview of the property taxation system and land registration system and their inter-correlation
To analyse the needs of tax authorities to use land records in property taxation activities	1. What types of land information needed by government officials in the collection of property taxes and fees? 2. How do tax authorities access to land information needed for property taxation purpose? 3. How suitable are land records for property taxation purpose?	• Interviews • Direct observations • Secondary sources • Documentation	• Coding • Spatial analysis	• Types of land information needed by tax authorities • Modalities for accessing land records and their appreciation by tax authorities • Status of land records in terms of correctness, completeness and updating
To investigate the level of the contribution of land records to the ability of tax authorities to raise property-based revenues	1. To which extent do the land records facilitate the collection process of property-based revenues? 2. To which extent do land records contribute to the increase in the amount of the collected property-based revenues? 3. What is the contribution of land records in relation to the compliance of taxpayers to pay property taxes and fees?	• Interviews • Direct observations • Secondary sources	• Coding • Statistical analysis	Assessment of the contribution land records to land records in terms of the facilitation of the tax collection process, the increase of collected property-based revenues and the improvement in the taxpayers' compliance.

1.7. Thesis structure

The thesis is divided into six chapters:

Chapter one: Introduction
This chapter comprises the background and justification, problem statement, research objectives, research questions, conceptual framework and research matrix.

Chapter 2: Literature review
It gives a generic overview of the concepts of land policy, land registration, land records and property taxation. It also describes the existing situation in Rwandan.

Chapter 3: Research Methodology
This chapter describes the research methods used to collect and to analyse data. It presents research approach, study area and sampling, methods for data collection, data processing and analysis.

Chapter 4: Results
This presents the results from data collected during field work through interviews, direct observation and secondary sources.

Chapter 5: Discussions
This chapter discusses results presented in chapter 4 of this research and compares them with theories from literature.

Chapter 6: Conclusion and recommendations
This chapter draws a general conclusion for the main research objective, presents findings for each research question and presents recommendations.

2. LITERATURE REVIEW

2.1. Introduction

This chapter reviews different concepts used in this research. It gives a generic overview of the concepts of land policy, land registration, land records and property taxation, and it further presents the existing situation in Rwanda.

2.2. Land policy

2.2.1. Definition and importance of land policy

Land policy is defined as the way government deals with land related activities such as land management, land reform, land registration and the role of land administration systems in supporting land markets (Ali, Zevenbergen, & Tuladhar, 2013). It consists of a whole complex of social and legal prescriptions that dictate how the land and the benefits from the land are to be allocated (UNECE, 1996). Land policy is the foundation on which the systems in a country for land management, land administration and land development are built (Enemark, 2005). As part of the national policy, land policies help governments to achieve objectives such as economic development, social justice and equity, political stability, environment preservation and sustainable land use (Williamson et al., 2010). The main objective of land policies is to address issues related to security of tenure; land use planning and management; land markets; property taxation; natural resources and environment; access to land for poor, women and minorities; and land dispute management. The relationship between land policy and other related concepts is described in figure 2-1.

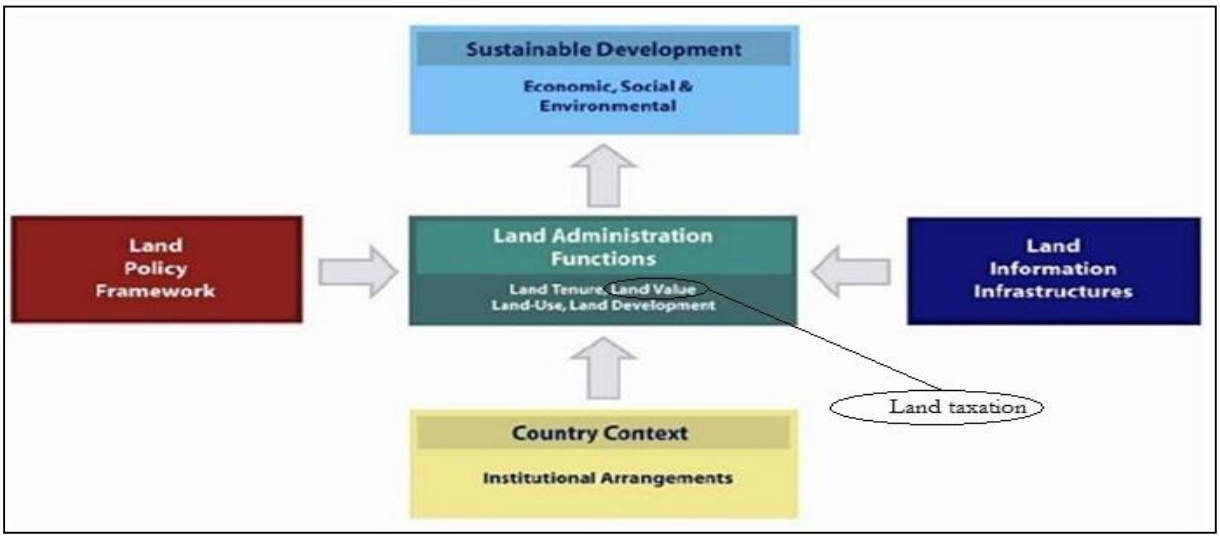


Figure 2-1. The land management paradigm (Enemark, 2005)

2.2.2. Content of land policy

The land is a precious and essential prerequisite for the survival of all human beings on the Earth. Governments put in place land policies to safeguard and to utilise the land in fruitful, equitable and sustainable manner. In this regard, Deininger (2003) identifies three main elements to be included in land policies namely rights to land, land transactions and socially desirable land use.

- **Rights to land:** Land rights are social conventions that regulate the distribution of the benefits from the land. In the light of promoting land rights, land policy addresses issues like the duration of land rights,

modalities of demarcation and transfer, enforcement institutions, subject of rights, evolution over time, customary land, state land, and individual title.

- **Land transactions:** Land transactions are the ways established by the society allowing productive people who are landless or those owning little land to access land. Two ways of accessing land are here highlighted namely rent and sale. Land policies must provide guidelines aiming at promoting rental markets, sales markets and credit markets and to make them more accessible, affordable, secure, and profitable for the economic development and to prevent speculation.
- **Socially desirable land use:** Due to the fact that land transactions can lead, for some people, to the acquisition of big lands without being exploited or productive, governments have to regulate the use of land in a manner that is sustainable in order to increase the productivity and welfare. Land policies have to provide governments with instruments aiming at rational use of land for the development of the country. These instruments can include among others land distribution, land reform, land conflict resolution, property taxation, state land ownership, compulsory land acquisition and land use regulations. With respect to property taxation, by charging undeveloped lands, the tax can serve as a tool to prevent speculation in land and to push landowners to use land in a productive manner.

2.2.3. Land policy and land governance

As it might be noticed, all issues to be addressed by the land policy are mainly those resulting from weak land governance. In this regard, land policy should be based on principles of land governance focusing on transparency, efficiency, equity and accountability (Burns & Dalrymple, 2008). Land governance provides a series of principles aiming at improving and strengthening land administration systems, to increase the security of tenure, to increase transparency and efficient use of land for growth and economic development.

Land policy guidelines do not only concern with the legal aspect but also the institutional aspect. If the main objective of the land policy is to address issues related to land governance, institutions in charge of land matters should not be forgotten. To be successful in land reform, countries need efficient and accountable land institutions that have to be at the forefront of sustainable land governance through efficient, transparent and equitable systems of land administration and land management.

2.2.4. Relationship between land policy, land registration & cadastre, land records and property taxation

Property taxation and recording of land rights are among the issues addressed by land policy. They are instruments at the disposal of the governments to deal with land issues. Implementation of these instruments is called land management and involves interconnected activities, coordination and cooperation between different stakeholders involved (Henssen, 2010). It is recognised that governments need land information to deal with people-to-land relations and when there is no reliable information it affects the quality of decision making (Alemie, 2015). Decision makers rely on ownership information to ensure the security of tenure, on the value of land to ensure the fairness in property taxation and equity in expropriation for the public interest, and on the land use information to ensure efficient resource management (UNECE, 1996).

Much of the literature (Henssen, 2010; Tuladhar, 2004; Williamson et al., 2010; Zevenbergen, 2002) has pointed out the benefits and merits of land registration/cadastre. It is recognised that recording land information and documenting evidence of ownership increases land tenure security and enhances investment in land or real estate, enables landowners to get resources to finance their projects, facilitates land transactions and decreases land disputes. Moreover, it has to be noted that land registration/cadastre do not produce results immediately. Benefits of land registration/cadastre are not absolute or can take a long time to be realised and they depend on other political measures (Henssen, 2010; Wehrmann, 2006; Zevenbergen, 2002).

As far as property taxation is concerned, land records play an important role in many activities that are involved in the taxation process. Bahl et al., (2010) argue that a productive property taxation is not possible if all land and improvements are not well identified. It is necessary to establish an inventory of all properties and to provide for each property an unique identifier. When land records are established, they provide information needed by tax authorities in the collection of property taxes and fees. Information needed here is about the identification of parcel and the owners, size, location, land use, category and the value of the property to be taxed. The unique property identifier helps taxing officials in tracking all parcels, in assessment, in billing and property transfer records (Bird & Slack, 2004). In one way or the other, having and using good land records will contribute to the improvement of the taxation system and consequently will strengthen the State's financial capacity resulting from the increase of revenue for public finances (Akingbade at al., 2012).

With respect to land management, property taxation plays not only the role of raising revenues for the governments but also a regulatory role by encouraging landowners to use the land resources at maximum and to discourage land speculation. By increasing the tax on land which is not in use or an under-utilised land, owners will certainly develop the land in order to get the highest yield capable of covering all costs including property tax. In addition to this, if the land is held for speculation, an increase in property tax will push the owner incapable of carrying costs of under-utilised land to sell the land. If the land is placed on the market, land prices will likely to be lower and land will become accessible and cheaper to those who are in need of it (Henssen, 2010). This follows the economic principle of supply and demand.

2.3. Land registration and cadastre

2.3.1. Land registration

2.3.1.1. Definition and systems of land registration

Land registration is a process of official recording of rights in the land through deeds or titles (Henssen, 2010). It concerns the recognition of property rights and regulation of character and transfer of these property rights (Dale & McLaughlin, 2000). Land registration implies the existence of a register where rights on land or deeds are registered with the focus on the relationship between subject and right (who and how). Depending on the nature and degree of the involvement of the State in the conveyance process, there are two systems of land registration namely the deed registration system and title registration system. From literature (Dale & McLaughlin, 2000; Henssen, 2010; Zevenbergen, 2002), the two systems are described as follows:

- **Deed registration system:** It is the system whereby the deed itself, being a document which describes an isolated transaction, is registered. What is registered is the evidence of the title, not the title. A deed, in its self, does not prove title but a proof that a transaction took place. Under this system, the registration of a deed is considered as measure of security (*the security principle*), as a public notice that the transaction took place and a priority claim to be acquired from the time of registration (*the principle of notice and priority*), and as an evidence to support a claim to a property interest (*the evidence principle*).
- **Title registration system:** It is the system by which the registration concerns the right together with the name of the claimant and the object of that right with its restrictions and charges. Under the title registration system, the register is the proof of legal interests on land. There are various types of title registration systems and the Torrens system is the most know. According to this system, the register is supposed to reflect accurately and completely the current situation (*the mirror principal*), is the unique source of title information and no further investigation (*the curtain principle*) and thus, the State is responsible for the veracity of what is recorded in the register and for paying compensation in case of errors or omissions (*the insurance principle*).

2.3.1.2. Types of land registration

There are two types of land registration: systematic land registration and sporadic land registration.

- **Systematic land registration**: It is the approach used to ascertain and to determine rights and liabilities in land whereby authorities declare one or more areas as registration area (Zevenbergen, 2004). Demarcation is done by using maps/image/aerial photographs and landowners indicate their boundaries in the presence of local or customary officials/committee and neighbours if available. In addition, landowners have to provide evidence of their claim on the land. A list of the all right holders and their land rights is established and people are allowed to object to the information provided by the claimants. Objections formulated against the claims are handled by a committee or a court. A list of non-contested claims is approved by a competent authority and becomes definitive. Spatial and non-spatial information captured on the ground is entered in land register/cadastre which serves as an official repository of all parcels' information. This approach was used in Rwanda during LTR where 10.4 million of parcels have been registered and 8.8 million land certificates issued to the landowners (Enemark at al., 2014).
- **Sporadic land registration:** The difference between systematic and sporadic land registration is marked by the degree of action taken by authorities in the process. While in sporadic land registration authorities initiate and play a big role in the process, in sporadic land registration they take less action (Zevenbergen, 2004). Landowners voluntarily submit their applications for land registration to the land offices. The role of authorities is limited only to the establishment of institutions responsible for land registration. After submission of ownership evidence by owner applicant, the concerned parcel is individually surveyed by a land surveyor preferably in the presence of neighbours. Always, land information is kept in land register/cadastre and a land title can be issued to the landowner if required by the laws.

2.3.2. Cadastre

2.3.2.1. Definition

The concept of cadastre originates from French or Napoleonic Empire real property taxation system in the early 19th century. Thereafter, other European courtiers introduced cadastres in their systems with inspiration from French cadastre. At that time, cadastres were serving countries as fiscal cadastres and the legal or multipurpose roles of the cadastres had been developed later (Zevenbergen, 2002). It should be recognised that the concept "cadastre" has been increasingly promoted in many countries and at international level but its use has also generated misunderstanding, different interpretations and confusion among land administrators to the extent that there is no absolute definition for it since the systems differ between countries due to the historical and legal contexts. Henssen (2010) defines cadastre as "*a methodically arranged public inventory of data concerning properties within a certain country or district, based on a survey of their boundaries*". For cadastre, the emphasis is put on the relationship between right and object (where and how much). It concerns technical aspect of land records which contains information about the location, boundaries and the size of properties (Zevenbergen, 2002).

2.3.2.2. Types of cadastres

Depending on the purpose and the content of collected data concerning properties, three types of cadastres are to be identified. According to Dale & McLaughlin (2000), these are fiscal cadastres, legal or juridical cadastres and multipurpose cadastres.

- **Fiscal cadastre:** An inventory of data concerning properties is called fiscal cadastre when it is designed for property tax purpose. The fiscal cadastre is a register of properties recording their value and is used for collecting property taxes and fees. In that case, it contains all information needed to support property tax systems such as legal description, size, value, location, ownership, description of improvement and land use.

- **Legal or juridical cadastre:** We talk of legal or juridical cadastre when it concerns only the ownership of parcels. The legal or juridical cadastre is the one created to record ownership, legal interests in land and conveyancing matters. Information kept in a legal cadastre include the identification of the owner, type of land right, mode of land, acquisition, charges like mortgage, servitude, caveat, etc.
- **Multipurpose cadastre:** Cadastre is called multipurpose cadastre when there is some additional information added to fiscal and/or legal components within the cadastre. Multipurpose cadastres contain a wide range of spatial and non-spatial information that supports legal processes of land registration, land markets, property taxation, socio-economic activities such as infrastructure system, land use management and zoning, agriculture, forestry, housing, public utilities and transport, etc. (UNECE, 1996).

2.3.3. Merging of land registration and cadastre

As the systems vary from one country to another, land registration and cadastre system can be unified system or dual system (Horner et al., 2009). The system is called unified when land register and cadastre are managed by one institution whereas the dual system allows the management of land register and cadastre to be under the authority of two institutions. The existence of two separate organisations for mapping activities and land registration was often justified by the fact that the two operations used to require different skills and the available technology did not allow for other solutions. Cadastre 2014 suggests that the separation between the land register and cadastre should be abolished as modern technology allows the linkage of land objects and information needed for registration (Kaufmann & Steudler, 1998; Steudler, 2014). In an interactive system, land registry and cadastre complement each over and they are interchangeable components which make up one system; and land registration can be used to mean the whole system (Zevenbergen, 2004). Although Cadastre 2014 recommends countries to adopt the unified system, many countries especially developing countries are still using the dual system.

2.4. Land records

2.4.1. Definition

Land record refers to any information recorded on paper or in electronic format which affects title to real property. According to Henssen (2010), the term "land records" concerns with legal, physical, spatial or topographic information of land. It is usually used to indicate both land registry and cadastre as whole because of their complementarities. As described by Henssen (2010) in figure 2-2, land registry refers to the relation between subject (owner) and right to land whereas the cadastre refers to the relation between the right to land and object (land).

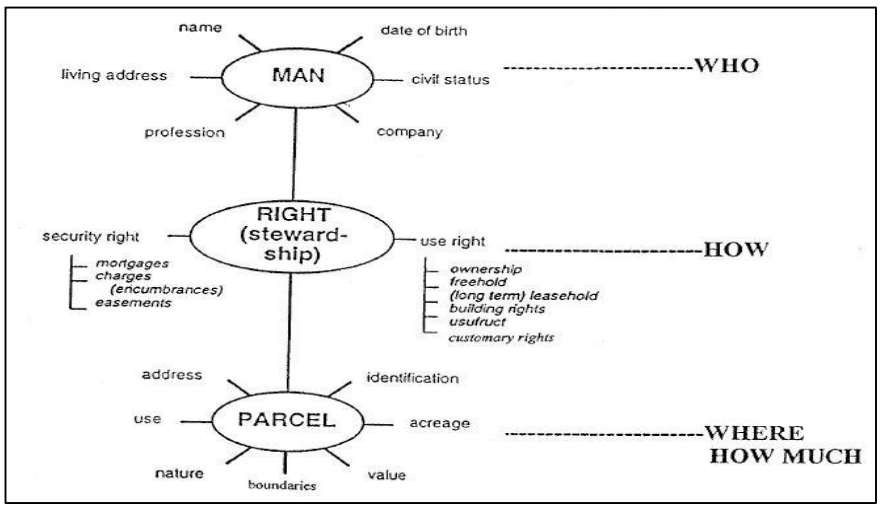


Figure 2-2. Land registration and cadastre (Henssen, 2010)

2.4.2. Content of land records

It is recognised that with development, human society became more complex and new land management tasks have emerged pushing governments in different countries to shift from fiscal to legal to multipurpose cadastres (Henssen, 2010). Despite the differences between countries, information provided by land records includes among others ownership, use, value and development of land (UNECE, 1996). Concretely, Dale & McLaughlin (2000) and Henssen (2010) propose that the land records should include spatial and non-spatial data such as cadastral land parcel, cadastral records (data concerning land parcels, land rights and rightful claimants), parcel identifier (indicator or a reference that identifies the parcel), improvements on land (housing and buildings), land use, property values and tax assessments, administrative boundaries, geodetic network of coordinate points, a topographic large-scale base map, socio-economic information (population census, monuments, antiquities, environment, gas, electricity, telephone, etc), and orthophotos or images.

2.4.3. Quality of land records

To be more useful for property taxation, land records must meet certain requirements. The literature, for example (Ali *at al.*, 2013) highlights some quality requirements namely completeness, updating, availability and sharing, whereas (Bittner & Frank, 2002) focuses on correctness in land register/cadastre.

- **Completeness:** Since the main objective of the tax authorities is to collect property taxes and fees from all taxpayers, information provided by land records must be complete in content and with full coverage of the area of interest. Completeness is defined as the presence or absence of features, their attributes and relationships (NEN, 2013).

- **Correctness:** It is an important requirement associated with the completeness. Correctness concerns the correspondence between the situation in reality and the content of the land register/cadastre (Bittner & Frank, 2002). Incorrectness can happen when land register/cadastre does not capture all changes in property (land use, size, value, etc.) or in the owner (transfer by sale, inheritance, succession, etc.) or if the information kept in land registry/cadastre is erroneous even from the time of its establishment.

- **Updating:** Keeping land records updated is very important for tracking all new taxable items as well as subdivisions, mergers and other changes that can affect properties (Bahl et al., 2010). A land register loses its value when the land information it stores is not updated (Henssen, 2010).

- **Data sharing:** It is good not only to have information but also making it available to the users is another important thing which must not be forgotten (Tuladhar at al., 2005). There is a need to set up clear procedures and requirements for acquiring data, access to data and data sharing among concerned institution (Ali et al., 2013). The need for data sharing becomes increasingly imminent as many countries suffer from the fragmentation of information in different institutions (Bird & Slack, 2004). In line with this, for example in the Netherlands, a system of base registers have been established and different government organisations are required by the law to make use of data from the system and to communicate to the concerned base register administrator in case they notice any data which is possibly incorrect. As noticed by Kathmann & Kuijper (2010) this practice is very useful to improve data quality.

2.4.4. Types of land records

Land records can be categorized according to the format, the legal context and the purpose of the land records.

2.4.4.1. According to the format

With regard to the format, land records can be analogue or paper-based as well as digital. Land records are said to be paper-based or analogue when the information is kept on the paper whereas digital land records are those stored electronically.

2.4.4.2. According to the legal context

From a legal point of view, land records can be formal or informal. Formal land records are those recognised and protected by the law. On the contrary, informal land records are those that are not formally recognised by the law or recorded in the system. This study only focuses on formal land records because in Rwanda all landowners are obliged to enter into the legal form of holding land.

2.4.4.3. According to the purpose of land records or cadastres

The purpose of the land records differs according to the intent of the authority who established them or the purpose for which land records are to used. The purpose of establishment of land records can be legal, fiscal, regulatory (use of land) or multipurpose. Details for each category were given earlier in section 2.3.2 of this study.

2.5. Property taxation

2.5.1. Definition

In this study, the term property taxation refers to the process of collecting tax or fee levied on immovable property. The concept "immovable property" has a broad sense and it is subject to many disputes about items that can be included in tax base (Youngman, 1996). Depending on the legislation in force, property taxation concerns both land and improvements or one of them only.

2.5.2. Preconditions for property taxation

Property taxation is a process that needs a certain number of supporting mechanisms to be in place. Mechanisms defer from one country to another country and depend on the type of tax reform to be implemented. In line with this, Bird & Slack (2004) identified some preconditions for property taxation reform. They include the capacity of local government, a solid administrative infrastructure, rationalisation of administrative procedures, education and incentives for revenues mobilisation, the establishment of culture among taxpayers, availability of technical expertise in property valuation, strong enforcement mechanisms and tax relief programs. Governments should address all those issues to enable the country to have an efficient and sustainable property taxation system.

2.5.3. Types of property taxes and fees

This study covers both property taxes and fees. In general, a tax is an amount of money that government charges on individuals, businesses or properties for raising public revenue without necessarily referring to any service rendered or any specific benefit for the taxpayers whilst a fee is a paid in exchange for a specific service rendered to the beneficiary (Agrawal, 2001). Tax is levied for the common benefit of all taxpayers but a fee is paid for a special benefit gained by the taxpayer proportionately to the service received. However, Agrawal (2001) argues that if the element of revenue generation prevails, the levy becomes a tax and since charging a tax or a fee consists in extracting money from people there is no generic difference between the two. With respect to land and property taxation, Walter (2011) identifies three categories of property taxes and fee namely one time fees and taxes, land rents or land lease, and land and property tax.

2.5.3.1. One time fees and taxes

In this category, there are *development fees*, *planning fees*, *impact fees*, etc. They are generally collected by local governments to finance activities aiming at managing the development process or to mitigate the impact on the existing public infrastructure or utilities. This category includes also *estate tax* (levied on the total value of person's estate), *inheritance tax* (levied on property transferred to heir), *capital gain tax* (levied on profit resulting from the sale of a property), *transfer tax* (fees charged when land with title is transferred to another party), *betterment levies* (levied on the increased value resulting from improvement of infrastructure) and *severance taxes* (levied on extraction of natural resources like oil, coal, metals, etc).

2.5.3.2. Land rents and land lease

Land rents and land lease fees are charged in countries where all land is publically owned by the States. Long rental or leasing agreements are signed between private individuals and the governments. The right to land is limited in time and private individuals have the right to occupy, improve and use the land under certain conditions. In turn, the tenant or the lessee has to pay periodically some amount of money to the government as a land rent. Leasehold interests are transferred from one person to another. (Walter, 2011).

2.5.3.3. Annual land and property tax

According to Walter (2011) annual land and property tax is the only tax based on land and improvements paid regularly by owners. Land and property tax is different from a property-based fee because it is not paid in exchange for a service rendered or a particular benefit enjoyed by the taxpayer. It is an important source of revenue for many countries to finance public infrastructure and public services.

2.5.4. Property tax administration

There are five steps in the administration of the tax namely discovery identification, valuation, assessment, billing and collection (Dellinger, 1992).

2.5.4.1. Discovery and identification

Discovery and identification consist of identifying the taxable property and the owner or another person responsible for the tax payment. According to Dellinger (1992), there are two basic approaches used in property identification: *self-declaration approach* and *government inventory approach*. For the *self-declaration approach*, the taxpayer has the obligation report him/herself and to provide the information about his/her property to the tax authority. In the *government inventory approach*, the tax authority obtains the information in the field or from other registers kept by agencies in charge of land matters. With regard to this, the process of identification requires minimum information for each property such as the description, the definition of boundaries, ownership, and the value of land and improvements (Bird & Slack, 2002). Therefore, the ability for the tax authority to identify taxable properties and taxpayers depends on the coverage of land records, how they are organised and accessible (Muñoz, 2011). In countries where property taxation activities are carried out by an institution which is not in charge of land matters, there must be a close collaboration between the tax authority and the lands department. There is a need to link property taxation system and land administration system in order to make the process of discovery and identification easier (Walter, 2011). In Netherlands for example, the land registry (Kadaster) provides to municipalities a part of the information needed to carry out property taxation activities (GBT, 2015).

With respect to the self-declaration approach, it should be stressed that the virtue of this approach is that is not expensive for the tax authority as the identification and part of the property valuation activities are done by taxpayers. Therefore, the self-declaration approach is rarely successful and its effectiveness depends on one hand upon the sound auditing system to assure the accuracy of the self-declarations and on the other hand, the cooperation of the taxpayers which is difficult to obtain (Dellinger, 1992; Walters, 2011). In many countries where the self-declaration approach is used, severe penalties to induce the cooperation of

taxpayers have been put in place but they are rarely imposed because of the lack of the personnel to perform audits and to discover taxpayers who did not file their land declarations. In such a situation, self-declaration is done voluntarily by some taxpayers who have good attitudes or who fear to be punished otherwise tax payment takes place after the application of enforcement activities. They include among others the imposition of the tax clearance as a condition to have access to different service delivered by the government or any other form of government intervention. Countries using self-declaration approach are for example India, Hungary and Colombia (Walters, 2011).

2.5.4.2. Property valuation

Valuation consists in calculating the relative value of the property subject to the tax. There are two elements to be considered in the valuation namely the tax base and the approaches for valuation.

Definition of the tax bases

Defining the tax base is to determine the type of the properties subject to property tax/fee and the measure of the tax base. For the type of the *properties subject to property tax/fee*, the government decides whether to tax both land and improvements or either land only or improvement only, whether to include or not movable property incorporated in immovable structures, improvements other than buildings such as paving, irrigations, etc. Every country defines what is considered to be the tax base which is different from one country to another.

Therefore, the *measure of tax base* concerns the property attributes that will be valued. From the literature (Dellinger, 1992; Walters, 2011; Youngman, 1996), four main approaches used to determine the property attributes are to be identified namely (1) the market value approach, (2) the annual rental value approach, (3) the area-location approach, and (4) the banded approach. It should be noted that the choice of the system depends largely on the historical reasons, on the status of the real estate market and on the administrative capacity of the government.

- *Market value approach*: it takes into account the price that a buyer would be willing to pay and a seller would be willing to accept in the open market. To be successful, this approach requires a well-organised property market with a strong economic infrastructure including the institutions dealing with the market transactions such as banks real estate professionals, valuation experts and recording system of data related to the market transaction. The advantage of this approach is that the value reflect the economic reality and the tax base grows with the local economy. Therefore, the approach is very expensive in terms of human and financial resources and not successful in countries with less developed economies and immature real estate markets.
- *Annual rental value approach*: with this approach, the definition of the value is the rent or lease to be paid by a tenant within a period of one year to occupy and benefit from a property. It requires a very active real estate market, technical and institutional arrangement as the market value approach. Annual rental value approach has the same advantages as market value approach.
- *Area-location approach*: the tax base, for this approach, is defined in terms of physical characteristics of the property. The tax base is defined by the combination of the measured area of the property, the location, and the use of the land. This approach does not require neither too much data and expertise nor a mature real estate market. If the required minimal property information for administering the system is available, the advantage of this approach is that its implementation is not expensive compared to the market value and annual rental value approaches.
- *Banded approach:* with the banded approach, value clusters called bands are established and each taxable property is placed in its corresponding band. All the properties in the same band within a given administrative entity pay the same tax/fee. Like area-location approach, this approach is attractive since it requires less information, less expertise and consequently less expensive to implement. Therefore, with the banded approach, it is difficult to achieve equity between the taxpayers since two properties with

different market values can be classified in the same band and consequently pay the same tax/fee. The system of banded values is used as the basis for taxing residential property in England, Scotland and Wales and replaced market value approach since 1991.

Approaches for valuation

There are three approaches that can be used to determine the market value of the property namely sales comparison approach, cost approach and income approach (Walters, 2011).

- *Sales comparison approach*: this consists of comparing sales prices of different properties with the same characteristics and assigning to the property of interest the average price. With this method, the task of the valuers is to gather data on similar properties that have been sold recently and to make needed adjustments in order to take into account all differences resulting from subsequent changes in the market or in structure. This method is simple and widely used for residential where real estate markets are well organised and active (Dale & McLaughlin, 2000).
- *Cost approach*: it is also known as *construction cost approach* or *replacement cost approach*. For this approach, the assumption is that an informed buyer would not pay more than what is required for him to acquire land and to construct a similar building. This method requires some data costs and technical expertise to determine the cost of all components and to estimate depreciation rates. Consequently, to overcome the issue of lack of technical expertise most valuers use current construction cost indices (Walters, 2011).
- *Income approach*: for income method, the value of the property depends on the interest or the benefits that the buyer expect to receive from the property. An investor willing to buy a property cannot pay more than the value of its income potential. Being a comparative approach, the valuer has to determine the net benefits from the property by comparing with similar properties.

2.5.4.3. Assessment and tax rates setting

After the valuation of the property, the next step is to calculate the amount of tax to be paid. It is the process of establishing the liability of the taxpayer. The amount of tax to be paid is equal to the tax base multiplied by the tax rate. Two policy considerations with respect to the tax rates setting must be highlighted: the number of tax rates and the authority responsible for setting tax rates.

Concerning the number of tax rates, a property taxation system can have a *uniform tax rate* or *multiple tax rates*. With the *uniform tax rate system*, the property is taxed at a flat tax rate whereas, *for multiple tax rates*, graded or progressive tax rates are applied. *Progressive tax* rates approach consist of the establishment of different categories and to each category, a different tax rate is applied with the possibility to exempt the lowest category from paying property tax or fee. Total tax exemptions are often provided by the law to protect some special classes like farmers, poor or vulnerable people. As noticed by Bird & Slack (2002), many taxing authorities use multiple tax rates that differ according to the property classes and the choice of tax rates depends largely on the administrative capacity of the tax authority. Governments with limited capacity will tend to design a simple system with few land use classifications, uniform tax rates or few tax rates.

There are three reasons highlighted by Walter (2011) that can justify the use of multiple tax rates and different property classes. One is the differences in the burden that the taxable properties inflict on the local government services and consequently those with a greater burden would be taxed at higher rates. Another justification of having differentiated tax rates is based on the ability to pay where those with more means have to pay more. Multiple tax rates are finally justified by the principle of wealth redistribution which provides that higher valued property should be taxed at higher rates. In addition, properties can be classified according to their land use (agricultural, residential, commercial, etc.), ownership (individual, public, charitable, religious, etc.), taxable values (zoning bands, ranges, etc.) and location (urban, rural, etc).

With regard to the authority responsible for setting tax rates, there are to possible practices. Tax rates are either determined by local or by the central government. Some strong arguments to support each practice have been formulated. Arguments in favour of local autonomy are based on the fact that local authorities know better local needs than the central government. As they are accountable for the provision of public services, they need to have full control on tax rates setting. Therefore, those who are in favour of the national role in setting of the tax rates seek to ensure the uniformity and to prevent tax competition between local governments (Bird & Slack, 2002; Walters, 2011). They argue that when there is a full local autonomy, it is observed that local governments seeking to attract more investors may decide to lessen their tax rates with risk for the poorest local governments of not being able to provide public services to the citizens.

2.5.4.4. Tax billing and collection

Billing consists of informing the taxpayer of his/her liability. It is a crucial activity that must be carried out efficiently because if the taxpayer is not notified there is no payment. Efficiency in address system is a prerequisite for the billing system. If the address system in not working properly, many tax bills are established but they are not delivered because the addresses of taxpayers are not known. According to Walter (2011), delivering tax bill can be done by mail or by hand, going door to door.

Collecting tax or payment of tax is the final stage of property taxation process. It is important that tax authorities provide more methods for making payments in order to make the tax payment system easier. Tax authorities have the obligation to create a conducive environment for taxpayers by adopting new procedures aiming at keeping compliance cost low and encouraging compliance (Walters, 2011). They can introduce new technology like the use of mobile phones or the internet for tax payment.

2.5.5. Impact of property taxes and fees on citizens

2.5.5.1. Improvement of living conditions

Property taxation is one of the sources of revenue for national or local governments. Property taxes collected by the government are used to finance public projects that benefit the citizens (Akingbade et al., 2012). Public projects aim at improving the living conditions for the community and they include health care facilities, education, public transport, electricity, water, hygiene and sanitation, etc. As it is not possible for individuals to finance such collective projects, governments intervene by mobilising resources through property taxation or other means to meet community needs. Therefore, improving public infrastructure and services is one of the incentives that influence the compliance of taxpayers. For property taxation system to be successful, it is important that taxpayers be able to realise that taxes and fees paid are proportional to services that the government provides to them (Oberholzer, 2008). Furthermore, investment in public infrastructure will also result in the increase of the value of land as more people will be attracted by the area (Walters, 2011).

2.5.5.2. Rational use of land

A tax on land can contribute not only to the improvement of living conditions of citizens but also it can be used to encourage landowners to use the land in a productive manner and to discourage land speculation (FAO, 2012). If the government does not tax undeveloped land, speculators will tend hold land for a certain period without developing it and wait to sell it if land prices increase. Such practice is not profitable for the economic development and governments can address that issue by charging landowners who withdraw land from productive use. In addition, those who hold a lot land will be encouraged to use it in an efficient manner or to sell a part of it to anyone who needs land to develop or to exploit (Walters, 2011).

2.5.5.3. Social impact

Paying property-based-taxes and fees has social implications on citizens. It is very difficult for poor people to satisfy the needs of their families and to pay property-based and fees that they owe to the government. If the aim of the governments is to improve living conditions of all citizens, it is not fair and reasonable to ask them to pay property taxes and fees if they cannot afford. Governments should put in place some mechanisms allowing to tax people according to their income i.e. taxing rich people at a high rate and poor people at lower rate. One of these mechanisms is to apply progressive rates whereby the range of taxable values is subdivided into categories and a different tax rate is applied to each category, and in some cases the lowest categories are exempted from paying taxes/fee (Walters, 2011). This system is applied in countries like Morocco, Egypt, Argentina and Brazil. Furthermore, in case of people living in extreme poverty, low income households may be totally exempted from paying property taxes/fees or a minimum amount is established to be applied to the poorest people with the possibility to make a special request for exemption. Jamaica, Latvia, Mexico and Uruguay are examples of countries that have progressive rates. It has to be noted that if countries do not adopt policies aiming at lessening the tax burden to poor people it may end up in non-compliance. In some cases these poor families incapable of affording taxes or fees will be obliged to sell their properties without hope to find other land to buy with the money they received. This can induce them in a situation of landlessness.

2.5.6. Determinants of tax compliance

All tax authorities share a common mandate which is to raise the level of compliance. According to James & Alley (2010) tax compliance is defined as "*the willingness of individuals and other taxable entities to act in accordance with the spirit as well as the letter of tax law and administration without the application of enforcement activity* ". From the literature (Loo at al., 2009; OECD, 2010; Wenzel, 2002), four factors that influence taxpayer's compliance behaviour are to be identified: fear to be detected and punished, recognition of benefits gained from taxes paid, taxpayer's positive attitude towards taxation, financial ability and availability of information.

2.5.6.1. The fear to be detected and punished

Penalties are one the tools used by tax authorities to induce taxpayers to meet their tax obligations. The use of penalties to induce compliance is based on the assumption some citizens pay taxes/fees because of fear to be detected and punished (OECD, 2010). Penalties are essential not only to encourage people to pay taxes/fees but also to respect deadlines by paying on time. Tax authorities are authorised to impose interest penalties for the late payments, bring the delinquent taxpayer before the court, to seize and to sale of the taxable property itself and the personal effects of the delinquent taxpayer and to garnish the taxpayer's rents. Therefore, as these penalties imposes some costs to tax authorities, many countries have adopted alternative enforcement mechanisms. They include for example exchange of tenure for tax payment where it legally forbidden for land administrators to register a deed of sale before all previous taxes on the property are paid. It can be also imposing tax clearance as a condition to get a construction permits, to have access to land related services (transfers, subdivision, merger, registration of a deed, etc). Tax clearance can also be imposed to be eligible for bidding public contracts, to have access to public utilities (water, electricity, etc). Despite the highlighted role of penalties to induce compliance, researches (OECD, 2010; Wenzel, 2002, 2004) revealed that in some cases they have a weak effect and could be effective if other preconditions, like strong auditing system and positive attitude towards taxation, are in place.

2.5.6.2. Taxpayer's positive attitude towards taxation

Attitudes has been found to be one of the factors that influence taxpayer's compliance behaviour. They are associated with personal and social norms. Personal norms are the products of the convictions about what is right or wrong and a result of long term socialisation process. It is about the culture, the values, the personal characteristics and the belief that there is a moral obligation to comply with. Social norms are behaviour, ideas and convictions among people living in a given social group. They are influenced by norms

from other social groups and as the society evolves, social norms change to cater current social realities (OECD, 2010). With regard to tax compliance, researches (Loo et al., 2009; Wenzel, 2002, 2004) have found that attitudes have an effect on tax compliance. If by character a person is honest, he/she will voluntarily comply with tax obligation without waiting for government intervention and if a tax evasion is socially considered as something wrong or against their values, each member will likely comply with tax obligation because of the threat of social exclusion. People tend to do what the majority do and they are more likely to be influenced by others.

2.5.6.3. Financial ability

Complying with the tax obligations implies the payment of money. Tax payment affects people' wealth and consequently taxpayer will fail to comply if his/her financial means are not sufficient. Different studies show that financial considerations have influence on tax compliance. For example, Ritsema at al. (2003) have found that some taxpayers may fail to pay taxes because they the lack of money. It is clear that the financial ability is the key factor of the tax compliance since the taxpayer cannot do anything if he/she is insolvent.

2.5.6.4. Recognition of benefits gained from taxes paid

There is a correlation between the citizens' satisfaction with the benefits gained from paying taxes and taxpayer's compliance behaviour. People feel positive about paying taxes if the government utilises appropriately tax revenue to finance projects that benefit to them (Oberholzer, 2008). It is important for the government to assure taxpayers that the amount of tax that they have to pay is proportional to the benefits they get. To do so, the government should be transparent by establishing accountability mechanisms to provide citizens with information on how tax revenue is managed and utilised.

2.5.6.5. Availability of information

No one can comply with an obligation that he/she does not know. Citizens need to be informed about their rights as well as their obligations. According to UN-HABITAT (2004, 2013), the right to information or the right to know is one of the fundamental rights and it plays a vital role in the promotion of transparency and citizens' participation in decision-making. With regard to property taxation, taxpayers need to know their tax obligations, the procedures to be followed, the tax amount to be paid through tax bills, the ways of payment, etc. In addition to that, Oberholzer (2008) noted that taxpayers should be empowered with knowledge on the benefits and utilisation the taxes they pay. In the research conducted in Malaysia, it was found that tax knowledge has a significant influence on taxpayer's compliance behaviour (Loo et al., 2009).

2.6. Land policy and systems of land registration, cadastre and land taxation in Rwanda

2.6.1. Land policy and land-related legal framework in Rwanda

Land in Rwanda was governed by few scattered legislation until 2004 and before a long time, there was no proper land policy nor land law. Land tenure system was characterized by the coexistence of customary law practised almost everywhere in rural areas and written law for urban land and some few rural lands managed by churches and other legal persons (MINIRENA, 2004). Land titles were available in towns and cities and not accessible to the majority of ordinary people. In 2004, a land policy was adopted and land law was enacted in 2005 which formed the basis of all subsequent legislation and orders that were enacted after.

Land policy in Rwanda was established to address issues that hindered the efficient land management in Rwanda (MINIRENA, 2004). Land related issues included among others strong pressure on land by rapid population growth, the lack of specialisation in the agricultural sector, land fragmentation, landlessness, scatted farming plots, lack of reliable land registration system. There was also a weak and inadequate existing methods of land use-planning and land improvement, disorderly and fraudulent land transactions

not giving to the land a recognised market value for the benefit of the government treasury. Other issues identified included the soil and environmental degradation and poor coordination among various institutions using land to support their activities.

For an effective and efficient implementation of the land policy, the guiding principles were adopted. The most important one is the establishment of an appropriate cadastral system to capable of guaranteeing land tenure security, supporting land transactions, land taxation, land use planning, management and rational use of land. In addition to land policy, the GoR has further enacted the Organic Land Law n°08/2005 of 14/07/2005 (amended by Law n°03/2013 of 16/06/2013) determining the use and management of land in Rwanda. Other land related laws and orders were also enacted in order to implement the national land policy. In line with this, another important activity was a systematic land registration carried out to record information about all parcels of land countrywide.

2.6.2. Institutions in charge of land records

In Rwanda various institutions are involved in establishment and management of land records. They operate at different levels to in order to ensure sound land management and land administration. At the top of the system, there is the Ministry of Natural Resources Authority (MINIRENA) whose responsibility is to establish policies through ministerial orders, instructions and procedures for land administration, land planning and land allocation. Under the Ministry, there is Rwanda Natural Resource Authority (RNRA) which has the specific responsibility to register land, issue and keep land titles and other information relating to land. In RNRA, land-related matters are dealt with by its Department of Lands and Mapping and its 5 Provincial Offices of Registrars of Land Titles located respectively in 5 Provinces. At the district level, Land Department in One Stop Centre (OSC) is responsible for notarizing documents related to land transactions and maintenance of spatial and non-spatial land records. Currently, the GoR has made available land managers at sector level to be in charge of land notarization services, to receive applications requesting land related service and to present them to the district OSC for processing. Technically, staff in charge of land records at district and sector level are answerable to RNRA. Institutions involved in establishment and management of land records in Rwanda are described in Appendix 9.

2.6.3. Land registration and land records in Rwanda

In a bid to implement the land policy adopted in 20004, the GoR, through RNRA, has carried out a systematic land registration of all land countrywide. From 2009 to 2012, about 10.4 million parcels were registered and 8.8 Million printed land certificated issued and issued to landowners (RNRA, 2013b). In addition, a Ministerial order n°002/2008 was enacted to provide the procedures and the actors involved in land registration, and to regulate the maintenance of land records. This order also gives guidance on how errors in land registry/cadastre are to be dealt with. It states that if the land information is found to be incorrect, the registrar of land titles may rectify land registry/cadastre or any instrument presented for registration. The rectification can be done upon the request of the interested parties or upon the initiative of the registrar of land titles when errors do not materially affect the interest of the landowner or in the case of re-demarcation after notifying and hearing all interested or affected parties.

Maintenance of land records is the responsibility of RNRA and its affiliated agencies. In order to move from analogue to digital way of dealing with land transactions, a land Administration Information System (LAIS) was developed and launched in 2012. It was initially designed to support the maintenance of data collected during systematic land registration and to serve as a national registry/cadastre, a repository of land related information and a tool to ensure a proper land management and land administration (RNRA, 2012). Currently, LAIS is centrally managed by RNRA and it is connected to 30 Districts, five RNRA's provincial offices, Kigali City, RRA, RDB and NIDA. As the guiding principle of the land policy was to establish a multipurpose cadastre, LAIS stores both information related to land ownership and to land use. Therefore, the system has to be improved in order to include other important components namely property value and

development of land. Freehold land titles, lease contracts and other ownership documents issued to the landowners constitute another category of land records. They are considered as evidence of ownership and a copy of the land registry.

As far as the system of land registration is concerned, land administration in Rwanda is based on the title registration system (adapted Torrens system) where the right its self together with the subject and the object of that right are all registered (MINIRENA, 2012). The choice of Torrens system as the type of land registration is confirmed by the provisions of the Ministerial order n°002/2008. The mirror and curtain principles are provided in the article 23 of this order which considers the register as full evidence for the right of ownership, responsibilities and charges. This evidence cannot be challenged even though it was established on the basis of an invalid contract or a court order obtained by surprise. In the case of the invalidity of the contract or the mistake, the aggrieved party is only entitled to a personal action for damages. As suggested by insurance principle, article 67 of this order provides a payment of damages and costs to the aggrieved party if the State is found liable for the mistakes of registrars of land titles. The money to be paid must come from the budget of the institution in charge of land registration which is RNRA.

2.6.4. Forms of land tenure in Rwanda

According to Tuladhar (2004), six main forms of land tenure are to be considered. The *non-formal tenure* when the occupation or the use of land is not authorised by the real owner. The *communal ownership* when the land is owned collectively by the tribe, not a family. The *private freehold* when the land rights are held by private owners who are free to use and dispose of it according to market forces unless some prerogatives reserved for the state to use and control public lands. The *private leasehold* when the land is owned by a private owner who leases it from a private owner for a fixed term, with some restrictions on the use and activities. The *public freehold* when the land is fully owned by the State or a government agency whilst the *public leasehold* is the form whereby the land which belongs to the State or government agency is leased for a certain time to an individual or a company. For the case of Rwanda, Law n°43/2013 of 16/06/2013 provides two forms of land tenure namely emphyteutic lease and freehold.

2.6.4.1. Emphyteutic lease

The emphyteutic lease is defined by the Law n°43/2013 as "*a long-term contract between the State and a person to exploit land in return for a periodic agreed fee payment*". From this definition, it has to be remarked that this form of land tenure supposes that all lands belong to the State and the private owner leases the land from the State. In Rwanda, the concept of State being the owner of all land started in 1973 when the law declared the land not held under written law to be state land. Even though it is not explicit in the national land policy and other land related laws, the concept of state ownership continued even after the land reform of 2004. According to Law n°43/2013, "*the land is part of the common heritage of all the Rwandan people.....and the State is the sole authority to accord rights to occupation and use of land.....*". On the contrary, the same law uses the term "proprietor" where it says that every person who is in possession of land is the recognised proprietor under the emphyteutic lease. The term "proprietor" seems not to be appropriate since, in the contract of emphyteutic lease, the private individual is called "Lessee" whilst the Republic of Rwanda is the "Landowner".

Furthermore, the same law recognises the category of individual lands by saying that this category comprises private individual land acquired through custom or written law. With this situation, the nature of emphyteutic lease as it is used in Rwandan context is still ambiguous and some landowners are still confused about the fact of leasing land from the government whereas they have been owning land of their ancestors for many years (Mbembe at al., 2012). As any landowner, the lessee is entitled to enjoy all land rights pertaining to the use of land, to harvest the fruits and to dispose or transfer land rights in accordance with

the provision of laws. In Rwanda 99% of all registered parcels fall under the emphyteutic lease regime (Musharraf et al., 2013). This is due to the fact that the common form of land tenure in Rwanda is the emphyteutic lease with an exception of the freehold to be granted only to some developed land under certain conditions discussed later in the next section 2.6.4.2. In addition to that, the majority of the land in Rwanda are agricultural rural land (Sagashya & English, 2007) which, by law, cannot be granted a freehold title. As far as property taxation is concerned, the owners under emphyteutic lease are subject to an annual land lease fee determined by the District Council.

2.6.4.2. Freehold

According to Law n°43/2013, freehold is "*a type of land tenure granting full and indefinite rights over the land*". In Rwanda not all lands owners are entitled to be granted freehold land titles. The right to freehold title is reserved to Rwandan citizens owning land reserved for residential, industrial, commercial, social, cultural or scientific services. It is only applied to developed land where infrastructure is erected and its extent is strictly limited to the area of land that is necessary to support the authorised developments on the land and their amenity. Therefore, the size of land that can be granted freehold title cannot exceed five hectares unless the authorisation of the Minister in charge of lands. In addition, building and improvements entitled to freehold tile are those authorised to be built and for which the owner has obtained a construction and occupation permits issued by competent authority (Article 6 of Ministerial order n° 009/16.01). Land and unauthorised building and improvement remain held under leasehold as undeveloped lands.

It is has to be recognised that foreigners are not treated as Rwandan citizens in as far as the right to freehold title is concerned. For a foreigner to be granted freehold title, there must be an international convention that Rwanda is signatory to or under condition of reciprocity deriving from bilateral agreements. Only foreigner is treated as a national for land located in Special Economic Zones and can be granted a freehold title without any other condition. For non natural persons, freehold title can be only granted if at least 51% of total shares are owned by Rwandan citizens. (Law n°43/2013).

2.6.5. Property taxation in Rwanda

2.6.5.1. Historical overview on property taxes and fees

Many people may think that property taxation in Rwanda is a new phenomenon which came after land registration program. Since pre-colonial period, people were used to be given land from the King (*Umwami*) and in return they were obliged to pay some tributes as sign of gratitude (MINIRENA, 2004). During colonial period, graduated tax and tax on real property were introduced in Belgian Congo by the Ordinance of August 1912 and it came into force in 1924 when Rwanda was entrusted to Belgian colonial administration after the defeat of Germans (RRA, 2015a).

After independence, the law governing property tax was adopted in 1973. Later in 2002, in a bid to introduce fiscal decentralisation, the Parliament adopted the Law n° 17/2002 establishing resources of revenue for districts and towns and its management. This law was repealed by Law n° 59/2011 establishing the sources of revenue and property of decentralized entities and governing their management. According to article 4 of this law, taxes and fees are among the sources of revenue decentralised entities and they are included in their annual budget. Therefore, in 2012, the GoR adopted the Presidential order n°25/01 establishing the list of fees and other charges levied by decentralized entities and determining their thresholds. This order provides a list of fees and other charges to be collected by districts including land lease fee. However, due to the inexperience of many districts in tax collection and low collection rate, in 2014 the GoR decided to transfer the responsibility of collecting local taxes, including property taxes and fees, from Districts to RRA. The latter collects local taxes on behalf of and for the Districts.

2.6.5.2. Institutions in charge of property taxation

At the policy level, revenue collection and public finances fall under the responsibility of the Ministry of Finance. From August 2015, property-based revenues are collected by RRA on behalf of and for Districts. Collected revenues are deposited on districts' bank accounts. In line with fiscal decentralisation, RRA availed staff at district and sector level to carry out property taxation activities. District staff in charge of revenue follow closely the activities of RRA and inform district authorities about the status of revenue collected. With regard to property valuation, apart from the government institutions, there are private valuers who provide support to the property taxation system. They determine the market values of taxable properties subject to fixed asset tax as explained later in section 2.6.5.4 of this study. Therefore, even if the role of districts seems to be reduced with tax reform, they still have some role to play such as determination of areas to be considered as urban or rural, the establishment of land uses plans, taxpayers mobilisation, enforcement measures in case of unpaid taxes or arrears, etc. Based on this situation, government institutions involved in property taxation in Rwanda are described in Appendix 10.

2.6.5.3. Property taxes and fees existing in Rwanda

As discussed above, property tax legislation provides a series of property taxes and fees to be collected by decentralised entities. This research only focuses on those which cannot be collected without using land records. Those are fixed asset tax provided by Law n° 59/2011 and fees on land lease provided by Presidential order n°25/01.

Fixed asset tax

In Rwanda fixed asset tax is governed by the Law n°59/2011. Article 2, 15° of this law defines fixed asset tax as a tax levied on immovable property. Article 6 of this law gives some clarification about the concept "immovable property" in the context of Rwanda. It includes parcels of land, authorised buildings and all improvements registered with the institution responsible for land registration and for which the owner has obtained a freehold title. The rate of fixed asset tax is fixed at a thousandth (1/1000) of the taxable value per year. However, land used for agriculture, livestock or forestry which is under two hectares, fixed assets used primarily for residential purposes with a value not exceeding Rwf 3,000,000 (≈ Euros 3,505) are exempt from pay fix asset tax. The law extends the exemption to land belonging to the State, to churches, to non-profit organisations and to foreign diplomatic missions.

Fees on land lease

Fees on land lease are the most important source of revenue for districts and it occupies the first place as Musharraf et al. (2013). They are governed by the Presidential order n°25/01. Article 3 of this order provides a list of fees that can be collected by decentralised entities including land lease fees. According to article 9 of this order, any person owning land and holding land lease certificate issued by a competent institution may be subject to pay an annual lease fee. The amount to be paid is calculated on the basis of size, the use and the location of the land. This order provides for minimum and maximum rates for different categories of land and the exact fee to be paid by one square meter is determined by Council of the concerned decentralized entity based on the infrastructure, the area where land is located and its use. The range is between Rwf 30-80 (≈ Euros 0.03-0.09) per square meter for a place considered as urban area, between Rwf 10-30 (≈ Euros 0.01- 0.03) per square meter for a place considered as trading centre, and between Rwf 5-10 (≈ Euros 0.005-0.01) per square meter for a place considered rural area with infrastructure available. This order also fixes the annual land lease charged on land used for agriculture and livestock activities of more than two hectares at Rwf 4000 (≈ Euros 4.6) per hectare.

However, according to article 9 of this order, a land lease fee is not paid for parcels of lands of less than two hectares that are used for agriculture and livestock activities. Since the national average parcel size is 0.35 ha (Sagashya & English, 2007) and 82% of all registered parcels are used for agricultural activities (Musharraf et

al., 2013), the number of parcels used for agricultural and livestock activities subjected to land lease fees is very small. Furthermore, this order also exempts land reserved for construction of houses in rural areas, but where no basic infrastructure has been provided yet. Despite this exemption, it should be noticed that the order does not define what type of infrastructure or the distance to be considered when assessing the accessibility.

2.6.5.4. Activities and actors involved in property taxation

Like in any system, there are some actors involved in property taxation system. They play different roles according to their respective responsibilities and activities involved in taxation process. By analysing the legislation related to property taxation system in Rwanda, actors involved in property taxation process, especially for the fixed asset tax may include taxpayer, property valuer and tax collection office. The Law n° 59/2011 provides for the following procedures for fixed asset tax:

Self-assessment and tax declaration

No later than 31st March in the first tax year of the four-yearly assessment cycle, the taxpayer has to file a tax declaration by filling and sign an official form available at the tax collection office where the property is located. The self-assessment and tax declaration are done once in four consecutive years. However, the taxpayer has the obligation to submit a new tax declaration before the end of the term of four years, if the value of the property increase or decreases by more than 20%. As the taxpayer has an obligation to provide the taxable value of the property, he/she must hire a valuer to determine it and to establish a valuation report to be submitted with the tax declaration. The process of valuation is further explained separately in the next section 2.6.5.4.

Reassessment and notification

The tax collection office receives and reviews the tax declaration filed by the taxpayer within a period not exceeding six months from the reception date. The Law n° 59/2011 does not specify which valuation approach to be adopted in re-assessment. It indicates only some elements to be taken into account namely nature, the general state of the property, location and land use. Once the reassessment is complete, the revenue office notifies the taxpayer. The tax assessment notice includes among others the market value of the property, the tax to be paid and the due date for payment.

Tax payment

No later than 31st March of the following income taxable years, the taxpayer pays the assessed amount to the tax collection office and obtains a tax receipt. The tax is paid in Rwandan currency, in total or in different instalments is requested and authorised by the tax authority.

Therefore, it has to be noted that, the above-mentioned procedure applies also to land lease fee collection except the property valuation and re-assessment which are not relevant as the adopted approach is area-location approach, thus no need to determine the market value of the property. The amount to be paid for the land lease fee equals to the size of the parcel in square meters times the rate determined by district council of the decentralised entity where the land is located. Deadlines for declaration and payment for land lease is 31 December of the taxable year.

2.6.5.5. Property valuation in Rwanda

Methods used for property valuation differ from one country to another. In Rwanda, only properties subjected to fixed asset tax are to be valued on market value basis whereas land lease fees are charged on an area basis. Property valuation is a new profession in Rwanda which was established by the Law n°17/2010. The main focus of this law is the establishment of the Institute of Real Property Valuation (IRPV). This institute is an independent body which has legal personality and autonomy. Valuers carry out property valuation activities as private valuers. Any person practising as property valuer has to be a member of IRPV.

Therefore, Law n°17/2010 not only focuses on the establishment of IRPV but also it provides some insights on valuation methods used in Rwanda to determine the fair market value of the property. According to the law, "valuers apply one or more valuation methods provided by the law or any other method accepted by the Council of regulation. The proposed valuation methods are comparable prices methods, comparison of land values countrywide, replacement cost approach and the use of multiple valuation methods.

As taxpayers have an obligation to file a tax declaration to the decentralized entity where the asset is located, they are obliged to hire a private valuer to get a valuation report to be submitted when declaring the tax. The tax declaration is then reviewed by the decentralized entity where the asset is located and after the reviewing, a notice containing a definitive amount of tax to be paid is sent to the taxpayer. Tax reassessment is done by applying proposed valuation methods. However, due to the fact that data about market transitions are not available in Rwanda, it is very difficult to estimate or to re-assess the market value of taxable property (Kopanyi, 2015). Apart from information on the size, number and the location of the land available in land records, valuers collect additional data from the field as it is explained later in section 4.3.1 of this study. This makes the process very difficult whereas there should not be any problem if land administration system is able to capture all information on transfer transactions. In Rwanda the land market is not yet well developed and not well organised, and sale prices are not recorded to constitute a database for market-based property valuation. In addition, there is a problem of a limited number of qualified valuers in the country and people's awareness of the existence of IRPV.

2.6.6. Financial aspects of land records management and property taxation activities

Organic law n° 12/2013/OL of 12/09/2013 provides that every fiscal year, the government agencies and the local governments plan activities and prepare the budget to be approved respectively by Board of Directors and competent councils of decentralised entities. The Ministry of Finance, on the other hand plans for activities to be implemented by local governments and provides funds to be included in their budgets. In order to support budgets of local governments, every year the Ministry of Finance transfers to them 5% of the domestic revenue collected in the previous year. Local governments submit to the Ministry of Finance a report on the use of funds and subsidies received from the central government.

Property taxation related activities in Rwanda carried out by RRA rely mainly on State budget allocations and funds or subsidies from government or development partners. However, according to article 4 of Presidential order n°25/01, local governments have financial autonomy. They receive not only funds and subsidies from government or development partners but also they are entitled to collect and to use revenue from local taxes/fees, fines, loans, penalties, profit from investments, etc. Property-based revenues are collected by RRA on behalf of and for the districts. All property-based revenues collected by RRA are deposited on districts' bank accounts. Other revenues collected by RRA go into the government treasury.

With respect to land related services, it has to be noticed the daily activities are financed both by subsidies from the central government and funds from development partners. All fees charged on land administration related services go to the public treasury. Therefore, since 2006, the GoR through RNRA has received funds from various development partners such as DFID, the Government of the Netherlands, SIDA, ICF, etc. These funds were made available to finance land reform programs including LTR and the sustainability of land administration system. Currently, the program of capacity building staff and decentralisation of land administration related services at district and sector levels is being implemented by RNRA with funds granted by DFID, SIDA and the Government of the Netherlands.

2.7. Conclusion

Based on key concepts used in this study, this chapter provided a theoretical background on land policy, land registration, land records and property taxation. Land policy is seen as the foundation for land management which is the implementation of various instruments used by governments to deal with land-related issues. In Rwanda, a land policy exists since 2004 and different legal instruments were adopted in order to implement policy guidelines. Concerning land registration, LTR program was undertaken to formalise land rights and the outcome of that program was the issuance of land certificates and the establishment of a digital land registry/cadastre. Not only land information kept in land registry serves as evidence of ownership, responsibilities or charges on land but also it is used by different institutions to support other land management activities including property taxation. With respect to property taxation, two types of property taxes/fees are collected: fixed asset tax which is levied on authorised developed lands holding a freehold title by using market value approach and land lease fee which is levied on all categories of land held under emphyteutic lease. Taxpayers are subject to self-declaration and for fixed asset tax taxable value is determined by private valuers. However, the lack of data on real property markets is one of the main issues that affect property valuation which is still a new profession in Rwanda. Having provided a theoretical background on key concepts, the next chapter discusses the methodology used to collect data in order to answer research questions.

3. RESEARCH METHODOLOGY

3.1. Introduction

This chapter discusses approaches and methods that are used to select the study area and to collect data in order to answer research questions formulated in chapter one. It describes the research approach adopted in this research and provides details on the study area and the criteria of selection. It also gives some insights on techniques used to select respondents for interviews, to collect data and indicates the sources of data. It further discusses methods of data analysis, limitations of data collection and ends with a conclusion.

3.2. Research approach

In order to achieve the research objectives and to answer the research questions, a case study approach was adopted. According to Yin (2003), the case study is more appropriate when the research questions to be addressed are and descriptive (What?) or explanatory (How? or Why?). It allows getting in-depth information on an existing situation or a process within its real world context. The case study is also suitable for a research whose object is to evaluate the impact or the effectiveness of a program or a policy. As the present study aims at describing the existing systems of land records management and property taxation, explaining the use of land information in property taxation and assessing its contribution, the case study approach was found most appropriate. Furthermore, it was argued that case study should not rely on one single source of data. The researcher must explore different sources to get sufficient information. In line with this, for data collection and analysis, both quantitative and qualitative methods were used. Quantitative methods were used for numeric data, for example, the number of registered or taxable parcels and the collected revenues. Qualitative methods were used to obtain non-numerical data that can be categorised and presented in a narrative form such as information about the perceptions of different government officials and taxpayers about different aspects of this research issues. A research design described in Appendix 16 gives a plan showing how different activities were executed in order to complete this research.

3.3. Study area

3.3.1. Criteria for selection

Because of time limitation, all 30 Districts in Rwanda have not been visited. Only one district was selected and findings from that district are used in this research to have an idea of the contribution of land records on property taxation in Rwanda. Three selection criteria were taken into account. Firstly, a district outside Kigali. Secondly, a district with a mixture of urban and rural areas. Thirdly, availability of both taxable properties subject to fixed assets tax and to lease fees. For the purpose of this research Huye District was selected as the study area. It is located in Southern Province and its capital is in Ngoma Sector (former Butare), the second largest city in Rwanda after Kigali. Huye District was chosen because of its characteristic of a mixture of urban and rural areas. In addition, apart from the Districts of Kigali city, Huye District is the second in a number of taxable properties subject to fixed assets tax (Musharraf et al., 2013). In Huye District, there are also both taxpayers subject to fixed asset tax and those subject to land lease fees, and this is not the case for most rural districts where land is held under leasehold and subject to annual land lease fees only.

3.3.2. Description of the study area

3.3.2.1. Location and the map of the study area

With the total surface area of 518.5 square kilometres, Huye district is located in Southern Province of Rwanda. It shares borders with Nyanza district in the north, Gisagara district in the east, Nyaruguru district

in south and Nyamagabe district in the north-west. The district is divided into 14 sectors, 77 cells and 509 villages. Given the fact that, the majority of parcels of land subject to fixed and annual land lease fees are those located in urban areas and in trading centres, this study focused mainly on two urban sectors in which namely Ngoma and Tumba and a peri-urban sector, Mukura. These three sectors are composed of 13 cells in total. Among these 13 cells, this research only focuses on 8 cells classified as urban or peri-urban because the remaining cells do not have land subject to property taxes or fees. Figure 3-1 and 3-2 show the map of Huye district, selected sectors and selected cells in the study area.

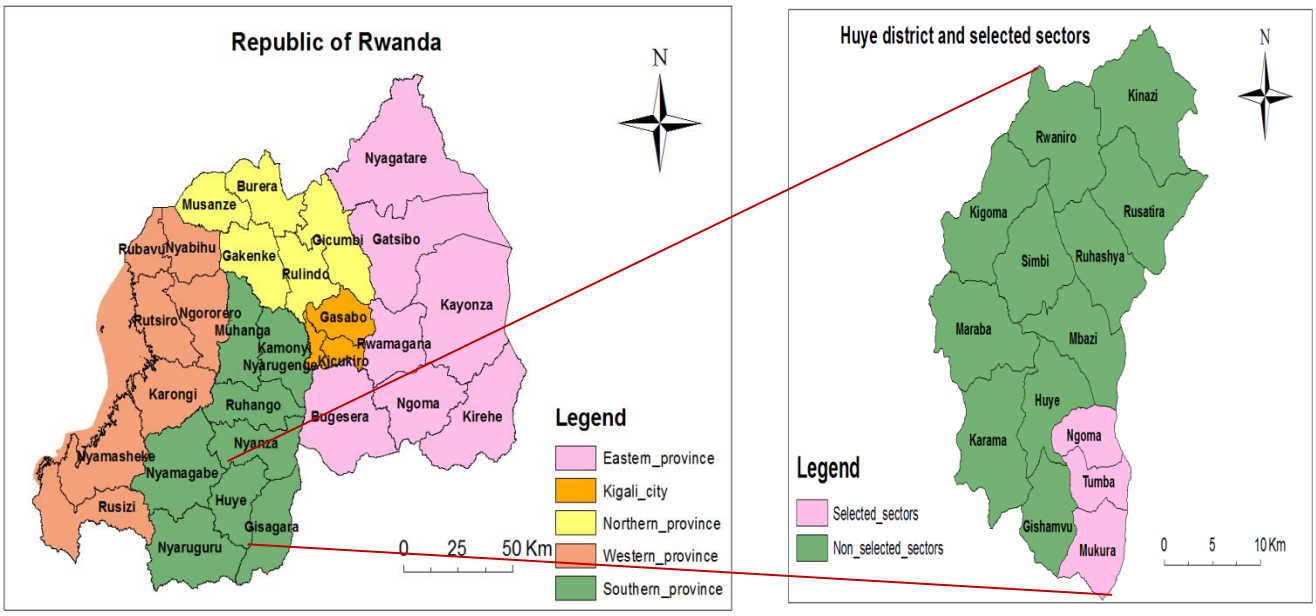


Figure 3-1. Map of study area

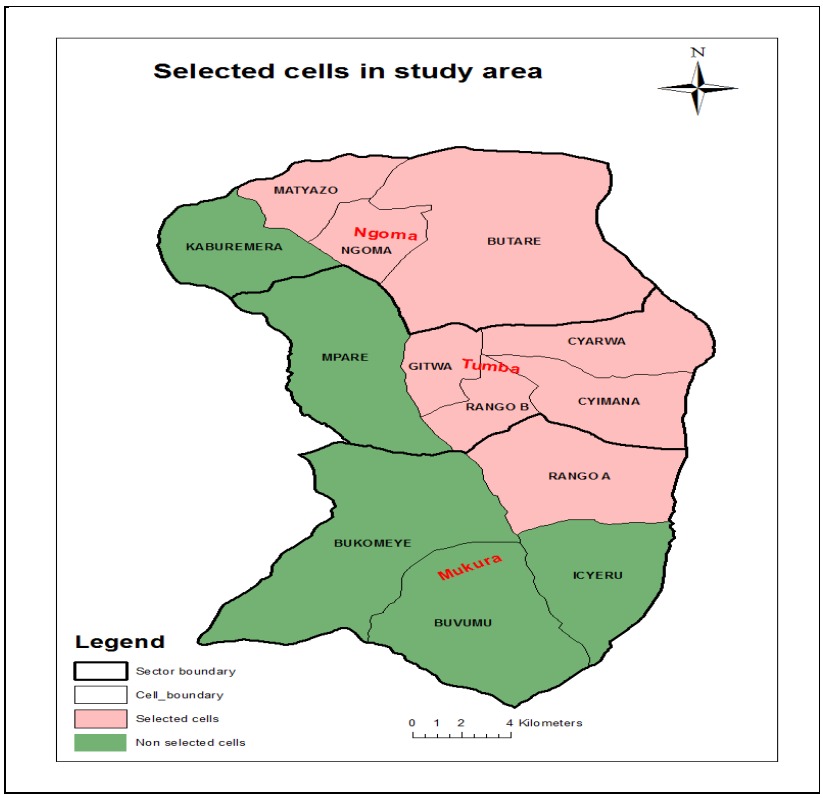


Figure 3-2. Map of selected cells

3.3.2.2. Tax and land related information

The city centre, the majority of commercial buildings and the education facilities are located in 2 cells of Ngoma sector (Butare and Ngoma) whereas 4 cells of Tumba sector are dominated by residential houses. In Mukura sector, only one cell is being urbanised and is dominated by residential houses. In these 8 selected cells, the number of registered parcels is 14,421 and amongst them, only 5240 parcels (36.3%) are subjected to property taxes/fees. The remaining parcels are exempted from paying property taxes/fees because some of them are less than two hectares and used for agricultural activities and other are public land. Parcels with the size less than two hectares are 1,4157 (98.2% of registered parcels) whereas those with the size of more than two hectares are 264 (1.8% of total registered parcels). Overall average parcel size is 0.16 ha and residential is the most predominant land use with 70.6% of the total registered parcels. Parcels owned by private individuals are 13,715 (95.1% of registered parcels) and those belonging to the State are about 706 (4.9% of total registered parcels). Current situation of land registration and property taxation in the study area is described later in chapter 4 of this study.

3.3.2.3. Socio-economic description of the district

Huye district has a population of 314,022 inhabitants with a density of 540 inhabitants per square kilometres (Huye District, 2016). The population annual growth rate is 3.5% and the majority of the population (55%) range between 15 and 65 years. The illiteracy of people aged 15 years and above is estimated at 42.3 % of the total population of the district. For economic considerations, it has to be noted that more than 90% of the population of Huye district rely on subsistence agriculture. The remaining people are employed in commercial activities, industries, craft, and other non-agricultural activities (MININFRA, 2011).

3.4. Sampling techniques for interviews

Kumar (2005) defines sampling as the "*process of selecting a few from a bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding bigger group*". Due to time and financial limitations, only a limited number of respondents participated in the interviews. Both taxpayers and government officials dealing with property taxation and land matters were selected. Government officials were selected based on the relevance of their positions to the management of land records and the property taxation. For taxpayers, the sample size determination and sampling strategy are explained below.

3.4.1. Sample size determination for the taxpayers

The sample size is one of the factors that influence the level of accuracy of the results. Kumar (2005) stresses that before determining the sample size, the researcher has to think about how the outcome will help test results, findings or hypotheses. The budget and the time allocated for the data collection also plays a role in determining the size of the sample. Consequently, within these constraints, the researcher has to apply some techniques to select elements that represent the sampling population efficient and adequate manner. To determine the sample size for this study, the following sampling formula of Alain Bouchard was used:

$$\text{Sample size } (n) = \frac{(Z\alpha/2)^2 * p(1-p) * N}{[(E^2)*N] + [(Z\alpha/2)^2 * p(1-p)]}$$

where, N=population size (5240 for this study), p= Estimated frequency or probability (p=0.5 or 50%), E=Tolerable error (0.15 or 15%), Zα/2= Confidence interval (1.96 for 95% level of confidence).

$$\text{Sample size } (n) = \frac{1.96^2 * 0.5^2 * 5240}{[(0.15^2)*5240] + [1.96^2)^2 * 0.5^2]} \approx 40$$

In this study estimated frequency or probability (p) means the measure of the likelihood for one element to be selected. It is quantified as a number between 0 and 1, where 0 represents impossibility and 1 represents certainty. As it is possible for an element to be selected or not, the probability of being selected equals to

the probability of not being selected thus, the probability is 1/2=0.5 (50%). Concerning the tolerable error, a margin of 15% was used. According to UNSD (2005), recommended tolerable errors range between 5 to 15 percent. If financial means allow, 5-10 percent tolerable error is the best for important indicators otherwise 12-15 percent may be used. For this study, the choice of 15 percent tolerable error was influenced by time and financial constraints. The confidence interval of 1.96 is the standard for assigning the degree of confidence of 96-percent needed in assessing the margin of error.

3.4.2. Sampling strategy for taxpayers

The population of interest was composed of taxpayers subject to fixed asset tax and land lease fee from 8 cells of selected sectors. The total number of taxpayers in these selected sectors is 5240. Based on their administrative boundaries, cells were considered as strata and the number of taxpayers to be selected in each stratum was determined by using disproportionate stratified random sampling. According to the formula of Kumar (2005), the number of taxpayers to be selected in each stratum for this study is 5 which equals to the sample size divided by the number of strata (40/8=5). Therefore, within each stratum, in order to have both taxpayers subject to fixed asset tax and land lease fee represented, a selection was done according to the type of property tax or fee paid and to its proportion in the total number of all existing taxpayers of selected sectors. As the majority of parcels in the study area were found to be subject to land lease fee (95%), in each cell 4 taxpayers for this category were selected and 1 taxpayer for fixed asset. After determining the number to be selected from each stratum, simple random sampling was used to specify each taxpayer to be interviewed.

3.5. Preparation of data collection tools

There are a number of activities that have to be executed in order to prepare the fieldwork or the data collection. One of these activities is the preparation of tools to be used in the collection of data and Kumar (2005) gives the example of questionnaires, interview questionnaires or interview guides. In light of this research, four types of interview questionnaires were designed for collecting primary data. Respectively, they were reserved for taxpayers (see appendix 1), government officials in charge land records at central and district level (see appendix 2), government officials in charge of property taxation at central and district level (see appendix 3), and top district officials (see appendix 4).

3.6. Sources and methods of data collection

3.6.1. Primary data sources

3.6.1.1. Interviews

In this research interview is one of the methods that was used to collect data. According to Kumar (2005), an interview is "any person-to-person interaction, either face to face or otherwise, between two or more individuals with a specific purpose in mind". Structured and semi-structured interviews with a combination of open-ended questions and closed questions were used to collect information to address all research questions of this study. The collected information concerns the existing systems of land records management and property taxation, the quality and the usability of land records and their contribution to the property taxation. A semi-structured interview was used for 12 government officials from different institutions dealing with property taxation and land matters. The use of semi-structured interview is justified by the fact that it helped to get in-depth information by asking flexible questions with the freedom to add additional questions not provided in interview guide. Given the fact that the number of taxpayers who participated in this study is 40 and the limited time allocated for the fieldwork activities, the use structured interview was convenient. It helped to elicit information from them in a quick way because it saves time and to be focused only on research objectives.

3.6.1.2. Direct Observations

Observations are another method that can be used for collecting data. They help to complete and to confirm information collected through interviews, questionnaires and reports. Concretely, direct observations were done to address the research questions number 2, 3 and 4 of the specific objective 1 and the research questions number 2 and 3 of the specific objective 2. In this regards, visits were conducted in the tax administration offices to see how they collect property taxes and fees. In addition, with respect to the suitability of land records in relation to property taxation, field surveys were conducted in order to take some samples to be compared with land information kept in the land registry. To do this, 3 pending requests related to the correction of the parcel were taken from RNRA to be verified. Printed Ortho-photos with cadastral information were acquired from RNRA to be used in the field visits. With the guidance of landowners and RNRA staff, field visits were conducted in order to realise the situation on the ground compared to what is in LAIS.

3.6.2. Secondary data sources

Laws and other legal instruments were analysed to get ideas on how property taxation and land records are organised in Rwanda. These findings from laws were used to address the research questions number 1, 2 and 4 of specific objective 1. Reports and documents held by different government institutions and organisations helped to get some statistical data about how land records contributed to the increase in the amount of collected property-based revenues. In addition, reports on land lease and fees collected from 2011 were collected from Huye District and RRA. Collected data from various reports were used to address the research questions of the specific objective 2 and 3 of this study. Finally, ortho-photo, spatial and non-spatial data of all registered parcels in the study area, and Huye District master plan were acquired from RNRA and Huye district OSC. They were used to satisfy some concerns of the specific objective 2 namely to assess the correctness and the completeness of land records and their conformity with other sources of the information like master plans. Finally, books, journals, papers and other relevant resources available on the internet helped to get some insights in property taxation and land records and their interaction.

3.7. Data processing

Three procedures are involved in data processing whether it is a qualitative or quantitative study. They include editing, coding and analysis of data collected from the field.

3.7.1. Editing and coding

According to (Kumar, 2005), editing is to clean the raw data and make it free of inconsistency and incompleteness. The problems of inconsistency or incompleteness can result from the omission to ask a question or to record a response; the wrong classification of response, a mistake in writing responses, etc. All responses given by respondents were checked carefully one by one in order to identify and correct them if necessary. This process helped in improving the quality of the raw data. .

3.7.2. Coding and data analysis

Coding consists of labelling and categorising certain aspects of collected data in order to communicate the findings (Kumar, 2005). The first step in coding was to identify categories in which each collected item of information can be classified. Once categories are known, distinctive codes were assigned to each category in order to make the analysis of information easier. This was done directly into the computer using a software called Atlas-TI for qualitative data and excel sheets for quantitative data. In order to analyse collected data, a procedure proposed by Kumar (2005) was adopted. A frame of analysis was developed in order to specify which variables to be analysed and how (frequency distribution) and to indicate variables to be combined in order to construct major concepts. Once the process developing a frame of analysis was finished, data were analysed with the help of Atlas-TI software and excel sheets. For quantitative data, frequencies were calculated and cross-tabulation variables were simultaneously used to analyse responses in

relation to each other. For qualitative data, content analysis was done and the contents of interviews or observational field notes were examined. Responses were classified under the main themes by using Atlas-TI software. Themes and responses were integrated into the report where they correspond.

In addition, UML activity diagrams were designed by using Enterprise Architect software in order to study the existing property taxation process. Therefore, for spatial data analysis, orthophotos of 2008 used in land demarcation and current Google image were used to demonstrate changes in parcel boundaries. Current Google images were downloaded by using universal map downloader and orthophotos were acquired from RNRA. Images of a selected place in the study area were processed by using ArcGIS and spatial data related to boundaries of parcels were overplayed on two processed images. These images were used to detect issues related to cadastral updating. After the processing of two images, differences in cadastral spatial status were detected by comparing images of different periods. Furthermore, ArcGIS was also used to analyse the conformity between the existing land use information kept into LAIS and those provided into the district master plan. In addition, ArcGIS was used to measure the accessibility of 40 selected parcels to public infrastructure. Finally, ArcGIS helped to draw different maps used in this study.

After analysing the data, findings were presented by using text, tables, graphs and maps. A report was written to make findings available in the form of a document.

3.8. Limitations of data collection

Collection of data is one of the important activities involved in research. Limitations and challenges that the researcher encounter affect the outcome of the research if not mitigated. Even if the researcher managed to collect the necessary data, challenges and limitation encountered must be highlighted. The main limitation was the time allocated for fieldwork activities. A certain amount of time was spent in getting permission from government officials and some fieldwork activities started with a delay in relation to how it was planned. As the study was conducted in an urban area, some respondents were not around and it was required to change the date planned for the interviews according to their availability. Some needed records on property taxation and land records could not be found because of the recent transfer of the responsibility for collecting local taxes from local governments to RRA and at such a transitional stage records can be misplaced.

3.9. Conclusion

This chapter on methodology explains the research approach adopted in this research. It provides details on the study area and the criteria of selection. Methods and techniques for determination of the sample size and sampling strategy are discussed in this chapter. Collection of data by using interviews, direct observations, literature review and secondary data were used to get the information needed by the researcher in order to answer the research question. This chapter concludes with details on data processing, data display and limitations to the data collection.

4. RESULTS

4.1. Introduction

This chapter presents results of data collected from interviews with taxpayers, government officials dealing with land records and property taxation, from secondary sources, as well as from direct observations. They concern the process of property taxes/fees collection, land records management, the use of land records and their contribution to the ability of tax authorities to raise property-based revenues.

4.2. Types of taxes and fees associated with land and improvements

4.2.1. Current situation of property taxation and land registration in the study area

During the land registration program, all land in Huye District was registered and land certificates were issued to landowners. With respect to property taxation, results shown in figure 4-1 indicate that in 8 selected cells of the study area, only 5,240 out of 14,421 parcels (36.3% of all registered parcels) are subject to property taxation. The remaining parcels are exempted from paying property tax/fee because of one of the reasons mentioned in the section 2.6.5. of this study. In addition, a map showing taxable and non-taxable parcels can be found in appendix 15.

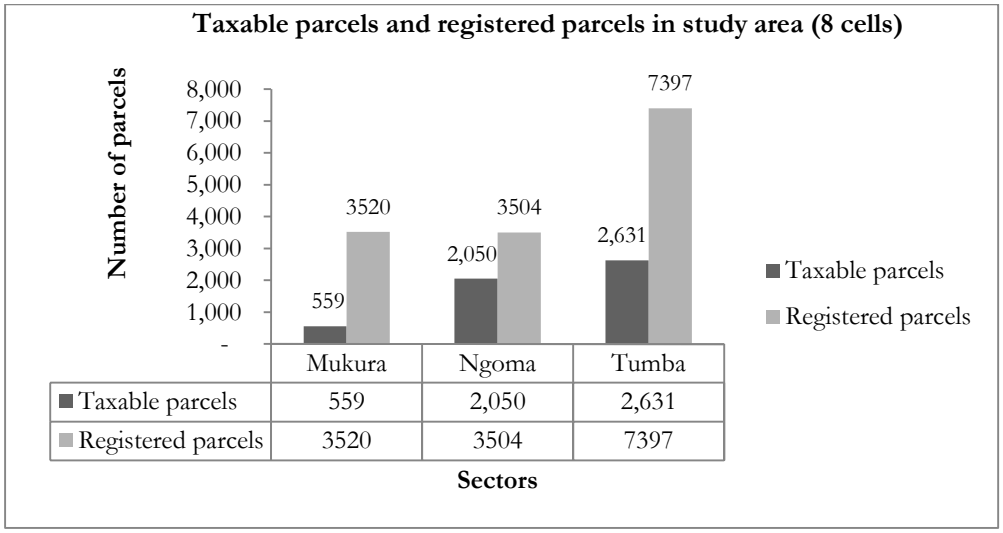


Figure 4-1. Taxable parcels and registered parcels in 3 selected sectors (Source: Huye District & RNRA, October, 2015)

Throughout the interviews with taxpayers and officials in charge of property taxation, two types of property taxes/fees are collected in the three selected sectors for the study. Those are namely fixed asset tax and land lease fee. The distinction between them is based on the land tenure regime of the landowner. Freeholder pays fixed asset tax whereas leaseholder pays a land lease fee. However, during the interviews, it was noticed that the nature of the land lease fee is not clear and many people consider it as a tax rather than a fee. Results revealed also that land lease fee is more dominant than fixed asset tax. District and RNRA staff in charge of land records indicated that the predominance is due to the fact that during the systematic land registration landowners were given land lease as default land document, others do not fulfil all requirements to get a freehold title or do not see any difference whether to pay a tax or a fee.

4.2.2. Requirements for land to be subject to property tax or fees

Not all land is subject to property taxes or fees. Law n°59/2011 and Presidential order n°25/01 determine certain criteria for a parcel to be qualified as taxable property. These criteria are among others the location of the parcel, the size of the parcel, holding a land certificate and access to infrastructure.

4.2.2.1. Location of the parcel

Location of the parcel is one of the parameters that have to be considered in property valuation or in calculating the amount of land lease fee to be paid. It determines the category in which the land could be classified. When comparable price method is to be adopted, prices vary depending on the location of the land. A land located in the city centre has a higher value than that a land located in other areas of the city or in remote and rural areas. Therefore, for land lease fee, three categories or areas are to be taken into account namely urban areas, trading centres and rural areas with infrastructure. In Rwanda, tax rates for land lease fee or the value of land change according to the location of the land or property. Land located in urban areas are levied at higher tax rate than land located in the trading centre or in rural areas.

4.2.2.2. The size and land use of the parcel

Depending on activities practised on the land, for example agricultural activities, the size of the parcel matters when it comes to the consideration of its effect on the productivity. Interviews with tax authorities revealed that agricultural lands of less than two hectares are exempted from paying property taxes and fees. If the land has more than two hectares the first two hectares will be exempted and tax or fee will be levied only on the excess land. One of the respondents from tax authority remarked that such an exemption is too generous as the agriculture is the dominant land use and the majority of parcels are less than 2 hectares. Agricultural parcels with size less than two hectares are 2466 (17.1% of registered parcels). Figure 4-2 illustrates the situation of existing land uses in 8 selected cells of the study area where the number of residential parcels is bigger than others (70.6% of registered parcels) and the second land use in number is agriculture with 19.3% of total registered parcels in 8 selected cells.

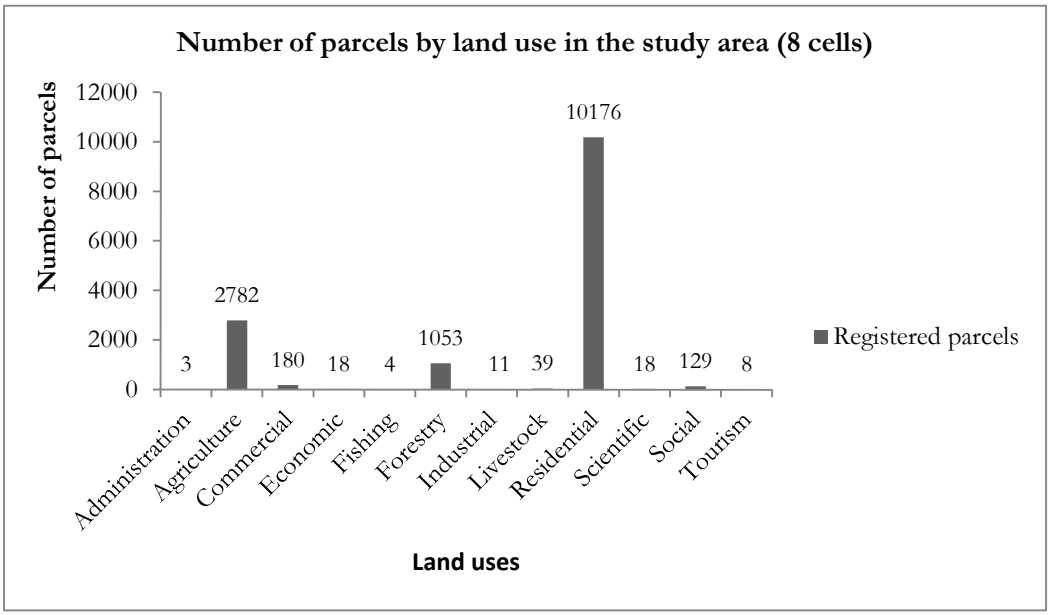


Figure 4-2. Number of parcels by land use (Source: RNRA, October 2015)

4.2.2.3. Holding a land certificate

Property tax and fee are levied only on registered parcel for which a land certificate was issued. If there is no claim registered on the parcel it is not possible to know the person whose obligation is to pay property tax or land fee. Throughout the interviews, government officials in charge of land records and property taxation mentioned that there is a problem of parcels whose owners are not known and thus there is no tax or fee to be levied. Results indicate that the number of parcels without full information is 2.3 million countrywide and 3,467 in the study area (8 cells). The majority of those parcels belong to people living aboard or to those who live in Rwanda but did not manage to be present during systematic land registration to provide land information.

4.2.2.4. Access to infrastructure/services

Access to infrastructure/services in one of the requirements for a parcel to be subject to property taxes/fees. In interviews with taxpayers and during field observations, it was noticed that the majority of parcels have access to services and infrastructure provided by Huye district. As shown in table 4-1 the majority of selected parcels in the study area have access to public services and infrastructures such as electricity (92.5%), roads (75%), education (65%), public transport (57.5%), health facilities (52.5%) and water supply (67.5%). The average of access to all these infrastructure/services for selected parcels is 68.3%. Therefore, all respondents revealed that there are no recreation facilities and waste management services provided by the government in the study area.

Table 4-1.Accessibility of parcels to infrastructure and services

Infrastructure/service	Parcels with access	Percentage	Parcels with no access	Percentage	Total Parcels
Electricity	37	92.5%	3	7.5%	40
Roads	30	75.0%	10	25.0%	40
Education *	26	65.0%	14	35.0%	40
Public transport*	23	57.5%	17	42.5%	40
Health facilities*	21	52.5%	19	47.5%	40
Water supply	27	67.5%	13	32.5%	40

* For the purpose of accessibility analysis, a distance of 1 km to public primary schools, to the bus stop or to the nearest public health centre or hospital were considered.

4.2.3. Tax rates in the study area

With respect to the fixed asset tax, the Law n°59/2011 provides a fixed rate of 1/1000 (0.001%) of the taxable value per year. For land lease fee, the rates proposed by Huye District Council are Rwf 50 (≈ Euros 0.06) per square meter in urban area, Rwf 10 (≈ Euros 0.01) in trading centres and Rwf 6 (≈ Euros 0.007) in the rural area where infrastructure are available. Categorisation of lands according to the location is approved by the District Council upon the proposal of District Executive Committee and in accordance with the land use plan. However, some respondents, especially those who have parcels which are located a bit far from city centre, said that they do not agree with the category of their land and should not be treated as those which are located in city centre thus the rate should not be the same.

4.2.4. Taxes/fees rates appreciation

Even though the rates proposed by Huye District Council are within the range provided by the law, the majority of taxpayers interviewed said that the tax rates are very high. As shown below in figure 4-3, according to 18 respondents the tax rate is too high, for 9 respondents it is high, for 12 respondents it is fair and for 1 respondent it is too low.

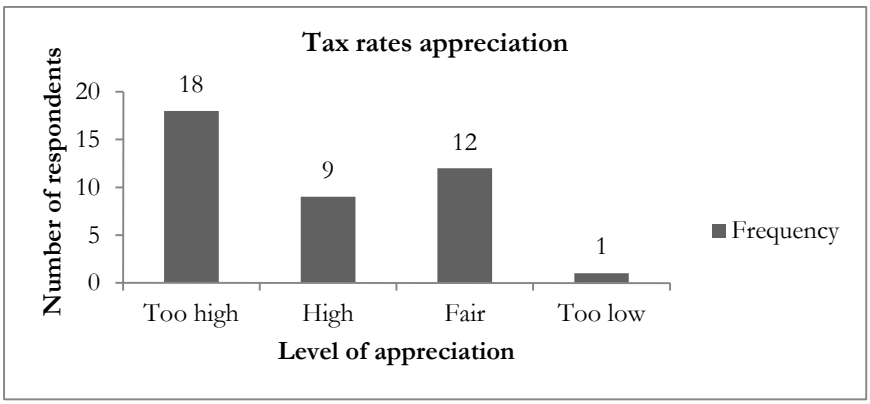


Figure 4-3. Appreciation of tax rates by taxpayers.

During interviews with taxpayers, they remarked that zoning classification of properties subject to land lease fee is not fair as all properties located within the same cell are charged at the same rate without considering their importance or the income that they generate. In addition, they indicated that land the law does not lessen the tax burden on lower income groups. However, those who are subject to fixed asset tax indicated that the tax rate is fair as the tax to be paid is determined on a market value basis.

4.2.5. Perceptions on the motivations for the taxpayers to comply with tax obligation

There are reasons which push taxpayers to comply with property tax obligation. Results from interviews with taxpayers revealed that 15 out of 40 (37.5%) pay property taxes/fee in order to avoid penalties or other administrative measures. Therefore, 12 out of 40 (30%) respondents revealed that it is their culture or attitude to fulfil obligations provided by laws. Another category is composed of 8 out of 40 (20%) respondents who revealed that they comply because they are financially able to pay. Finally, 5 out of 40 (12.5%) respondents revealed that they pay property taxes/fee because they recognise that paying property taxes or fees is to support government projects benefiting to the whole population. These results show that the majority of landowners in the study areas pay property taxes or fees not because they enjoy the benefits from paying taxes but because of other reasons mainly the fear to be punished.

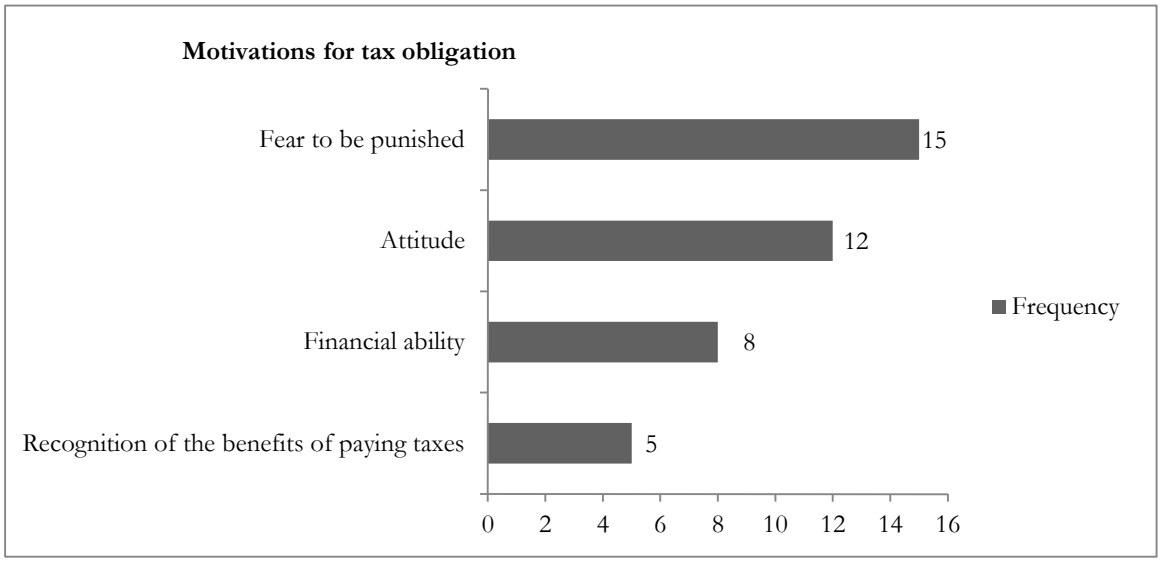


Figure 4-4. Motivations for the taxpayers to comply with tax obligation.

4.3. Activities, actors and their roles in collection of property taxes and fees

4.3.1. Property taxation process

It was revealed through interviews with taxpayers and government officials in charge of property taxation that the process of tax collection and actors involved depends on the category of property tax or fee. The distinction is made between the process used to collect fixed asset tax and land lease fee.

4.3.1.1. Fixed asset tax process

The process of collecting fixed asset tax involves five activities namely valuation, self-declaration, re-assessment and tax notification, tax billing and tax payment. Actors involved in the process include the taxpayer, the real property valuer, the revenue officer, RRA&RNRA systems and the bank.

Overview of the process

As shown in appendix 5, the following is the process for fixed asset tax: The taxpayer hires a private valuer to do a valuation of the property and a report valuation is established. The taxpayer goes to sector/district office to file a tax declaration. The taxpayer provides the valuation report to the sector/district officer in

charge of revenue collection. Officer in charge of revenue collection reassesses the declared value and notifies the taxpayer. If the taxpayer agrees with the assessed value, he/she continues with the payment. Revenue officer enters the Unique Parcel Identifier (UPI) into the RRA system. RRA system calls LAIS and the latter confirms parcel information and sends the UPI, location (province, district, sector and cell), names of the owner, representative's name, owner's ID number, land use and parcel size. If the UPI is invalid, the system notifies the user with a message on the screen. If the UPI is valid, RRA system provides to the revenue officer a window where to fill the approved value of the property. Then RRA system calculates the tax amount based on the tax rate and the assessed value of the property. RRA system then generates ticket details with a reference number. With the ticket details, taxpayer goes to the bank and to pay off the due amount. The bank calls RRA system to verify ticket details. If the ticket is valid, the bank teller approves the payment and provides a bank slip to the taxpayer. Upon payment approval, RRA and RNRA databases are updated.

General findings on the process

From interviews with taxpayers subjected to fixed asset tax, it was revealed that the majority of respondents are satisfied with the declaration and tax payment process. However, they indicated that they are not satisfied with the fact that they have to cover all property valuation costs. One of respondent said: "*It costs a lot of money to pay a private valuer and thus unfair to give a taxpayer a double responsibility. The government should have its own valuers and to do it freely. Our responsibility should be only to pay taxes*". On the government side, one respondent from tax authority said, the process of self-declaration is provided by the law and should be followed as it is. The respondent revealed also that taxpayers are not required to file a valuation report each year because a new revision of market value has to take place after 4 years. The taxpayer pays the first self-assessed tax amount in four consecutive years without filing a new tax declaration and receiving an assessment notice.

With regard to property valuation, it was noticed that the private valuer determines the market value of the property subject to fixed asset tax by using methods described previously in the section 2.6.5.4. It was also revealed that there is a lack of necessary data to estimate the market value of the properties in case the sales comparison approach is adopted. As a result, it was observed that replacement cost approach is more preferred by private valuers than comparable prices approach. As land records provide only some few information like the size, the number and the location; valuers rely on their own data collected from the field. Additional data that they collect are related to the buildings or improvements namely their size, construction materials, volume, date of construction, etc. Data collected are used to calculate what it would cost to replace the land, buildings and other improvements.

Moreover, the issue of the lack of data on market transactions also hinders the efficiency of the tax declaration re-assessment. Even though the law does not specify the which valuation approach to be used, it is obvious that the use of valuation techniques in the re-assessment is very necessary. One respondent from the district indicated that due to financial limitations, they do not make calculations for each declared property. They only check if the declared value is reasonable taking into account nature, the state, the location and the use of the property. If they suspect that the property was underestimated they compare it with other property values of the same category found in valuation reports submitted and they adjust the value. The respondent further indicated that they believe in what private valuer did as they are bound by their code of conduct and most cases declared values are used to be reasonable. In addition, the respondent said that the cost of valuation by applying conventional approaches may be greater than the property tax/fee to be paid. Since the tax authority does not have enough and qualified staff it will be requested to hire private valuers.

4.3.1.2. Land lease fee collection process

With respect to the land lease fee, it was revealed that the analogue system process was replaced by the online system from August 2015. With the new system, the taxpayer subject to land lease fee can do declaration with or without assistance of revenue office.

Overview of land lease collection process with assistance of revenue office

Based on laws, interviews, discussions and direct observations, three actors are involved in this process namely taxpayer, revenue officer, RRA system and bank. The process is described in appendix 6 and can be summarized as follows: The taxpayer goes to sector/district office to file a tax declaration. He/she provides the land certificate to the sector/district officer in charge of revenue collection. Revenue officer enters the UPI into the RRA system. Then RRA system calls LAIS and the latter confirms parcel information UPI, location (province, district, sector and cell), names of the owner, representative's name, owner's ID number, land use and parcel size. If the UPI is invalid, the system notifies the revenue officer with a message on the screen. If the UPI is valid, RRA system calculates the total fee based on the parcel size, land use, taxable period and the lease fee rate as determined by the District Council. RRA system then generates ticket details with the reference number. With the ticket details, the taxpayer goes to the bank institution to pay off the due amount. The bank calls RRA system to verify ticket details. If the ticket is valid, the bank teller approves the payment and provides a bank slip to the taxpayer. Upon payment approval, RRA and RNRA databases are updated.

Overview of land lease collection process without assistance of revenue office

With the new online system, the tax declaration and payment of land lease fee by taxpayers are done by using mobile phone or computer with internet connection. As described in appendix 7, the following is the process: With the mobile phone dials an USSD code (*800#) or goes online at www.rra.rw if he/she uses a computer with internet connection. A window with different services including land lease fee RRA is provided to the taxpayer. For this service, the taxpayer chooses land lease fee item and provides the UPI. Telecommunication company's system or RRA system calls LAIS and the latter confirms parcel information UPI, location (province, district, sector and cell), names of the owner, representative's name, owner's ID number, land use and parcel size. If the UPI is invalid, the system notifies the client with SMS or on the screen of the computer. If the UPI is valid, RRA system calculates the total fee based on the parcel size, land use, taxable period and the lease fee rate as determined by the District Council. RRA system then generates ticket details with the reference number and sends it to the taxpayer in the form of SMS or a PDF file in case of internet-based declaration. With the ticket details, the taxpayer goes to the bank to pay off the due amount. The bank calls RRA system to verify ticket details. If the ticket is valid, the bank teller approves the payment and provides a bank slip to the taxpayer. Upon payment approval, RRA and RNRA databases are updated.

General findings on the process

It has to be noted that currently taxpayers prefer to go through the process with assistance of revenue office. By using this process, they get helped by RRA staff at revenue collection offices, as many of them do not have skills to deal with online services. In addition, many taxpayers do not know the existence of the new system. The majority of them get informed about it when they arrive at tax the collection office where they were used to go. Awareness about the new online system is still low and challenging for taxpayers who do not have skills in using IT Technologies and have to do tax declaration online by using the mobile phone or thw internet. Respondents from RRA indicated that, for taxpayers who are not able to declare online, they have availed staff at sector level to help them to do tax declarations and to provide them with reference numbers to use for tax payment in the bank. Training sessions about the use of online tax system have been provided to the taxpayers, to the owners of Internet Cafe and to the government officials whose jobs are connected to property taxation. One respondent from district OSC said that they help clients who come into their office by showing them how to go online when they have to pay taxes or fees for the service.

4.4. Management of land records in Rwanda

4.4.1. Types of land records existing in Huye District

As far as the format of land records is concerned, since colonial period the management of land records in Rwanda was paper-based until 2012 when a digital land registry/cadastre was developed. The land registry was developed to store digitally all land information collected in during systematic land registration which took place from 2009 to 2012. With this situation, both paper-based and digital land records coexist in the study area. During the visits at Huye District, land records kept there at district OSC were seen. Government officials in charge of land registration revealed that even though the cadastral system is now computerized, physical land files established before 2012 are still useful when there is a need to trace the history of the land. Therefore, they indicated that for now supporting documents for every processed file are scanned and stored in the system which makes the searching easier.

According to the purpose of the cadastral information, it has to be recognised that, the intention of National Land Policy was to establish multipurpose land registry/cadastre capable of supporting different land management activities including property taxation. As indicated by respondents from RNRA, LAIS stores spatial and non-spatial land information pertaining only to land tenure and land use, and it is mainly used for maintenance of land records. They further said that the system is also capable of providing information needed to perform some land management activities but at the current situation, the system does not have all required information to support all activities. It lacks certain information on the value of properties, on the buildings and other improvements on land, sale prices, infrastructure system, public utilities, transport, etc. In an interview with one top manager of RNRA, it was revealed that there is a plan to start recording sales prices for every land transfer registered in LAIS in order to establish a database for land market information that will be used in property valuation.

From the legal point of view, it has to be recognised that only formal land records are recognised and protected by the law in Rwanda. In line with this, the GoR initiated a systematic land registration in order to allow every landowner to register his/her land at an affordable price to everyone. Before the LTR, only 1752 parcels were registered and held in the formal way in the study area. As land registration bacame compulsory to every landowner, the number of registered parcels in the study area increased from 1752 to 30463 (over a 1739% increase). The figure 4-5 shows the situation of land records before and after land registration program.

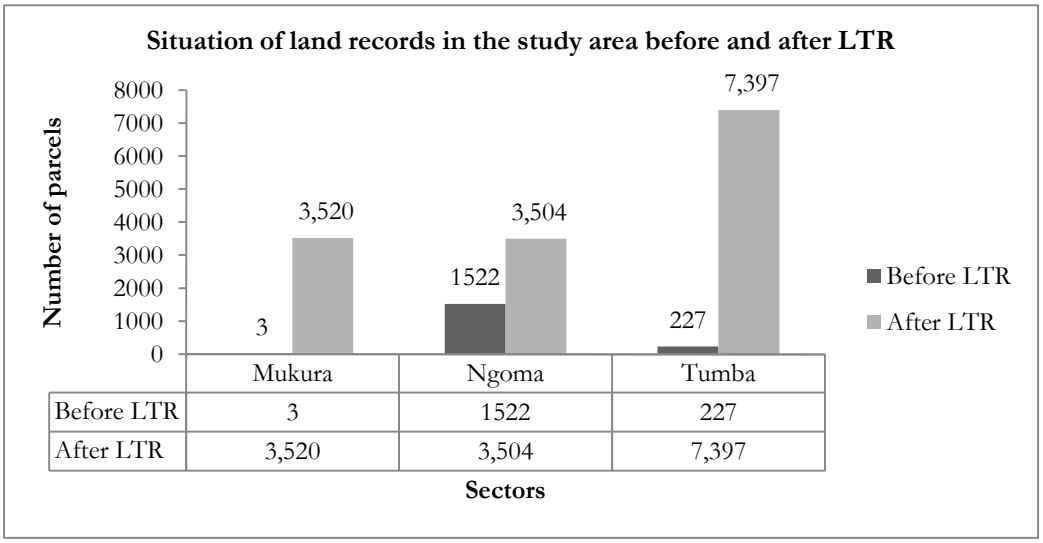


Figure 4-5. Situation of land records before and after LTR (Source: Huye District & RNRA, October, 2015)

4.4.2. Maintenance of land records and land information infrastructure in Rwanda

Maintenance of land records is one the key issues that land administrators have to address. In 2012, the GoR, through RNRA, launched a system to be used in the maintenance of land records and to facilitate the flow of information between different stakeholders. The process of updating land information starts from the Sector office or district OSC whereby applicants submit their applications. Applications submitted to sector office are checked and then sent to the district OSC for processing. In the district OSC, all applications are checked and processed by the LAIS processor, except those requesting first registration or special cases that require legal expertise which are submitted to the offices of the registrar of land titles at the provincial level for further processing.

After receiving and checking application, the authorised staff enters in the system, applies, books and accept the transaction. Supporting documents are scanned and administrative data are processed by LAIS processor and spatial data by GIS professional. Administrative data are stored in Adm Server whereas spatial data are stored in GIS server. Processed transactions are then notified to the registrar of land titles for approval. For each transaction, the output can be a land certificate, lease contract and extract of the cadastral plan. In some cases, the output can be an annotation put in the LAIS database. However, for the applications with spatial changes, the process starts only from district OSC and the processing and approval is done in the Office of Registrar of Land Titles. Figure 4-6 illustrates how LAIS is used for land records maintenance.

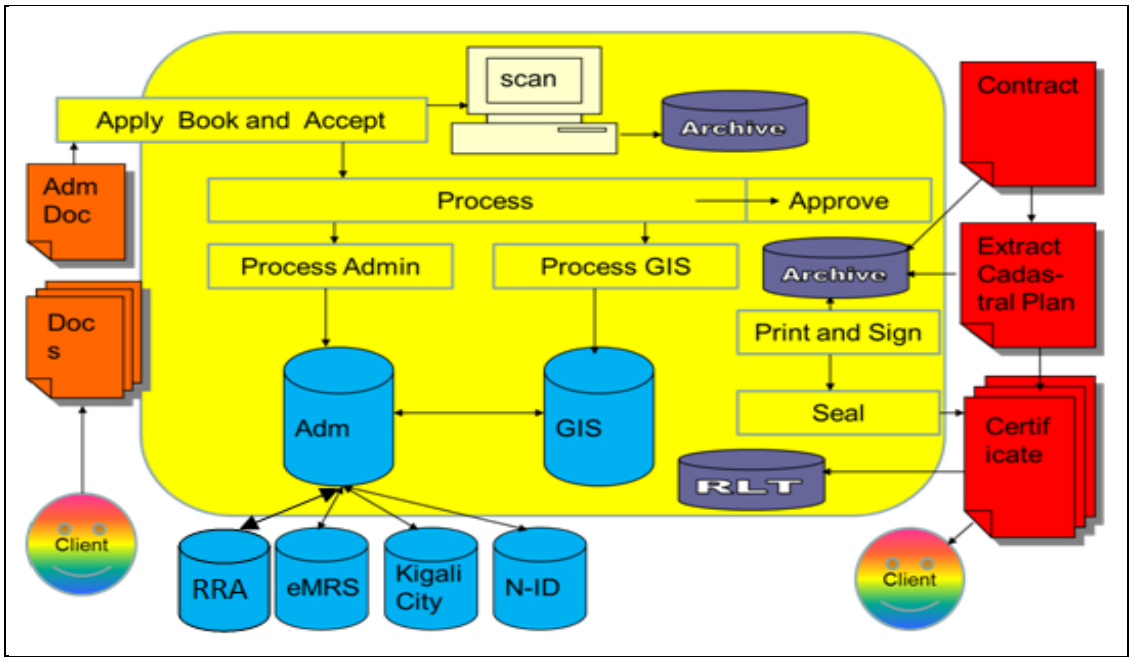


Figure 4-6. LAIS architecture (RNRA, 2013a).

As far as land information infrastructure is concerned, it has to to noticed that LAIS is held centrally by RNRA and different users are connected through VPN connectivity. Authorised staff can access the system by using a web browser on the internet at RNRA headquarters, provincial offices and district OSCs. Looking at this architecture as described in figure 4-6, it can be seen how LAIS interacts with other government institutions like RRA, City of Kigali, National Identification Authority (NIDA) and Rwanda Development Board (RDB) through e-Mortgage Registration System (e-MRS). For some systems, there is a reciprocal exchange of information with LAIS (e.g. e-Mortgage Registration System and RRA's tax collection system), others fetch information from LAIS without providing information in return (e.g. Kigali City Construction Permitting System) whereas others provide LAIS with information without any information in return from LAIS.

4.4.3. Attribute data (content) of land records

Like in any other land information system, attribute data of land records stored in LAIS concern the information related to the landowner, the right and the parcel. Depending on the purpose of land records and the level of data integration, the number of attribute data differs from one system to another. According to technical documentation of LAIS and the outcome of interviews with RNRA staff, 5 main classes were identified namely party, right, parcel, location and administrative document. As the system does not store information related to property values, buildings and improvements, there are no classes designated for that purpose. Details of all classes are shown in Appendix 8.

- **Party class:** This class has attributes like the type of party (natural person or non-natural person), party ID card number, ID type, creation document ID, change document ID, representative ID and domicile of the party (province, district, sector, cell and village). This class is the base of two classes namely *NaturalPerson* which contains names, gender, birthday and death date of the party; and *NonNaturalPerson* which contains the full name, nature and domicile of the party (province, district, sector, cell and village).
- **Right class:** It has attributes like creation document ID, title document ID, right code (lease or freehold), share numerator, share denominator, the term of the right, and domicile of the representative (province, district, sector, cell and village).
- **Parcel class:** Attributes of this class are the parcel size, location, right code, land use, first title data, lease term and the location of the parcel (province, district, sector, cell and village).
- **Location classes:** They describe the address of the parcel or the person living in Rwanda. These classes are namely *Province*, *District*, *Sector*, *Cell*, and *Village*. Common attributes for each of them are name and code. Sector and village classes have an additional attribute called "classification" which is used to put a sector or a village into categories that are useful to know lease fees rates. With regard to the location, it has to be noted that it is possible to specify the location of the parcel or address by using UPI. This option allows the user to display land information up to parcel level without going across the location tree from cell to province. UPI is composed of codes of Province, District, Sector, Cell and number parcel and its very important for to search, to extract or to update information. It is also used to link different components of the system and to make unique each single parcel countrywide.
- **Administrative document class:** This class is the core of all operations or transactions performed by LAIS. For every transaction booked in the system, a new AdminDoc is automatically created. AdminDoc is a combination of UPI and booking date (day, month and year). It is used to track all transactions that were performed on the parcel throughout its life.

4.5. Types of land information needed by government officials for property taxation

Looking at the process of property taxation, it can be seen that the tax authorities need land information to perform property taxation activities. Land information needed is landowner identification, parcel number, the size of the parcel, location of the parcel, category of land, land use, land certificate issuance date, property value and information on developments on land. A screen short of the online tax system (RALGTMS) shows how land information is used by tax authorities in land lease collection process (see appendix 11).

4.5.1. Landowner identification

Identification of the taxpayer is important information needed in property taxation. Names of the person subject to tax obligation and the number of identification card or passport have to be known. If the land is held under co-ownership, the elected representative is the one who is responsible for paying tax or fee on behalf of the others. In line with this, one of the taxpayers interviewed said that tax payment is sometimes difficult when the parcel belongs jointly to many people because it requires the consensus and contribution of each and everyone. The respondent further explains that it is more difficult when co-owners reside in different places and the representative has to contact everyone to collect the contribution.

4.5.2. Parcel number

In order to distinguish one parcel from another, every land administrator has to put in place a proper numbering system capable of making each parcel unambiguously identifiable. For the case of Rwanda, each parcel has its unique number composed of codes of Province, District, Sector, Cell and number parcel. This unique number is known as UPI (Unique Parcel Identifier) and it is associated with all available information on the land. Respondents from RRA indicated that the UPI is very important and it is used to query and display land information without searching by location which is time-consuming.

4.5.3. Size of the parcel

The size of the parcel is used to determine the value of land and to calculate the amount of lease fee to be paid by the taxpayer. From interviews with officials in charge of land registration, the size of the parcel is sensitive information which has to be as accurate as possible. Many respondents revealed that the size of many parcels is approximate and there can be some errors as they were surveyed during systematic land registration by using general boundaries approach. For many taxpayers, it was observed that many of them do not know if the size they have on their land certificate is correct. They said that they trust what was surveyed by the government officials and they do not have enough knowledge to know if the size of their parcels is true or not. However, some respondents said that they noticed errors in the size of their land and when they applied for correction they were asked to hire a private land surveyor to take new measurements.

4.5.4. Location of the parcel

Location of the parcel determines the category in which the land is classified. According to the location, a parcel can be classified as urban, rural or being in the trading centre. The category is used in fixing the rate of land fee to be applied. Even though field surveyors should have applied administrative boundaries, different respondents indicated that there are few mistakes committed during land demarcation whereby some parcels located on the border of two neighbouring cells were attributed to a cell in which they do not belong to. If those cells have different fiscal status according to existing zoning classification, the owners will escape from paying property taxes/fees or will be charged less or more than what they should pay.

4.5.5. Category of land

According to its location, there are 3 categories of land used in property taxation. Land located in the urban area, in the rural area and in trading centre. Category of land determines if a landowner is subject or not to land fees. District officials remarked that land categorization is approved by the District Council and communicated to the public. Categories of land are defined according to administrative boundaries of sectors and cells. A master plan has established in 2011 and provides categories of land for each area. As noticed, land records also provide information about the category of land. In case there is a mismatch between land records and master plan, tax authorities rely on what is mentioned in the master plan.

4.5.6. Land use

Land use is another important element to be considered when calculating the amount of the fee to be paid. In Rwanda land use is determined by the District land use or master plans. However, from interviews with officials in charge of land records, it was revealed that the land use captured during systematic land registration is the use existing on the ground at the time of land registration, not the use provided by the District land use plan or master plan. District officials in charge of land registration revealed that in case of a mismatch, the land use provided by District land use plan or master plan prevails over what is provided by land records. Owners were requested to pay property taxes/fees even though the land use mentioned in the land certificate was not in the category of those subject to property taxation. This was the practice before the transfer of the responsibility for collecting local taxes from districts to RRA (before August 2015). A respondent from RRA indicated that with the new system they consider the land use stored in the land registry. This is to prevent legal contestations susceptible to bring the government before the court with the

risk to pay compensatory damages. Furthermore, the respondent revealed also that, as they do not have any mechanism to check land information, they are not entitled to challenge data from RNRA which has expertise in land matters and if they do so it can be seen as an interference in other institution's affairs.

4.5.7. Property value and information on developments on land

The value of the land and its developments is needed for fixed asset tax. For property valuation purpose tax authorities and private valuers need information on the market transactions as well as information on buildings or improvements namely their size, construction materials, volume, date of construction, etc. Unfortunately, the existing land records in Rwanda does not provide that information. Taxpayers when declaring tax have to submit valuation report. Many respondents subject to fixed asset expressed their dissatisfaction about the self-valuation and feel that RRA should cover the costs, not the taxpayers. Data on property values and other information related to developments on land was not captured during systematic land registration. Market transactions data are not also available to be used in determining the market value when comparable prices approach is to be applied. It was revealed that the obligation of self-valuation was introduced in Rwanda in order to fill the gaps in land market information.

4.5.8. Land certificate issuance date

Property tax and fees are levied from the moment of the of issuance of the land certificate and are paid on annual basis. If the land certificate is issued mid-year, the landowner pays the remaining months of the taxable year. Tax authorities indicated that they need land certificate issuance date in order to know the number of months to be used in the calculation of the amount of tax/fee to pay for the current year. They also need it in order to know the number of previous unpaid years to calculate fines in case of late or non-payment.

4.6. Acquisition of land information needed for property taxation purpose by tax authorities

4.6.1. Situation before the transfer of the responsibility for collecting local taxes from districts to RRA

Before the transfer of the responsibility for collecting local taxes from local governments to RRA and before the tax collection system (RALGTMS) was introduced, district tax authorities were used to have some data on parcels registered in Huye district. One district official remarked that they were relying on excel sheet containing land information of parcels of Huye District that they got from RNRA and duplicates of land certificates kept by district OSC. The respondent further said: "*the process of acquiring land information to be used in property taxation was very complicated and the district was obliged to write a letter to RNRA with the risk of getting a negative answer because there was no prior commitment of RNRA exchange data with local governments. With this situation, we were obliged to use our excel sheet with some outdated information and the only way we were using to update it was to use duplicates of land certificates if there was a transaction done on the land* ". With regard to this, an official from RNRA indicated that the exchange of data with districts was delayed because districts did not have required IT facilities enabling data sharing and for the reason of security of the system as there was a need for a young system like LAIS to be stable and to be sure that it is fully protected.

4.6.2. Current situation on modalities for data exchange

After the transfer of the responsibility of collection of local taxes, in December 2014, RRA and RNRA signed a memorandum of understanding on the continuous exchange of digital data related to land registration. Respondents from RRA indicated that today there is the good relation and collaboration between the two institutions. There is a connection between RNRA and RRA databases via Application Program Interface (API) platform. Currently, land records are being used in online tax declaration and payment system launched in August 2015. Therefore, because of continuous access to land records, results from interview revealed that tax authorities are now satisfied with the way of accessing to land information.

4.7. Suitability of land records for property taxation purpose

4.7.1. Issues related to the correctness of land records

In any system, errors or omission can be noticed. They can be made during land registration of parcels by the landowner when providing information of his/her land or by one of the staff. Table 4-2 shows the requests submitted by landowners for the correction of boundaries and land use.

Table 4-2. Boundary/size and land use corrections processed by RNRA in 2015

Sector	Boundary/area correction	Correction of land use	Total
Mukura	3	10	13
Ngoma	13	14	27
Tumba	10	39	49
Total	**26**	**63**	**89**

Source: RNRA, October 2015.

As shown in table 4-2, RNRA processed 26 files requesting boundaries or size correction and 63 files requesting land use correction in the first ten months of 2015. The total processed files from 3 selected sectors are 89. All those corrections have been done because of errors identified mainly by the landowners or rarely by the staff of RNRA. Government officials in charge of land records revealed that those errors exist from the time of the establishment of LAIS where parcels were wrongly demarcated or the land use information was wrongly recorded or was changed after systematic land registration and not reported in order to be updated.

Still on the correctness of land records, is was revealed that there is a mismatch between land use information recorded on some parcels and the one provided in the master plan. Government officials in charge of land records indicated that the land use information kept in land registry/cadastre was recorded during systematic land registration. They further remarked that since the master plan was established in 2011 when the systematic land registration was about be completed, there should be some mismatches between the two types of information. Figure 4-7 shows the status of the conformity of land use information.

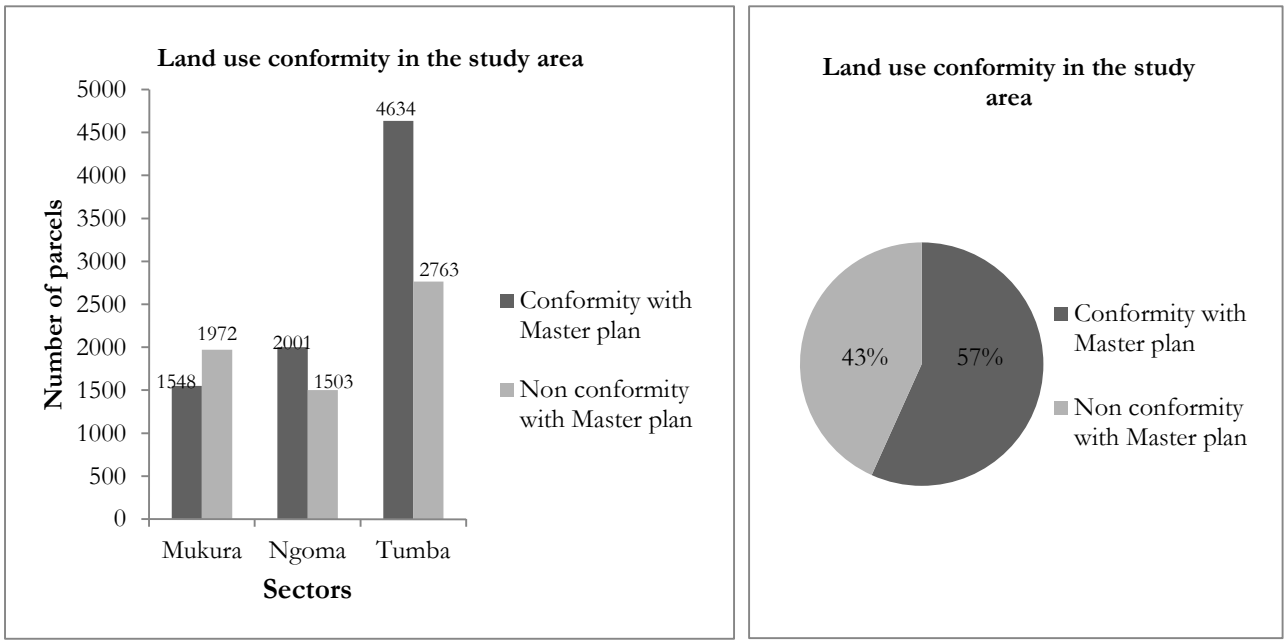


Figure 4-7. Land use conformity the study area (Source: Huye District & RNRA, October, 2015)

Furthermore, results from spatial analysis of land use information stored in LAIS and master plan revealed that only 56.7% (8,183 out of 14,421) of registered parcels are in conformity with the master plan whereas 43.3% (6,238 out of 14,421) of registered parcels are not in conformity with the master plan.

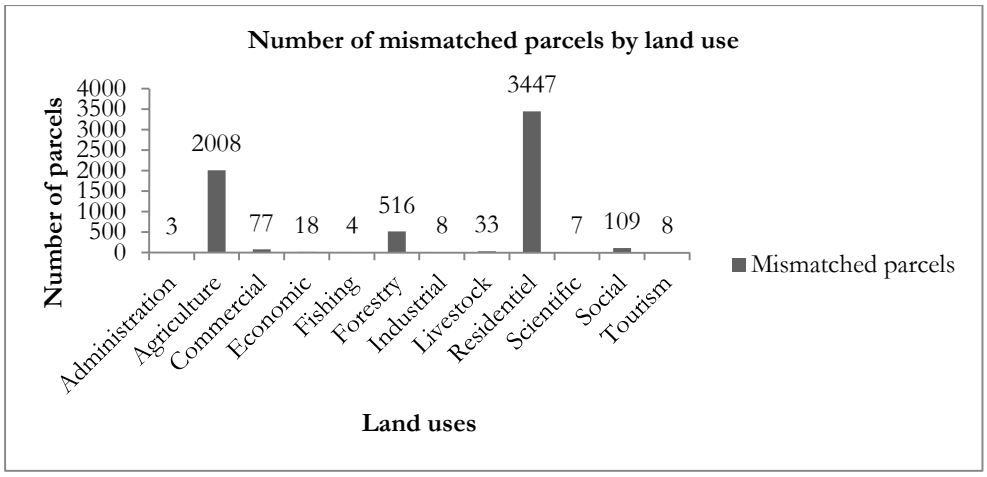


Figure 4-8. Number of mismatched parcels by land use (Source: Huye District & RNRA, October, 2015)

As shown in figure 4-8, the most mismatched land use is residential with a percentage of 55.5% (3,447 out of 6,238) of the total mismatched parcels, the second one is agriculture with 32.2% (2,008 out of 6,238). With respect to this, results revealed that every year Huye district loses at least Rwf 44,400,804 (≈ Euros 51,870) because of some parcels which, according to the master plan, should pay property tax/lease but they are not levied as the land use information stored in LAIS make them not subject to property tax/fee.

4.7.2. Issues related to land records updating

Figure 4-9 shows the situation in Gitwa cell of Tumba sector, where current cadastral information on the ground is different from what is in LAIS. This situation results from a road which was constructed and some parcels were affected and no update was made in LAIS. Government officials interviewed highlight the problem of land records updating. Landowners do not report regularly changes to be recorded into LAIS and only a few transactions are submitted to land officials. Despite the changes which have to be reported by the landowners, one of the respondents remarks that "*the district did not put in place mechanism to capture information about the changes resulting from construction of new public infrastructure like roads which have been constructed after the systematic land registration*.

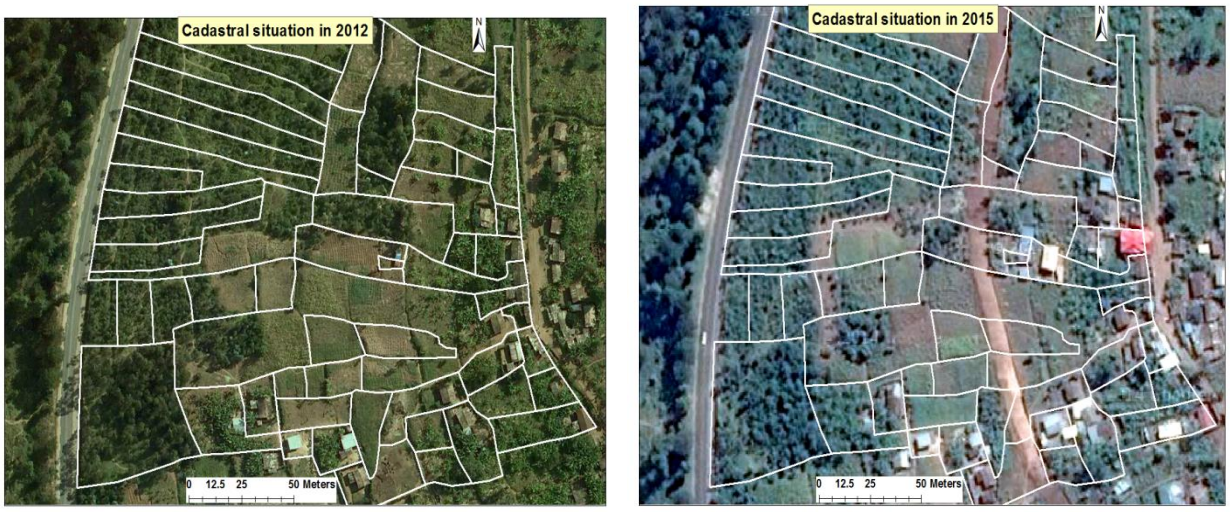


Figure 4-9. Issues of cadastral information updating

In addition, it was revealed that the issue of land records updating can also be seen throughout the existence in LAIS of parcels located in the study area whose the owners do not pay tax/fee because their parcels are under dispute. Disputes on lands were registered during systematic land registration and some of them are still alive and no land certificate was issued to any of conflicting parties. This affects property taxation because according to the law property tax or fee is paid by those who have land certificates. Table 4-3 shows that the number of disputed parcels in the study area is 197 (1.9% of all registered parcels).

Table 4-3. Disputed parcels and first registrations

Sector	Total registered parcels	Disputed parcels	Percentage
Mukura	14,328	91	0.6%
Ngoma	5,605	29	0.5%
Tumba	10,525	77	0.7%
Total	**30,458**	**197**	**1.9%**

Source: RNRA, 2015.

4.7.3. Issues related to the completeness of land information

Three types of issues related to the completeness of land records have been pointed out by officials in charge of property taxation namely unregistered parcels and lack of information on the value of land. Results reveal that there are some land parcels which were demarcated during land registration but none has claimed the ownership. These parcels belong mainly to those who were absent during systematic land registration due to different reasons. According to results presented in table 4-4, it has to be noticed that 19.4% (3,467 out of 17,888) of all demarcated parcels in 8 selected cells are parcels missing some information related to the identification of the landowner(s). As landowners are allowed to register those parcels through sporadic land registration, results revealed that from January to October 2015 RNRA has processed 178 applications requesting first registration from the three selected sectors.

Table 4-4. Situation on registered and unregistered parcels in the study area

Sector	Total parcels	Parcels with full information	Parcels with no information	% of parcels with no information
Mukura	4,661	3,520	1,141	24.5%
Ngoma	4,150	3,504	646	15.6%
Tumba	9,077	7,397	1,680	18.5%
Total	**17,888**	**14,421**	**3,467**	**19.4%**

Source: RNRA, October 2015.

4.8. Contribution of land records in terms of facilitation of property taxation process

The contribution of land records in terms of facilitation of property taxation process can be seen from different angles. The use of land records in property tax/fee collection process facilitates the process by reducing the number of steps involved in the process, reducing the cost and time spent for property taxation.

4.8.1. Effects of the use of land records on the number of steps involved in property taxation process

One of the effects of using land records in collecting property tax/fee is the reduction of the number of steps involved in property taxation. Tax officials interviewed indicated that the number of steps involved in the process of property taxation has decreased compared to what they were used to do before land registration program. As they indicated, changes can be seen mainly in the process of identification of taxpayers and taxable properties. Before the land was systematically registered and land records made available, every time it was required to do the land survey and land registration to have one taxable parcel and one taxpayer discovered and identified. One of the respondents remarked: "*Nowadays, land information is*

available, landowners and taxable parcels are almost known and no need of discovery and identification. Availability of land information for each parcel makes property taxation easier by saving our time and we are able to delivery efficiently.

4.8.2. Effects of the use of land records on the cost of property taxation activities

If steps involved in property tax/fee collection process decreases it diminishes automatically the costs of property taxation activities. During interviews with staff from RRA and Huye District, they explained how the cost of activities involved in property taxation has dramatically decreased since the establishment of land records by RNRA in 2012. They further indicated that there is no money to be spent in discovery and identification of taxable properties and taxpayers, thus there in no cost for those activities. It was noticed that after land registration program was completed and land information was entered in the system, land certificates were issued to landowners. Even though tax authorities got continuous access to digital land records in 2015, they managed to get land information in a different way. District staff said that since 2012 they were using an excel sheet contained information on registered parcels that they have got from RNRA, land certificates held by taxpayers or the duplicates to get the information needed for property taxation.

4.8.3. Effect of the use land records on the time spent for property taxation activities

The benefits of the use of land records in property taxation process can also be seen in term of time spent for property taxation activities. If the purpose of establishment of land records is to speed up property taxation process by availing land information needed by tax authorities, the result should be the reduction of the time spent for property taxation activities. During interviews, respondents from RNRA and Huye district confirmed there is a decrease of the time spent for property taxation activities if the they compare the situation before and after the land registration program. They indicated that before 2012 it could take between fifteen (15) days and thirty days (30) days to have one taxable parcel to be discovered and identified (i.e. surveyed and registered) whilst today it can take few minutes, just the time to query or to extract information in the system.

4.9. Contribution of land records to the increase in the amount of collected property-based revenue

4.9.1. Situation on the increase of taxable properties and collected property-based revenue

Registering land in a systematic way and making land records available to be used by tax authorities in property tax/fee collection process has an impact on the amount of collected property-based revenues. The more the number of registered parcels the more the number of taxable properties and the more the property-based revenues collected. In line with this, figure 4-10 shows that with the land registration program, the number of the potential taxable properties went from 1752 to 5240, i.e an increase of 299 percent.

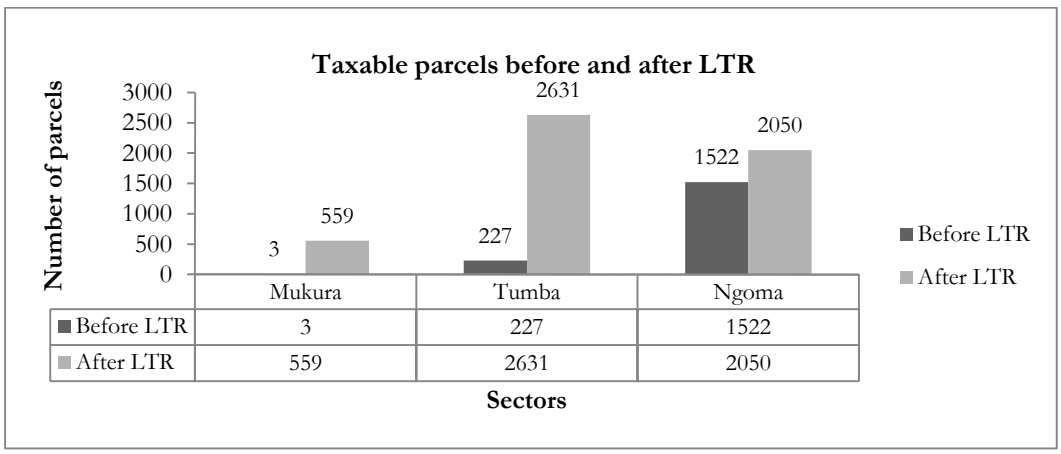


Figure 4-10. Situation of taxable parcels before and after LTR (Source: Huye district, October 2015)

It can also be noticed that, compared to other sectors, in Ngoma Sector there is a slight increase (135%). This is due to the fact that Huye town has been developed from that place and most of the city centre is located there. Being the urban sector, people owning land there were used to register their land before.

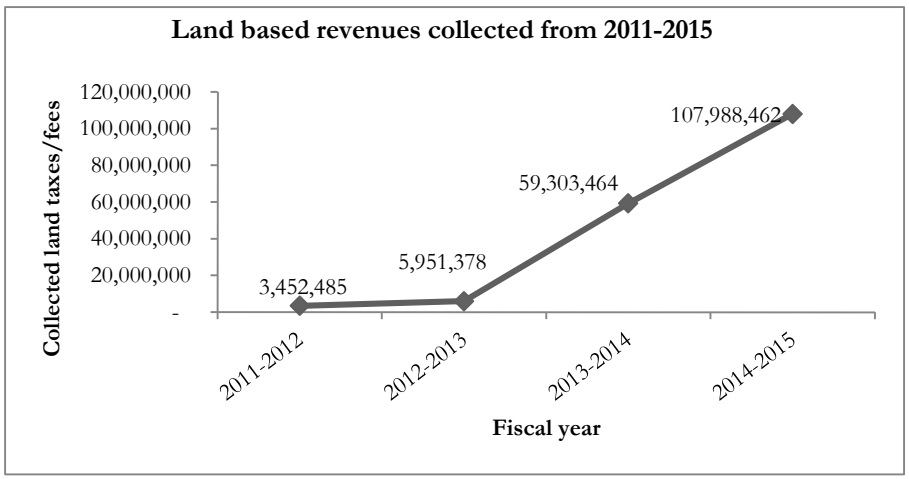


Figure 4-11. Property-based revenues collected from 2011 to 2015 (Source: Huye district, October 2015)

Still on Contribution of land records to the increase of collected property-based revenues, the analysis of annual reports held by Huye district revealed that from 2011 to 2015 property-based revenues collected have increased from Rwf 3,452,485 (≈Euros 4,033) in 2011 to reach Rwf 107,988,462 (≈Euros 126,154) in 2015. Looking at figure 4-11, it can be noticed that over four a year period, the amount of the collected property-based revenues has been multiplied almost 30 times during the past four years. According to district staff in charge of property taxation, this increase resulted from the proliferation of land information and the better use of such information in tax collection.

4.9.2. Proportion of property-based revenues in relation to the total tax revenues

Property taxes and fees are one of the sources of revenue. Table 4-5 shows their proportion in relation to other tax revenues collected by Huye District from 2011 and 2015.

Table 4-5. Property-based revenue in relation to the total revenue

Year	Collected property-based revenue (A)	Total of all tax revenue (B)	% of A in relation to B
2011-2012	3,452,485	688,491,285	0.3%
2012-2013	5,951,378	830,912,822	0.4%
2013-2014	59,303,464	921,359,620	5.5%
2014-2015	107,988,462	978,940,436	9.6%

Source: Huye District, October 2015

Looking at these figures, it can be seen that the contribution of property taxes and fees in relation to the total tax revenue is still low but it is increasing dramatically since 2012. For the period of 4 years, the contribution has increased from 0.3% in 2011-2012 to 9.6% in 2014-2015 (an increase of 9.3%). In line with this, interviewed tax authorities indicated the contribution of property-based revenues will continue to increase since the use modern technology will bring more efficiency in property taxation by facilitating tax declaration and payment as well as detection of taxpayers who do not pay taxes. However results revealed that with all efforts put in property taxation, tax authorities managed to collect only 48.1% of all potential property-based revenues. Considering the number of taxable properties in the study area, the total annual

revenue to be collected is estimated at Rwf 224,650,109 (≈ Euros 262,442) but currently, the tax authorities manage to collect only Rwf 107,988,462 (≈ Euros 126,154).

4.9.3. Proportion of property-based revenues in relation to the district budget

Huye district uses different tax revenues to finance publics projects. Property-based revenues are among them and they represent a certain percentage of the total budget. As shown in table 4-6, over four years period the proportion of property-based revenues has increased from 0.04% in the fiscal year 2011-2012 to 0.85% in the fiscal year 2014-2015. Looking at these figures, it can be noticed that the proportion of property-based revenues is less than 1% of the total district budget. Huye District authorities explained that the situation is not surprising since the proportion of all tax revenue is 7.7%.

Table 4-6. Property-based revenues in relation to district budget

Year	Collected property-based revenue (A)	District budget (B)	% of A in relation to B
2011-2012	3,452,485	8,796,736,455	0.04%
2012-2013	5,951,378	9,596,720,660	0.06%
2013-2014	59,303,464	11,956,237,057	0.50%
2014-2015	107,988,462	12,641,033,152	0.85%

Source: Huye District, October 2015.

4.10. Contribution of land records in relation to the tax compliance

Recording land information is to make land rights formalised and make landowners more subject to a number of obligations such as paying property taxes and fees, rational land use, etc. The contribution of land recording in relation to tax compliance can be seen through the comparison of levels of awareness of tax obligation before and after land registration/cadastre, the circumstances for the first tax declaration and/or payment and comparison of factors influencing tax obligation.

4.10.1. Awareness of tax obligation

The figure 4-12 shows the level of awareness about tax obligation before the completion of land registration program i.e. before 2012. Even though the tax obligation was provided in the law before that time, many people were not aware of their obligation to pay property taxes and fees. In this study, 21 respondents were not aware, 7 respondents were aware even before LTR but they had a feeling of not being concerned and obliged to pay property taxes and fees. Only 12 respondents were aware and were paying property tax or fees. Therefore, all taxpayers interviewed indicated that after land registration they are aware of tax obligation and feel obliged to comply.

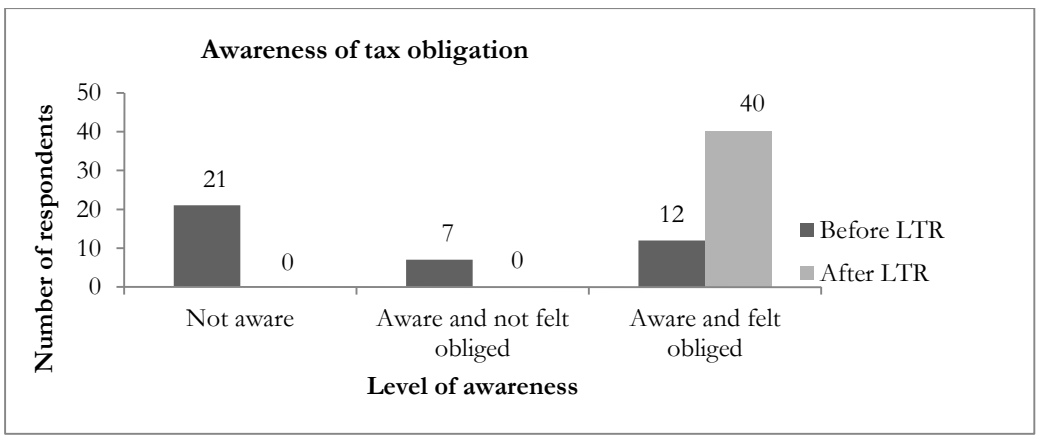


Figure 4-12. Level of awareness of tax obligation before and after LTR

4.10.2. Circumstances for the first tax declaration or payment

Taxpayers have an obligation to do self-declaration and payment as provided by the law. During interviews with taxpayers, it was revealed that there are three situations that can happen if a landowner decides or is obliged to pay tax/fee for the first time that he/she has never paid before. As shown in figure 4-13, the first category is the one where a taxpayer voluntarily decides to do a self-declaration or payment. For this category, 27 out of 40 respondents indicated that their first declaration/payment was voluntary. In the second category, there are taxpayers who declared or paid property tax/fee after the intervention of district authorities. This category is represented by 11 out of 40 respondents. Taxpayers in the third category are those who did self-declaration/payment when they were seeking an administrative service at any government office such land transfer, construction permit, renovation service, etc. They were asked to pay property tax/fee before they get the service.

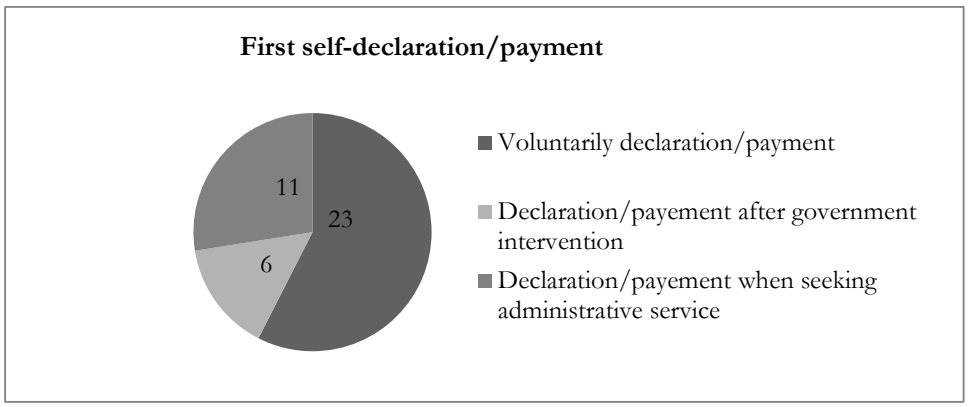


Figure 4-13. Circumstances for the first self-declaration or payment

4.10.3. Effect of holding a land title on tax compliance

During interviews, taxpayers indicated their views about the effect of holding land certificate on owner's attitude in terms of complying with property tax/fee obligation. Respondents were asked whether they feel obliged to pay property taxes or fees due to the fact that their land has been registered and a land certificate has been issued to them. Figure 4-14 shows that 25 out of 40 (62.5%) responded positively whilst 15 out of 40 (37.5%) responded negatively. They attributed this to the fact that they knew about the obligation of paying property tax/fee after collecting their land certificates. They further indicated that they found the amount of tax/fee to be paid written on their land documents and they went to revenue collection office to ask information about it or to pay. Since then they started to feel obliged to pay property tax/fee and they became taxpayers from that moment.

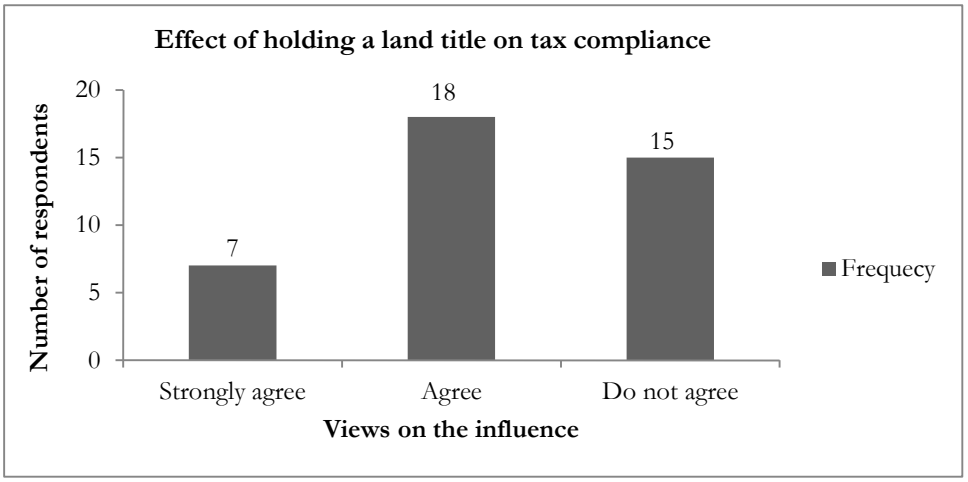


Figure 4-14. Views of taxpayers on the effect of holding land certificate on tax compliance

4.11. Conclusion

This chapter presented results of data collected from interviews, field observations and secondary sources in order to achieve research objectives and to answer research questions. The key elements include the background of property taxation and land records, the use of land records by tax authorities in property taxation, the suitability of land records for property taxation purpose and contribution of land records to the increase in the amount of the collected property-based revenues. In general, the results revealed that two types of property taxes/fees are collected in the study area: fixed asset tax which is levied on parcels under freehold regime by using land market value approach at a fixed tax rate provided by the law and land lease fee is levied on parcels under emphyteutic lease by using area-location approach at differentiated rates determined by the district council. It was also revealed that tax rates are not appreciated by all taxpayers and the majority are those who found them to be high. Therefore, it was found that the collection of property taxes and fees requires the use of land information kept in land registry/cadastre. Tax authorities acquire land information from RNRA or its affiliated land-related agencies. However, existing land records are subject to some imperfections which affect the efficiency of property taxation by decreasing the number of potential taxable properties and the amount of revenue to be collected. The lack of property value in land records has also been identified as one of the major issues for property taxation system. Despite all these issues, the contribution of land records to property taxation is to be recognised since property-based revenues have increased significantly. All these elements will be discussed deeply in the next chapter.

5. DISCUSSIONS

5.1. Introduction

This chapter discusses results presented in the fourth chapter of this research. It compares findings on property taxation and land registration/cadastre systems with the theories from literature. In addition, it discusses the existing situation of the contribution of land records on property taxation in order to figure out whether the level of the contribution is reasonable compared to the inputs.

5.2. Review of property taxation system and land records management

5.2.1. Types of property taxes/fees

As far as types of property taxes and fees are concerned, the majority of parcels in the study area were found to be subject to land lease fee. This predominance is due to the fact that leasehold is the common tenure regime in Rwanda whereas the freehold which is subject to fixed asset tax is an exceptional tenure regime. Freehold is only granted to developed lands with certain conditions as presented in section 2.6.4. It has to be noticed that land lease fee is more preferred than fixed asset tax because it is an area-based fee which does not require additional activities to determine the value of the property. Being a market-valued tax, fixed asset tax is cost and time consuming in a way that it requires hiring a private value to be paid by taxpayer and reassessment to be done by the government official. Therefore, if the Presidential order n°25/01 considers land lease fee as a fee, many people are used to consider it as a tax. This is due to the fact that land lease fee in Rwandan context has the same characteristics as a tax. Even though the Presidential order n°25/01 provides for the access to infrastructure as one of the requirements, land lease fee is not paid in exchange of a special service rendered to a particular individual. In addition, it is among the sources of revenue for local government. With this situation, as noticed by Agrawal (2001), a fee like land lease fee, should be considered as a tax as it is meant to raise revenue for the general purpose of the State.

As explained in section 2.6.5.3, for a parcel to be qualified as taxable property some requirements must be fulfilled. The requirements take into account the registration status and the physical characteristics of the property such as the value, the size, the location, the use and the accessibility to infrastructure. With regard to the registration status, results presented in table 4-4 revealed that 19.4% (3,467 out of 17,888) of parcels are out of the tax system because they are not registered thus owners are not known. For the land use and the size, results from the field revealed that 2466 (17.1% of registered parcels) are exempted because the registered land use is agricultural with a size less than 2 hectares. This situation confirms the findings of Musharraf at al. (2013) and Sagashya & English (2007) who observed the predominance of fragmented agricultural land over other uses. Concerning the access to infrastructure/services, the outcome of the interviews with taxpayers and the field observations have shown that the average of access for selected parcels is 68.3%. These infrastructure/services include electricity, road, education (public primary schools), public transport, health facilities and water supply. Results also revealed that health facilities have the lowest percentage of access and among interviewed taxpayers 19 out of 40 have to walk a distance ranging from 1 to 5 kilometres to reach to the nearest public health centre or hospital. This situation is not too bad since the spatial access proposed for health care services in Africa is 1-hour distance by using local transport (World Bank, 2005). Rwandan property taxation related laws do not provide what has to be considered to evaluate the accessibility of the parcel to infrastructure or to public services.

The setting of tax rates is a very important task for property taxation system and it can be sometimes the responsibility of local governments or sometimes the responsibility of central government. For fixed asset tax, a uniform tax rate has been fixed by the law at 1/1000 of taxable value per year. Rates for a land lease fee are fixed by the councils of decentralised entities within ranges defined by law according to different

categories of land (urban, trading centre and rural). This way of setting tax rates within limits goes in line with the argument of Bird & Slack (2002) and Walter (2011) who observed that minimum and maximum rates have to be determined in order to facilitate fair competition between local governments. It prevents that richer local governments apply lower rates to attract more investors and to prevent that local governments put the tax burden on non-residents by levy higher tax rates on industries. However, in as far as tax rates appreciation is concerned, results have shown that the majority of respondents (27 out of 40) have said the tax rates are high. Some respondents indicated that it is difficult for them to afford to pay property taxes or fees and at the same time covering household expenses. Therefore, the similar situation has been found in many other countries like Morocco, Egypt, Argentina, Brazil and Colombia where governments apply progressive tax rates or total tax exemption in order to lessen the burden on poor or vulnerable people (Walters, 2011). The GoR seems to have adopted a progressive approach for fixed asset tax whereby Law n°59/2011 provides a tax exemption for the land of less than 2 hectares used for agriculture, livestock or forestry and residential properties with a value not exceeding 3 million. For land lease, exemption for agricultural land less than two hectares is also provided by Presidential order n°25/01. It has to be noted that categories provided by the law are not enough to ensure properly the progressivity in property taxation. There should be more than two categories.

5.2.2. Benefits of property taxation to citizens and motivations of taxpayers' compliance behaviour

As stated earlier in section 2.5.6, there are various factors that influence to comply with the tax obligations. Improving tax compliance of taxpayers is one the key priorities of every tax authority (OECD, 2010). Results from interviews with taxpayers in the study area, as presented in figure 4-4, have shown that the fear to be punished and taxpayer's attitude were found to have a strong effect on tax compliance. The recognition of the benefits gained from taxes paid has less influence on tax compliance (only 5 out of 40 respondents). However, a similar study in Malaysia revealed that financial ability and fear to be punished were found to have much influence on taxpayer's compliance behaviour (Loo et al., 2009).

Focusing on the importance of property taxation to citizens, (OECD, 2010; Wenzel, 2002) highlight the benefits of paying taxes to be recognised by taxpayers. According to OECD (2010), "*the more people believe that the government takes good care of their paid taxes and spends it carefully, the more compliant they tend to be*". From this point of view, we can realise that if recognition of the benefits has less influence on tax compliance, it implies that Huye district has put much more emphasis on deterrent mechanisms rather than making taxpayers to feel beneficiaries of the taxes they pay. This could be done by improving accountability and interaction mechanisms to avoid that taxpayers get distrusted by perceiving tax authority as very controlling. If taxpayers feel distrusted, they tend to develop a negative attitude which may reduce compliance.

5.2.3. Property taxation process

In Rwanda, daily activities related to property taxation are executed by RRA's staff in charge of collection local taxes at national, regional, district and sector levels. Like in any property taxation system, five main activities as presented in section 2.5.4 are to be recognised. Since all land parcels have been systematically registered, results revealed that identification of taxable properties is done by RRA by importing land records from cadastral information system (LAIS) kept by RNRA. This process is done automatically through internet connection without field visits or surveys as it was used to be before land registration program. Cadastral information is considered by tax authority as the basis for fiscal cadastre and additional information may be added if they are missing. Bird & Zolt (2008) noted that the use of information technology in taxation brings effectiveness in tax administration by improving the quality and quantity of information and enabling tax authorities to use it effectively. It has many advantages such as reduction of taxpayer compliance cost, ease of information flow, reduction of opportunities for corruption, etc.

With respect to the property valuation, is has to be noted that the law provides for self-valuation and self-declaration of the property value in case of fixed asset tax. Since the self-evaluation implies for the taxpayers

to hire a private valuer, many taxpayers are those who indicated that it is unfair to oblige the owner to pay the costs of valuation and the tax. As noted by (Kopanyi, 2015), the self-valuation of single properties in Rwanda is uncommon and unfair as it requires owners to provide market value of their properties when tax authorities are unable to obtain data from the property market. In many other countries, the government is responsible for collecting technical data by using different methods of valuation like mass valuation. For this reason, private valuers are obliged to collect data from the field to be used for each valuation done and this makes it more expensive. The problem of the lack of transactions market data applies also to the re-assessment of the declared value by the revenue officer. Findings revealed that tax authorities rely merely on the valuation reports established by private valuers and if the declared value seems not to be reasonable compared to other declared property values of similar type, they inspect the case and adjust the value accordingly. With this kind of re-assessment, it is not easy to detect cases of the underestimation of the property value and to have a fair property taxation system. Therefore, the contribution of land records in the area of property valuation and tax re-assessment is still too low. Land records provide only information related to the size, use and location of the parcel but no information on improvements and the value of properties. Moreover, the same issue is noticed in many countries where the determination of the market value is difficult due to the absence of a developed property market (Bird & Slack, 2002; Walters, 2011).

Concerning the tax declaration and payment, results indicate that from August 2015, property tax authority (RRA) has moved from manual to online tax declaration and payment. This goes in line with improving service delivery by reducing the number of taxpayers visiting RRA offices and enabling taxpayers to file declaration and to pay property taxes/fee anywhere at any time. The main objective of online tax services is to increase tax compliance by reducing the time and the cost of the taxation process (Gasore, 2015). The system provides taxpayers with the opportunity to declare and to pay taxes or fees by using the internet or mobile phones. Therefore, at the current stage where the online system is still new, results have shown that many taxpayers are not using the online system despite its advantages. A lot of taxpayers are still visiting RRA offices to be helped by its staff to declare or to pay property taxes/fees online. Therefore, a similar situation has been found in Malaysia where the research revealed that the way taxpayers perceive the system to be easier to use has a direct effect on their acceptance of online system (Anuar & Radiah, 2010). For the case of Rwanda, many factors explain this situation such as the lack of information and technical skills in IT technology. In our opinion, RRA has not done enough to raise awareness amongst taxpayers.

5.2.4. Land records management

As indicated in section 2.6.3, existing land records are the outcome of land tenure regularisation program which was conducted from 2009 to be completed in 2012. Results presented in section 4.4.2 show that existing land records in the study area are both digital and paper-based. An electronic land registry/cadastre (LAIS) was established in 2012 to support basically land records maintenance activities and to provide land information to be used in land management. As stated earlier in section 2.6.3, LAIS integrates both spatial and non-spatial data and it has a processing capacity to collect, store, retrieve and disseminate land related information. Even though LAIS was introduced to move from paper-based to digital way, physical land files composed of supporting documents submitted by applicants and duplicates of land certificates are still being kept. If all documents are scanned and stored in LAIS, the issue is to know why staff in charge of land records continue to keep hard copies with the risk of lack of enough space to store them. As the law does not require to keep supporting document in physical form, we can assume that physical files are still being kept because of lack of total confidence invested in digital land records. Although Dorji (1999) considers that the computerisation of land records leads to the reduction of paperwork, this situation shows how much land administrators are still attaching a considerable importance to their physical files to overcome the risk of data loss.

As the intention for the GoR was to establish a multipurpose cadastre, results have shown that as per now land records lack some important information mentioned in section 2.3.2. Based on the results presented in section 4.4.1 and as stated earlier in section 2.6.3, it has to be recognised that initially LAIS was developed to support legal processes of land registration like recording spatial and non-spatial changes related ownership, legal interests in land and conveyancing matters. Additionally, land use information has also been captured during LTR program. Therefore, RNRA as the unique land information provider is not capable to satisfying all needs of its clients including tax authorities. Indeed, the incompleteness of land records hampers the efficiency of land administration as the system is meant to work properly if all components are operational. Similarly, Kopanyi (2015) has highlighted this issue by stressing that the completeness of land records is vital for ensuring cost-effective, well-functioning and equitable tax administration.

With respect to land records maintenance, a lot of effort has been made to strengthen and decentralise land related services at the lowest level possible. Currently, land related services are delivered by 371 sector land managers, 30 district OSCs, 5 provincial offices and at RNRA headquarters. The maintenance of land records is done by using LAIS which is only available at national, provincial and district levels. Since LAIS is not available at sector level, land related services offered there are limited to notarization of land transfers and to receiving of applications of clients. Normally the process starts with the application to be submitted by the owner or interested party at the nearest office. Land information is then updated in the land information system (LAIS) by changing existing land information or adding the new one. Therefore, cases which are not reported by the owners are still unknown and it is rare that land records maintenance takes place on the initiative of the registrar of land titles. As a result, some information kept in land records is likely to be outdated. It has to be recognised that, the practice of updating land records only upon sporadic requests from the owner is not efficient. For some cases, like updating of land uses in accordance with the master plan, RNRA should take initiative without waiting for requests for owners as it is allowed by the Ministerial order n°002/2008. Failure to have correct and updated land records will affect the inefficiency of property taxation system since they are the unique source of information used by tax authorities.

5.3. Use of land records in property taxation activities

As stated earlier in section 4.5, the need for the of use land information stored in land registry/cadastre in collecting property taxes/fees is certainly indisputable. Tax authorities need land information to be able to perform different property taxation activities. In Rwanda, land information is provided by RNRA or its affiliated agencies. The following sections discuss the ways of acquisition and accessing by tax authorities to land information and the suitability of land records for property taxation purpose.

5.3.1. Acquisition by tax authorities of land information needed for property taxation purpose

Acquisition of land information was the responsibility of local districts until June 2015 when the process of transferring the responsibility of collecting local taxes to RRA was completed. As land records were made available in 2012, districts started to send their applications to RNRA in order to have access to land information to be used in land management activities including property taxation. All requests did not get a positive answer due to the lack of required infrastructure enabling data sharing between districts and RNRA. With respect to Huye District, there was no software to be used and consequently, collection of property-based revenue was done manually. Given the fact that online access to land information from RNRA was not possible, district staff were given an excel sheet containing land information of parcels registered in Huye District. Results presented in section 4.6.1 show that the process of acquiring land information was very complicated as there was no possible continuous access to land related data and sometimes applications from the districts could take a long time to be processed. In such a situation, as suggested by (Ali et al., 2013), one of the solutions was to create an environment enabling data sharing and

coordination among concerned institutions for accessing land information by enhancing institutional arrangements and improving cooperation and communication.

Lack of access to land information was one of the issues that the property taxation system has experienced leading to inefficiency. In response to this, as earlier stated in section 2.6.5, the government in 2014 has transferred the responsibility of property taxation from districts to RRA based on its advancement, IT facilities and expertise in the collection of taxes. Local government revenue management software was developed by RRA and launched in August 2015 to allow online tax declaration and payment. The system is connected to land information system (LAIS) via Application Program Interface (API) platform. In line with the improvement of cooperation and communication between the two institutions, a Memorandum of Understanding was signed to determined their obligations. Article 4 of the MoU fixes the obligations of RRA which include the use of data only for the purpose of property taxation with the possibility to match data with records from other sources, not to reveal private information relating to identifiable individuals, to pay connectivity costs and provide data to RNRA for statistical purposes. As for now, results have shown that tax authorities are satisfied with the electronic way of accessing to land information since they have instantaneous and continuous access without applying every time.

5.3.2. Suitability of land records for property taxation purpose

As highlighted by Ali at al. (2013) and Bittner & Frank (2002) (see section 2.4.3), land records in order to fulfil some roles, some required quality requirements must be met. Ideally, they must be correct, complete, updated, available and shared. Concerning the correctness of land records, results have revealed that existing land information is subject to some errors occurred during the first land registration. These errors, as noted by (Bittner & Frank, 2002), reflect the situation where the valid legal situation does not correspond to the content of the cadastre. Results presented in section 4.7.1 have shown that incorrectness noticed in land records is related to boundaries, size and land use. It was also revealed that many cases are still unknown or not reported. From January to October 2015, RNRA processed only 89 applications from landowners requesting the corrections. Among these applications, land use is more predominant with 70.7% (69 out of 89) of the total processed applications. The predominance of applications requesting correction of land uses is due to the fact the there are many cases of mismatch between land information stored in LAIS and district master plan. Results have shown that 43.3% (6,238 out of 14,421) of registered parcels are not in conformity with the master plan and the number of reported cases is still very small. Because of the land use information which was wrongly recorded, there are parcels exempted from paying tax/fee whilst they should pay. As a result, it was revealed that every year Huye district loses, at least, Rwf 44,400,804 (≈ Euros 51,870) on the registered parcels whose land use information was wrongly recorded in the study area.

Issues related to land records updating have been highlighted as one of the challenges that land administrators are facing in Rwanda. As stated in section 2.4.3, land information updating is one of the requirements for land records to be useful (Ali at al., 2013). A land register loses its value when the land information it stores is not updated (Henssen, 2010). In line with this, results presented in section 4.7.2 revealed that not all changes in spatial and non-spatial land information are regularly reported. This is the case for both changes decided by landowners and those caused by government institutions in the public interest. In response to this, through public campaigns, institutions in charge of land records are trying to sensitise landowners to register any land transaction. Still this is not enough since there are no clear reporting mechanisms of changes in the land caused by government institutions. It appears unfair to expect landowners, sometimes with limited financial means, to comply with the obligation to register any change in land whilst government institutions do not comply with the same obligation. In addition, another issue to be highlighted is the presence of land disputes registered in LTR program and all of them are more than 4 years old. As shown in results, parcels under dispute are about 1.9% of the total registered parcels in the study area. This was found to be an obstacle because if a parcel is disputed no land certificate until the

dispute is settled, thus the parcel is not taxable. Even if Rwandan legislation does not talk about the time limit from land disputes registered during LTR program, they should not be there endlessly. Conflicting parties should be given a time limit to settle the dispute. If not settled, the interested party should reapply for registration of the dispute otherwise, the register of the land titles should remove the dispute from the land registry.

Still on quality requirements of land records, completeness is another element to be discussed. As stated earlier in section 2.4.3, completeness refers the presence or absence of features, their attributes and relationships (NEN, 2013). Results from the field have confirmed the existence of some issues related to incompleteness in land records or which make parcels not to be subject to property tax/fee. One of the issues to be highlighted is the presence of unclaimed or unregistered parcels since no land certificate can be issued to parcels lacking information of landowner. Consequently, if holding a land certificate is one the requirements for a parcel to be subject to property taxation, the number of the potential taxable properties will decrease as the parcel is outside the taxation system. In line with this, it has also been revealed that, in 8 selected cells in the study area, the total number of parcels lacking land information is 3,467 out of 17,888 parcels (19.4% of registered parcels). Information about these parcels was not recorded because of the absence of the landowners or their negligence. With time, people who did not register their land are doing first land registration sporadically but the number of those who come is still very small as stated earlier in section 4.7.3. This situation is very crucial and much has to be done in order to prevent tax evasion as some people with bad faith, may use this gap and avoid paying property taxes. As these parcels lack basic information, it is not possible to estimate the loss in property-based revenue that the district incurs.

5.4. Contribution of land records to the ability of tax authorities to raise property-based revenues

5.4.1. Contribution of land records in terms of facilitation of property taxation process

Establishing a land registry/cadastre and availing land records to be used by tax authorities have been found to be one of the preconditions for a successful property taxation system (Bird & Slack, 2004; Dale & McLaughlin, 2000; Tuladhar, 2004; Walters, 2011; Williamson et al., 2010; Zevenbergen, 2002). A number of benefits associated with land registration and use of land records have been highlighted in different researches. In line with the facilitation of property taxation process, benefits to be identified are like the ease of property taxation process (Zevenbergen, 2002), reduction of cost and time of property taxation activities (Tuladhar, 2004). The results have shown that the availability and the use of land records in property taxation have reduced steps, costs and time of taxation activities. Since the land was systematically registered and land records are available, activities related to the identification of taxable properties are no longer needed. Before the establishment of land records, staff in charge of property taxation were used to go into the field to collect data required to administer the tax with additional activities related to the issuance of the land certificate. For a parcel to be ready for property taxation, it was required to go through a long process of boundaries determination, land survey, preparation of the cadastral plan, land titling. Currently, the process does not include these preliminary activities aiming at identifying the property to be taxed. As a result time and money which would be spent on these activities is saved. However, results revealed that support from land records in the field of property valuation is still too low. Property valuers are still collecting data from the field and taxpayers are still required to pay all costs related to valuation. This situation is very critical as literature highlights the benefits of using land information in property valuation such as objectivity, accuracy, efficiency, costs reduction and use of less skilled personnel (Tuladhar, 2004).

5.4.2. Contribution of land records to the increase in the amount of the collected property-based revenues

As noted by Bird & Slack (2004), the existence of cadastral information is one of the prerequisites for property taxation to be successful. Ideally, good land records may enable tax authorities to identify all landowners or taxable properties without leaving behind any single parcel. They should provide information

on land markets to be used in calculating the value of the property subject to tax. The results revealed that in 2012 at the end of the land registration program, the number of taxable properties in 8 selected cells of the study area went from 1752 to 5240, with a 299% increase. As a result, the total property-based revenue collected in the fiscal year 2012-2013 risen by 172%. Results also revealed that this situation results from the increase of the number of the registered parcels and the better use of land records in property taxation accompanied by some mechanisms aiming at improving the tax compliance like the use of the door to door approach to sensitize owners to pay property taxes and fees. In line with this, Walter (2011) shows that the same phenomenon has occurred in Somaliland, where the property survey program initiated by the Municipality of Hargeisa to produce fiscal cadastre had resulted into an increase of over 370% for potential taxpayers and 248% for revenue collected.

The role of local governments in property taxation is very crucial. Consequently, they should be beneficiaries of property-based revenue collected even in case the central government is responsible for tax administration. The results of this study have also shown that the proportion of property-based revenues in the total local revenue collected by Huye District has increased from 0.3% in 2011-2012 to 9.6% in 2014-2015. The increase is about 9.3% in the last four years. In addition, the contribution of property-based revenues in the total budget of Huye district is around 1% percent whereas all tax revenues contribute to 7.7 % to the district budget. The rest of the budget is financed by budget allocations, subsidies or funds from central government or development partners. Looking at the proportion of property-based revenue in Huye District, it can be noticed that the taxation system is promising since in some developing countries like South Africa or Mauritius the property tax represents respectively about 5.6% and 7.8% of total local government tax revenue (Walters, 2011). Nevertheless, much has to be done to enhance revenue and to increase property tax/fee collection rate which is currently at 48.1%.

5.4.3. Contribution of land records in relation to the tax compliance

Tax compliance is the main concern in any property taxation system. Loo et al. (2009) consider a compliant taxpayer to be the one who meets tax obligations, i.e. tax declaration and payment, within deadlines without the intervention of tax agency. In line with this, the taxpayer needs to be aware of the existence of taxes/fees that he/she is subject to. It has to be noted that before land and tax reforms in Rwanda, property tax payment was considered by many landowners not to be the concern of everyone but the concern of a certain category of people, especially those who have land titles. Others were not aware of the existence of tax obligations (Mbembe et al., 2012). Among 40 taxpayers interviewed, only 19 respondents indicated that they were aware but 7 amongst them felt being not concerned with tax obligation. The majority of respondents (21 out of 40) were not aware at all.

After a tax reform was undertaken, there was a need for a triggering factor for new taxpayers to enter into taxation system. Results have shown that land registration has been one of these factors whereby 25 out of 40 taxpayers interviewed asserted that, for the first time, they knew about the obligation of paying property tax/fee when they went to collect their land certificates. Similar results had been reported by (Mbembe et al., 2012) in a study whereby the moment of picking up the land certificate has been found to be one of the means for landowners to get to know about their tax obligations. This situation allows us to assume that issuing land certificates to landowners has triggered their entrance into the taxation system and their feeling to be concerned with tax obligation has increased since then.

As self-declaration is the method which is in force in Rwanda, it is possible that taxpayers do not react directly after they collect land certificates and several months or years may pass between the time of issuance of the land certificate and the time of self-declaration. Therefore, it is necessary to know the number of taxpayers who did voluntarily self-declaration in order to confirm the triggering nature of holding a land certificate with regard to the tax compliance. In line with this, the results presented in section

4.10.3 have shown that 23 out of 40 respondents asserted that for the first tax declaration, after collecting their land certificates, they made their own decision and they went to revenue collection office to report themselves. This category represents the majority of respondents as 11 out of 40 respondents did tax declaration after tax agency intervention and 7 out of 40 respondents have been obliged to do it when they were seeking an administrative service in the government institutions.

6. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the findings of each specific objective as given in section 1.3 of chapter one and provides the general conclusion. It also presents recommendations for improvement and possible further research.

6.1. Conclusions

In general, this research investigates the contribution of land records on property taxation. Therefore, the overall findings allow us to conclude that, in a number of ways, the use of land records contribute to improvements in the property taxation system leading to an increase of property-based revenue. In order to provide more contribution on property taxation, land records have to be correct, complete, updated and shared. Further improvement is possible and enforcement efforts of tax authorities are needed to induce taxpayers' compliance behaviour. In addition to the general conclusion, the following are the findings for each specific objective:

6.1.1. Specific objective 1: To review property taxation system and land records in general and in Rwandan context

1. What are taxes and fees associated with land and improvements?

Based on tax laws and results about property taxation system, there are two types of property taxes/fees collected by tax authority, fixed asset tax and land lease fee. Fixed asset tax is based on market value approach and is paid by owners under freehold regime, whereas land lease fee, based on area-location approach, is paid by those under the emphyteutic lease. Therefore, the predominance of land lease fee is to be noticed in the study area. This situation is due to the fact that the emphyteutic lease is the common tenure regime in Rwanda whilst freehold is reserved only for some authorised developed land. Being an area-location based tax, land lease fee is cost effective as it requires less information and less technical expertise as does fixed asset tax. As levying taxes and fees implies also tax rates, it is found that fixed asset tax is levied at a uniform rate whereas land lease fee is levied at differentiated rates which mainly vary according to land use and location of the property. Land use is considered only when it is to distinguish agricultural lands from other uses. It is to be also noticed that the tax rates are not so much progressive to the extent that they allow lessening the burden on low-income groups. As a result, the majority of interviewed taxpayers found tax rates to be high.

2. What are the benefits of property taxation to the citizens?

Amount of taxes or fees that people pay has to be proportional to the benefits they get from the government. For the case of Rwanda, access to infrastructure is one of the requirements for a property to be subject to property tax/fee. This study reveals that the majority of selected taxable properties have access to infrastructure or public services like roads, health facilities, public transport, electricity, water and public schools. The recognition of the benefits of paying taxes or fees by the citizens is one of the factors that influence tax compliance if taxpayers are informed about it. However, results reveal that the majority of taxpayers do not pay property taxes/fees as recognition of benefits they get, but to avoid punishment.

3. What are activities and actors involved in the collection of property taxes and fees?

This research explores the process of property taxation in order to identify activities and actors involved. Taxation activities are performed by RRA, local governments, private valuers, banks and taxpayers. Four main activities are identified namely the identification of taxable properties, tax declaration and payment, property valuation and tax re-assessment. Identification of taxable properties is done electronically by RRA through cadastral data from RNRA's system (LAIS). Tax declaration and payment are done online by taxpayers using the internet or mobile phones. In addition, banks are involved in tax payment by receiving

money paid by taxpayers. However, results reveal that some taxpayers are not familiar with the online system and many of them are still visiting tax collection offices instead of using the online facilities developed for that purpose. Property valuation is done by private valuers to determine the market taxable value and it is only required for fixed asset tax and the declared value is re-assessed by district finance unit. However, it is observed that due to the fact that land records do not provide all necessary information for property valuation, valuers conduct field visits to collect data to be used in determining the market value of the property.

4. How is the management of land records organised in Rwanda?

Existing land records are managed at central and provincial level by RNRA and at the district level by One Stop Centres. A digital registry (LAIS) has been developed to store land related data, to support the maintenance of land records and to provide land information to other stakeholders including tax authorities. Concerning maintenance of land records, applications for land transactions are processed at the district level and notified to registrars of land titles for approval. In addition, to digital land records, physical files and duplicates of land certificates are kept to overcome the risk of data loss. Results reveal that currently, the cadastral system is only capable of proviing spatial and non-spatial information related to ownership and land use. The system lacks information on property values, buildings and improvements. This situation hampers the efficiency of property taxation especially the collection of fixed asset tax.

6.1.2. Specific objective 2: To analyse the needs of tax authorities to use land records in property taxation activities

1. What types of land information needed by government officials in the collection of property taxes and fees?

Types of land information needed in the collection of property taxes and fees are the landowner identification, parcel number, size of the parcel, location of the parcel, category of land, land use, property value and land certificate issuance date. In addition, for the property valuation tax authorities and private valuers need information on the market transactions as well as information on buildings or improvements namely their size, construction materials, volume, date of construction, etc. Apart from the property value, market transactions and information on building and improvements which are lacking in LAIS, the rest of information is digitally supplied by RNRA to RRA through a digital connection between the two institutions. Paper-based land records kept by RNRA and its affiliated agencies can be made available to tax authorities if needed.

2. How do tax authorities access to land information needed for property taxation purpose?

After the establishment of digital registry/cadastre in 2012, local governments started to apply for access to land information. Due to the lack of required infrastructure enabling data sharing, districts did not get continuous access to land information but RNRA managed to provide them with one-time data files. Tax officials made use of that information even if it was likely to be outdated after a few days. The use of land information with continuous access was acquired in August 2015 when RRA started collecting local taxes including property taxes/fees on behalf of and for the districts. The two institutions have established a connection between their databases to assure a continuous exchange of data.

3. How suitable are land records for property taxation purpose?

The review of the literature identifies some qualities that must be fulfilled by land records. They must be correct, completed, updated, available and shared. Concerning the correctness of land records, results reveal that some errors occurred during the systematic land registration and they are mostly known when they are reported by landowners. However, that many cases of those errors are not reported to RNRA to correct the land information accordingly. Land records updating is also one of the biggest challenges for the land administrators in Rwanda. Changes in land information either decided by the landowners or caused by a

government institution are not well reported. Land records updating is also affected by the issue of the parcels whose land use information is not in conformity with the master plan or other land use plans. The issue of land records updating is also noticed regarding the parcels which are under dispute for a long time without any reaction from conflicting parties. For the completeness of the land records, it is noticed that there are some parcels missing certain land information. In addition, the existing land records do not provide information on property values, markets transactions, buildings and improvements. All above-mentioned inconsistencies in land records affect the efficiency of property taxation system by making some properties to be out of the property taxation system thus decreasing the amount of tax revenue which would be collected.

6.1.3. Specific objective 3: To investigate the level of the contribution of land records to the ability of tax authorities to raise property-based revenues

1. To which extent do the land records facilitate the collection process of property-based revenues?

Results reveal that the use of land records has a positive impact on property taxation. Availability and use of land records in property taxation activities allowed tax authorities to reduce steps involved in the process, costs and time spent for property taxation activities. As land records are available, preliminary activities aiming at identifying the property to be taxed are no longer needed. However, due to the lack of information on the property values, market transactions, buildings and improvements, it is observed that the contribution of the existing land records in the field of property valuation process is too low. Field visits are still needed to collect most of the data used to determined the market value of the properties subject to fixed asset tax.

2. To which extent do land records contribute to the increase in the amount of the collected property-based revenues?

From data obtained, it is observed that property-based revenue has increased dramatically since the establishment of the land records in 2012. Results also reveal that the increase is mainly due to the use of land records in property taxation and the commitment of tax authorities to maximise tax revenue. However, due to errors or incompleteness in land records, a considerable number of taxpayers are wrongly exempted from paying taxes/fees or are out of the tax system which reduces the tax collection rate. As a result, every year a certain amount of taxes/fees is not collected and this affects the contribution of the property-based revenue in the relation to other tax revenue and to the district budget.

3. What is the contribution of land records in relation to the compliance of taxpayers to pay property taxes and fees?

Results reveal that there is a significant influence of land records on tax compliance. It is observed that the establishment of land records triggered the entrance of landowners into the property taxation system as the majority of them knew about their tax obligations after collecting their land certificates. This is also confirmed by the fact that the majority of interviewed taxpayers have voluntarily reported their properties to the revenue collection office to declare or to pay property taxes/fees. In addition, this study found that the taxpayers' feeling about tax obligations is dependent on the existence of land records.

6.2. Recommendations

In view of the above research conclusions, there are some recommendations to make the systems of land records management and property taxation more efficient for property-based revenue collection. These recommendations are addressed to the GoR and especially to its institutions in charge of property taxation and land records. For the improvement of the contribution of land records on property taxation, it is recommended to:

- Collect information of all unregistered properties to make them liable for property taxes or fees. This will help to improve equity among the taxpayers and to prevent tax evasion by people with bad faith, who in order to avoid payment of property taxes prefer not to register their land.
- Record information about the land or real estate markets, buildings and improvements on the land. Given the role of the market value of the property in property taxation, recording and making available that information to be used in property valuation will help to improve equity and efficiency in property taxation system.
- Put in place mechanisms enabling land records updating. This can be done by educating the citizens to register all land transactions and by strengthening cooperation between RNRA and other government institutions to make them sensitive to the issue of land records updating in case of changes in the land caused by the construction of public infrastructure. RNRA should be given the mandate to make a systematic update of the land use information recorded in LAIS according to master plans without waiting for the sporadic requests from the landowners.

For improvement of the property taxation system, the following are hereby suggested:

- Improve the fiscal cadastre. Data related to land registration provided by RNRA constitutes a good basis for RRA fiscal cadastre but they should be matched with records from other sources as the two institutions agreed upon.
- Conduct initial valuation of all taxable properties. Even if the rule is self-declaration, tax authorities and private valuers need to have information on the value of properties in the property valuation and re-assessment of tax declarations filed by taxpayers. To conduct an initial valuation, mass valuation is recommended as it is more cost effective than single property valuation.
- Adopt appropriate valuation approaches that are feasible and cost-effective. As Rwanda suffers from a lack of data about transaction markets, valuation approaches that require less information and expertise are highly recommended to the mitigate challenges of the market-valued approach. They include for example banded approach and area-location approach.

6.3. For further research

- As this research focuses only on the contribution of the use of land information on property taxation, a further research is needed to look at the role of the enforcement mechanisms as factors contributing to the increase of property-based revenues.
- Another research can also be conducted in order to investigate the contribution of property taxation in encouraging landowners to use their properties in a productive manner.

LIST OF REFERENCES

Agrawal, B. J. (2001). *Difference between tax & fee and guidelines for drafting of fiscal legislation*. Vineet Khand, India. Retrieved from http://ijtr.nic.in/articles/art52.pdf

Akingbade, A., Navarra, D., Zevenbergen, J., & Georgiadou, Y. (2012). The impact of electronic land administration on urban housing development: The case study of the Federal Capital Territory of Nigeria. *Habitat International*, *36*(2), 324–332. http://doi.org/10.1016/j.habitatint.2011.10.008

Alemie, B. K. (2015). *Urban cadastres for urban land governance: A socio-technical analysis*. University of Twente.

Ali, Z., Zevenbergen, J., & Tuladhar, A. (2013). Quality assessment of the land administration system in Pakistan. *Journal of Spatial Science*, *58*(1), 119–146. Retrieved from http://ezproxy.utwente.nl:2196/doi/pdf/10.1080/14498596.2012.759093

Anuar, S., & Radiah, O. (2010). Determinants of Online Tax Payment System in Malaysia. *International Journal of Public Information Systems*, *6*(1), 17–32. Retrieved from http://www.ijpis.net/ojs/index.php/IJPIS/article/view/72/67

Bahl, R., Vazquez, J. M., & Youngman, J. (2010). *Challenging the conventional wisdom on the property tax*. Cambridge, Massachusetts: Lincoln Institute of Land Policy.

Biraro, M. (2014). *Land Information Updating: Assessment and Options*. University of Twente.

Bird, R. M., & Slack, E. (2002). Land and Property Taxation: A Review (p. 47). http://doi.org/10.4337/9781845421434

Bird, R. M., & Slack, E. (2004). *International handbook of land and property taxation*. Cheltenham, UK: Edward Elgar Publishing Limited.

Bird, R. M., & Zolt, E. M. (2008). *Technology and Taxation in Developing Countries: From Hand to Mouse*. Toronto. Retrieved from http://ssrn.com/abstract=1086853

Bittner, S., & Frank, A. U. (2002). A formal model of correctness in a cadastre. *Pergamon Journals*, *26*(5), 465–482. http://doi.org/10.1016/S0198-9715(02)00014-5

Blankart, C. B. (2014). Land, men and taxation: An application to pre-modern China and Europe Erik Jones' European Miracle revisited. *Springer Science*, 393–406. http://doi.org/10.1007/s10602-014-9170-2

Burns, T., & Dalrymple, K. (2008). *Conceptual Framework for Governance in Land Administration*. Stockholm. Retrieved from https://www.fig.net/resources/monthly_articles/2008/burns_dalrymple_august_2008.asp

Buyinza, J. (2014). Understanding decentralised taxes. *New Times*. Retrieved from http://www.newtimes.co.rw/section/article/2014-03-31/74251/

Çağdaş, V. (2012). An application domain extension to CityGML for immovable property taxation: A Turkish case study. *International Journal of Applied Earth Observation and Geoinformation*, *21*(1), 545–555. http://doi.org/10.1016/j.jag.2012.07.013

Dale, P., & McLaughlin, J. (2000). *Land administration*. Oxford: Oxford University Press.

De Soto, H. (2003). *The mystery of capital: Why Capitalism triumphs in West and fails everywhere else?* New York: Basic Books.

Deininger, K. (2003). *Land policies for growth and poverty reduction*. Oxford etc. Washington, D.C.: Oxford University Press (OUP), The World Bank.

Dellinger, W. (1992). *Urban property tax reform: Guidelines and recommendations*. Washington, D.C.: The World Bank.

Dorji, S. (1999). *Review of the on going land information system development in survey of Bhutan*. University of Twente.

Enemark, S. (2005). Land Management and Development. In *CLGE International Conference 2005-European Professional Qualifications in Geodetic Surveying* (p. 14). Brussels. http://doi.org/10.1016/0269-7475(87)90027-4

Enemark, S., Bell, K. C., Lemmen, C., & McLaren, R. (2014). Fit-For-Purpose Land Administration. *International Federation of Surveyors (FIG)*, 44. Retrieved from https://www.fig.net/resources/publications/figpub/pub60/Figpub60.pdf

FAO. (2012). *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Rome: FAO. Retrieved from http://www.fao.org/docrep/016/i2801e/i2801e.pdf

Gasore, B. (2015, August 27). Local government revenue collection goes online. *New Times*. Kigali, Rwanda. Retrieved from http://www.newtimes.co.rw/section/article/2015-08-27/191953/

GBT. (2015). Property taxes. Retrieved August 26, 2015, from http://www.gbtwente.nl/index.php?page=products&section=belastingen

GoR. Law N°17/2010 of 12/05/2010 establishing and organising the real property valuation profession in Rwanda (2010). Kigali, Rwanda.

GoR. Law N° 59/2011 of 31/12/2011 establishing the sources of revenue and property of decentralized entities and governing their management (2011). Kigali, Rwanda.

GoR. Organic law n° 12/2013/OL of 12/09/2013 on state finances and property (2012). Kigali, Rwanda.

GoR. Presidential Order N°25/01 of 09/07/2012 establishing the list and thresholds of fees and other charges levied by the decentralized entities (2012). Kigali, Rwanda.

GoR. Law N°43/2013 of 16/06/2013 Governing Land in Rwanda (2013). Kigali, Rwanda.

Henssen, J. (2010). *Land registration and cadastre systems: principles and related issues*. München: Technische Universität München.

Horner, D. J., Josipovic, T., Petrova, D., Marosan, S., Maolen, P. van der, & Sadjadi, N. J. (2009). *Land registration and cadastre in selected European coutries: Austria, Bulgaria, Croatia, Hungary, Netherlands, Serbia*. Wien: Neuer Wissenschaftlicher Verlag.

Huye District. (2016). About The District. Retrieved January 28, 2016, from http://www.huye.gov.rw/index.php?id=394

James, S., & Alley, C. (2010). *Tax compliance, self-assessment and tax administration*. Munich. Retrieved from https://mpra.ub.uni-muenchen.de/26906/

Kathmann, R. M., & Kuijper, M. (2010). Taxpayer checks data in the system of base registers. In *FIG Congress 2010. Facing the Challenges-Building the Capacity* (pp. 11–16). Sydney. Retrieved from https://www.fig.net/resources/proceedings/fig_proceedings/fig2010/papers/ts01f/ts01f_kathmann_kuijper_3894.pdf

Kaufmann, J., & Steudler, D. (1998). *Cadastre 2014: A vision for a future cadastral system*. Brighton.

Khan, S., Kanyiginya, V., Kiema, J., Lengoiboni, M., & Tumusherure, W. (2015). *Influence of urban land policies on land markets and people's livelihoods in urban Rwanda. 20125 Annual World Bank Conference on Land and Proverty*. Washington, D.C.

Kopanyi, M. (2015). *Enhancing Own Revenues of Decentralised Entities in Rwanda*. London. Retrieved from http://www.theigc.org/wp-content/uploads/2015/05/Kopanyi-2015-Working-Paper.pdf

Kumar, R. (2005). *Research Methodology: A step-by-step guide for beginners* (3 rd editi). London etc.: SAGE Publications Ltd.

Loo, E. C., Mckerchar, M., & Hansford, A. (2009). Understanding the compliance behaviour of Malaysian individual taxpayers using a mixed method approach. *Journal of the Australasian Tax Teachers Association*, *Vol.4 No.1*(1), 181–202. http://doi.org/10.1007/s13398-014-0173-7.2

Mbembe, B. E., Daale, J., & Kairaba, A. (2012). *The Impact of Land Lease Fee on Landowners: Rwanda Case Study*. Kigali, Rwanda. Retrieved from http://www.risdrwanda.org/IMG/pdf/Land_Tax_study_final-2.pdf

MININFRA. (2011). *Huye City Local Urban Development Plan*. Kigali, Rwanda.

MINIRENA. National Land Policy (2004). Kigali, Rwanda. Retrieved from http://rnra.rw/index.php?id=18

MINIRENA. Ministerial order n°002/2008 of 01/4/2008 determining modalities of land registration (2008). Kigali, Rwanda.

MINIRENA. Ministerial order N° 009/16.01 of 23/08/2011 determining the procedure to obtain a freehold land title (2011). Kigali, Rwanda.

Muñoz, D. (2011). *Innovative Land and Property Taxation*. Nairobi: UN-HABITAT. Retrieved from http://unhabitat.org/books/innovative-land-and-property-taxation/

Musharraf, R. C., Karuranga, C., & Vaillancourt, F. (2013). *Local Government Revenue Potential in Rwanda*. Kigali, Rwanda.

Muyombano, S. (2014). *Ensuring Sustainable Cadastral Updates of Community Perspectives in Runda Sector , Rwanda*. University of Twente.

NEN. (2013). Geographic information-Data quality. Enschede, The Nethelands: ITC.

Oberholzer, R. (2008). Attitudes of South African taxpayers towards taxation: A pilot study. *BusinessAccountancy Business and the Public Interest*, *7*(1), 44–69. Retrieved from http://visar.csustan.edu/aaba/Oberholzer2008.pdf

OECD. (2010). *Understanding and Influencing Taxpayers' Compliance Behaviour*. Paris. Retrieved from http://www.oecd.org/tax/administration/46274793.pdf

Ritsema, C. M., Thomas, D. W., & Ferrier, G. D. (2003). Economic and behavioral determinants of tax compliance: evidence from the 1997 Arkansas Tax Penalty Amnesty Program. In *2003 IRS Research Conference*. Washington, D.C. Retrieved from https://www.irs.gov/pub/irs-soi/ritsema.pdf

RNRA. (2012). *Rwanda Land Administration System Procedures Manual* (Version V1). Kigali, Rwanda. Retrieved from http://rnra.rw/fileadmin/fileadmin/user_upload/documents/LAS_Manual.pdf

RNRA. (2013a). *Land Administration Enhancement Project: Inception Report*. Kigali-Rwanda.

RNRA. (2013b). RNRA -News Details. Retrieved June 21, 2015, from http://rnra.rw/index.php?id=51&tx_ttnews%5Btt_news%5D=117&cHash=740329f157fa37184a2fb36858e59af4

RRA. (2015a). History of RRA. Retrieved August 17, 2015, from http://www.rra.gov.rw/spip.php?article15#

RRA. (2015b). Rwanda Automated Local Government Tax Management System. Retrieved November 18, 2015, from http://localgov.rra.gov.rw/feesServiceForm

Sagashya, D., & English, C. (2007). Designing and Establishing a Land Administration System for Rwanda: Technical and Economic Analysis, 1–42. Retrieved from

http://www.fig.net/resources/proceedings/2009/fig_wb_2009/papers/sys/sys_2_english_sagashya.pdf

Steudler, D. (2014). *CADASTRE 2014 and Beyond*. Copenhagen: International Federation of Surveyors (FIG). Retrieved from http://www.fig.net/pub/figpub/pub61/Figpub61.pdf

Tuladhar, A. M. (2004). *Parcel-based Geo-Information System: Concepts and Guidelines*. ITC, Enschede, The Nethelands.

Tuladhar, A. M., Radwan, M., Kader, F. A., & El-Ruby, S. (2005). Federated data model to improve accessibility of distributed cadastral databases in land administration. In *Proceedings of the FIG Working Week and GSDI 8 : From Pharaohs to Geinformatics* (pp. 16–21). Cairo: FIG.

UNECE. (1996). *Land Administration Guidelines. With Special Reference to Countries in Transition*. New York and Geneva: United Nations Publication.

UN-HABITAT. (2004). *Tools to Support Transparency in Local Governance*. Nairobi, Kenya. Retrieved from http://www.transparency.org/whatwedo/pub/tools_to_support_transparency_in_local_governance

UN-HABITAT. (2013). *Training Package : Tools to Support Transparency in Land Administration*. Nairobi, Kenya. Retrieved from http://unhabitat.biz/tools-to-support-transparency-in-land-administration-training-package-trainers-guide/

UNSD. (2005). *Designing Household Survey Samples: Practical Guidelines* (Vol. ST/ESA/STA). New York. http://doi.org/10.1177/0193841X07311993

Van der Molen, P. (1998). Land registers and cadastre as prerequisites for land and building taxation : A case study of the Netherlands. *Incontro Di Studio CE.S.E.T Valori Immobliari, Catasto E Fiscalita, Protomoteca Del Campidoglio*, *XXVII*, 11 p. Retrieved from http://ezproxy.utwente.nl:2048/login?url=https://webapps.itc.utwente.nl/library/1998/pres/vandermolen_lan.pdf

Walters, L. (2011). *Land and Property Tax: A Policy Guide*. Nairobi: UN-HABITAT. Retrieved from http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3177

Wehrmann, B. (2006). *Cadastre in Itself Won't Solve the Problem: The Role of Institutional Change and Psychological Motivations in Land Conflicts – Cases from Africa*. Germany. Retrieved from https://www.fig.net/resources/monthly_articles/2006/march_2006/wehrman_march_2006.pdf

Wenzel, M. (2002). Tax Compliance and the Psychology of Justice: Mapping the Field. In V. Braithwaite (Ed.), *Taxing Democracy* (pp. 41–69). Aldershot: Ashgate Publishing Ltd.

Wenzel, M. (2004). An analysis of norm processes in tax compliance. *Journal of Economic Psychology*, *25*(2), 213–228. http://doi.org/10.1016/S0167-4870(02)00168-X

Williamson, I., Enemark, S., Wallace, J., & Rajabifard, A. (2010). *Land Administration for Sustainable Development Sustainable Development*. California: ESRI Press.

World Bank. (2005). *African Development Indicators 2001*. Washington, D.C. Retrieved from https://openknowledge.worldbank.org/handle/10986/13111

World Bank. (2010). *Land Governance Assessment Framework Manual World Bank Study on Governance in Land Administration*. Washington, D.C.

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd editio). Newbury Park: SAGE Publications.

Youngman, J. M. (1996). Tax on Land and Buildings. In *Tax Law Design and Drafting* (Vol. I, pp. 264–291). Washington, D.C.: IMF. Retrieved from http://www.imf.org/external/pubs/nft/1998/tlaw/eng/ch9.pdf

Zevenbergen, J. (2002). Systems of Land Registration, Aspects and Effects. *Geodesy*, *51*(September), 223.

Zevenbergen, J. (2004). A Systems Approach to Land Registration and Cadastre. *Nordic Journal of Surveying and Real Estate Research*, *1 (2004)*, 11–24.

APPENDICES

Appendix 1: Interview Schedule for Taxpayers

My name is Jean Baptiste Uwihoreye Mukarage and I am a student at the University of Twente, Faculty of Geo-Information Science and Earth Observation. I am doing a research on the contribution of land records on property taxation in Rwanda. I request your participation in this research by answering some questions. The information that you are going to provide will be used anonymously and only for the purpose of this study.

1. Interviewee information

Address:

District:.....
Sector:.....
Cell:.....
Village:.....

Gender:

☐ Male
☐ Female

Age:.....

Educational level:

☐ No education
☐ Primary education
☐ Secondary education
☐ Tertiary education

Occupation:

☐ Unemployed
☐ Farmer
☐ Private employee
☐ Student
☐ Business/self employed
☐ Public servant
☐ Casual worker
☐ Other (specify)

Monthly income

☐ Less than Rwf 50,000
☐ Between Rwf 50,000 and Rwf 100,000
☐ Above Rwf 100,000

2. Property information

Plot number:.....
Size:.....
Location: District:....., Sector:.....Cell.....
Type of the property:

☐ Land only
☐ Land and improvements

Category of land

☐ Rural
☐ Urban

Land use information

On the ground	On the ownership document
☐ Residential	☐ Residential
☐ Agriculture	☐ Agriculture
☐ Commercial	☐ Commercial
☐ Animal husbandry	☐ Animal husbandry
☐ Industrial	☐ Industrial
☐ Economic	☐ Economic
☐ Forestry	☐ Forestry
☐ Tourism	☐ Tourism
☐ Social and cultural	☐ Social and cultural
☐ Science and scientific research	☐ Science and scientific research
☐ Fishing	☐ Fishing

Accessibility to public services/infrastructure

☐ Electricity
☐ Roads
☐ Waste management
☐ Education
☐ Recreational facilities
☐ Public transport
☐ Health facilities
☐ Water supply
☐ Other (Specify)

Tenure regime:

☐ Leasehold
☐ Conditional freehold
☐ Freehold

Ownership documents

☐ Not available
☐ Lease contract
☐ Certificate of registration of emphyteutic lease
☐ Certificate of conditional freehold
☐ Certificate of freehold

3.<u>Questions</u>:

1. Which property taxes/fees are you subject to?
   ☐ Fixed asset tax
   ☐ Land lease fees
2. What is the amount of money do you pay?.....
3. When did you start paying property tax/fees?.....
4. What is the role do you play in property taxation process?
   ☐ Declaration
   ☐ Assessment
   ☐ Other (specify)
   ☐ Appeal
   ☐ Payment
5. Which one of the following methods has been applied to your first tax payment?
   ☐ Voluntarily self-declaration and payment
   ☐ Declaration and payment after government intervention
   ☐ Tax declaration and payment when seeking an administrative service
   ☐ Other (specify)
6. How do you file tax declaration or pay property tax/fees?
   ☐ At tax collection office
   ☐ Online
   ☐ By phone
   ☐ Other (specify)

7. How regular do you file tax declaration or pay property tax/fees?
   - ☐ Always before/on due date
   - ☐ Sometimes before/on due date or with delay
   - ☐ Always with delay
8. If the tax declaration or payment is done with delay, what are enforcement actions which have been taken against you?
   - ☐ Fines for late payment
   - ☐ Seizure and sale of property
   - ☐ Warning letter
   - ☐ Attachment of rent
   - ☐ Other (specify)
9. How many times did you pay property taxes/fees form 2011?
   ☐ 2011 ☐ 2012 ☐ 2013 ☐ 2014 ☐ 2015
10. Do you use land records in the fulfilment of your obligation of paying property tax/f☐? Y☐ No
11. If yes, what type of land records do you use?
    - ☐ Land certificate
    - ☐ National land registry
    - ☐ Archived physical files
12. If not, what do you use?.....
13. How do you see land information provided in land records complete and correct for property taxation purpose?.....
14. Which one the following defects in land records have you ever experienced?
    - ☐ Overestimation of parcel size subject to property tax/fees
    - ☐ Errors on land use
    - ☐ Errors on category of land (urban or rural)
    - ☐ Errors on parcel location
    - ☐ Errors on landowner's identification
    - ☐ Other specify
15. What are the consequences of the defects in land records do you often notice?
    - ☐ Overbilling
    - ☐ New land survey
    - ☐ Overpayment
    - ☐ Rectification of information
    - ☐ Objection from tax payers
    - ☐ Issuance of new land certificate
    - ☐ Other (specify)
16. Do you notice any difference between now and before the land registration programme and the establishment of national land registry? ☐ Yes ☐ No
17. If yes, what are changes?.....
18. If no, why not?.....
19. In your opinion, how do you rank the following factors that influence your tax compliance
    - ☐ Financial ability
    - ☐ Attitude
    - ☐ Fear to be punished
    - ☐ Recognition of the benefits of paying taxes
20. Do you feel obliged to pay taxes or fees due to the fact that your land has been registered and a land certificate has been issued to you?
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Do not agree
21. How do you see the tax/fees rates that are applied to you?
    - ☐ High
    - ☐ Fair
    - ☐ Too low

Appendix 2: Interview schedule for Government Officials in charge of land records

My name is Jean Baptiste Uwihoreye Mukarage and I am a student at University of Twente, Faculty of Geo-Information Science and Earth Observation. I am doing a research on the contribution of land records on property taxation in Rwanda. I request your participation in this research by answering some questions. The information that you are going to provide will be used anonymously and only for the purpose of this study.

Interviewee information

Position:.....
Organisation:.....
How does your job support property taxation?.....

Questions

1. What are types of land records kept by your institution?
   ☐ Maps ☐ Deeds
   ☐ Land certificates/titles ☐ Other (specify)
2. How land records are established?.....
3. What are formats in which land records are established?
   ☐ Digital only
   ☐ Paper-based only
   ☐ Mixed
4. How land records are maintained?.....
5. Do you receive requests for land information from tax authorities?
   ☐ Yes
   ☐ No
6. How is land information provided in land records in terms of completeness and correctness for property taxation purpose?.....
7. What types of land information do tax authorities request?.....
8. What are procedures for accessing land information kept in land records?.....
9. How do you provide land information to tax authorities request?.....
10. Do you satisfy the needs of tax authorities in terms of land information requested?.....
11. If no, what are types of land information that you are not able to provide to tax authorities and which is relevant for property taxation activities?.....
12. How is land information provided in land records in terms of correctness and completeness?.....
13. What types of complaints about defects in land records do you receive from taxpayers or tax authorities? .....
14. What do you do when defects in land records are reported?.....
15. Do you notice any difference in land records management between now and before the land registration programme and the establishment of the national land registry? Yes ☐ No ☐
16. If yes, what has changed?.....
17. If no, why not?.....
18. What are obstacles do you encounter in providing land information to tax authorities?.....
19. What are current and future developments in land administration to meets all tax authorities' needs?.....

Appendix 3: Interview schedule for government officials in charge of property taxation

My name is Jean Baptiste Uwihoreye Mukarage and I am a student at the University of Twente, Faculty of Geo-Information Science and Earth Observation. I am doing a research on the contribution of land records on property taxation in Rwanda. I request your participation in this research by answering some questions in 30 minutes. The information that you are going to provide will be used anonymously and only for the purpose of this study.

Interviewee information

Position:.....
Organisation:.....

Questions:

1. What was your position before 2012 and what is your current position in your organisation
   a) Before 2012:.....
   b) Current position:.....
2. What are types of property taxes and fees collected in your area/organisation?.....
3. Among those property taxes and fees which one cannot be collected without using land records?
4. What are tax rates of property taxes and fees do you apply in this area?.....
5. What are procedures of fixing tax rates of property taxes and fees?.....
6. What are institution (s) in charge of setting tax rates of property taxes and fees?.....
7. Are there any types of properties exempted from paying property taxes or f☐ Yes ☐ No
8. If yes, what are they and what is the justification for the exemption?.....
9. What are the authorities entitled to approve exemptions from payment of property taxes and fees?.....
10. What are property taxation activities, actors their roles?.....
    In your opinion, do you think that the existence and use of land records is a prerequisite for property taxation? ☐ Yes No ☐
11. If yes, what are property taxation activities performed by using land records and the type of information needed?.....
12. If no, what are other sources of information do you have at your disposal?.....
13. What are institutions that provide land information needed for property taxation?.....
14. What is the format of land information do you mostly use?
    ☐ Digital
    ☐ Paper based
    ☐ Mixed
15. How do you acquire land information needed for property taxation?
    ☐ Online application
    ☐ Application letter
    ☐ No need to apply (connected systems)
16. What are procedures to access land information?.....
17. Are you satisfied with procedures to access land information? ☐ Yes ☐ No
18. If yes, explain your reason for satisfaction.....
19. If no, explain your reason for dissatisfaction.....
20. What are requirements to access land information?.....
21. Are you satisfied with the requirements to access land information? ☐ Yes ☐ No
22. If yes, explain your reason for satisfaction.....

23. If no, explain your reason for dissatisfaction.....
24. By which means do you receive land information from land records kept by institutions dealing with land matters?
    - ☐ Written note
    - ☐ Excel sheet
    - ☐ Word document
    - ☐ Shapefile
    - ☐ Ortho-photo
    - ☐ Maps
    - ☐ Distributed system
25. Are you satisfied with the ways of accessing land information? ☐ Yes ☐ No
26. If yes, explain your reason of satisfaction.....
27. If no, explain your reason for dissatisfaction.....
28. How is land information provided by institutions dealing with land matters in terms of completeness and correctness for property taxation purpose?.....
29. What are mechanisms for checking their completeness and correctness?.....
30. What are types of information missing in land records and relevant for property taxation?
31. What are property taxation activities that are currently performed without using land records?.....
32. What are type of defects in land records do you experience?.....
33. What are the consequences of the defects in land records? .....

    Do you notice any difference in property taxation between now and before the land registration programme and the establishment of the national land registry? ☐ Yes ☐ No
34. If yes, what has changed? .....
35. If no, why not?.....
36. What are mechanisms do you use to improve tax compliance? .....
37. What are public services offered to the population in order to show them the importance of paying property taxes and fees? .....

Appendix 4: Interview schedule for top district officials

My name is Jean Baptiste Uwihoreye Mukarage and I am a student at the University of Twente, Faculty of Geo-Information Science and Earth Observation. I am doing a research on the contribution of land records on property taxation in Rwanda. I request your participation in this research by answering some questions. The information that you are going to provide will be used anonymously and only for the purpose of this study.

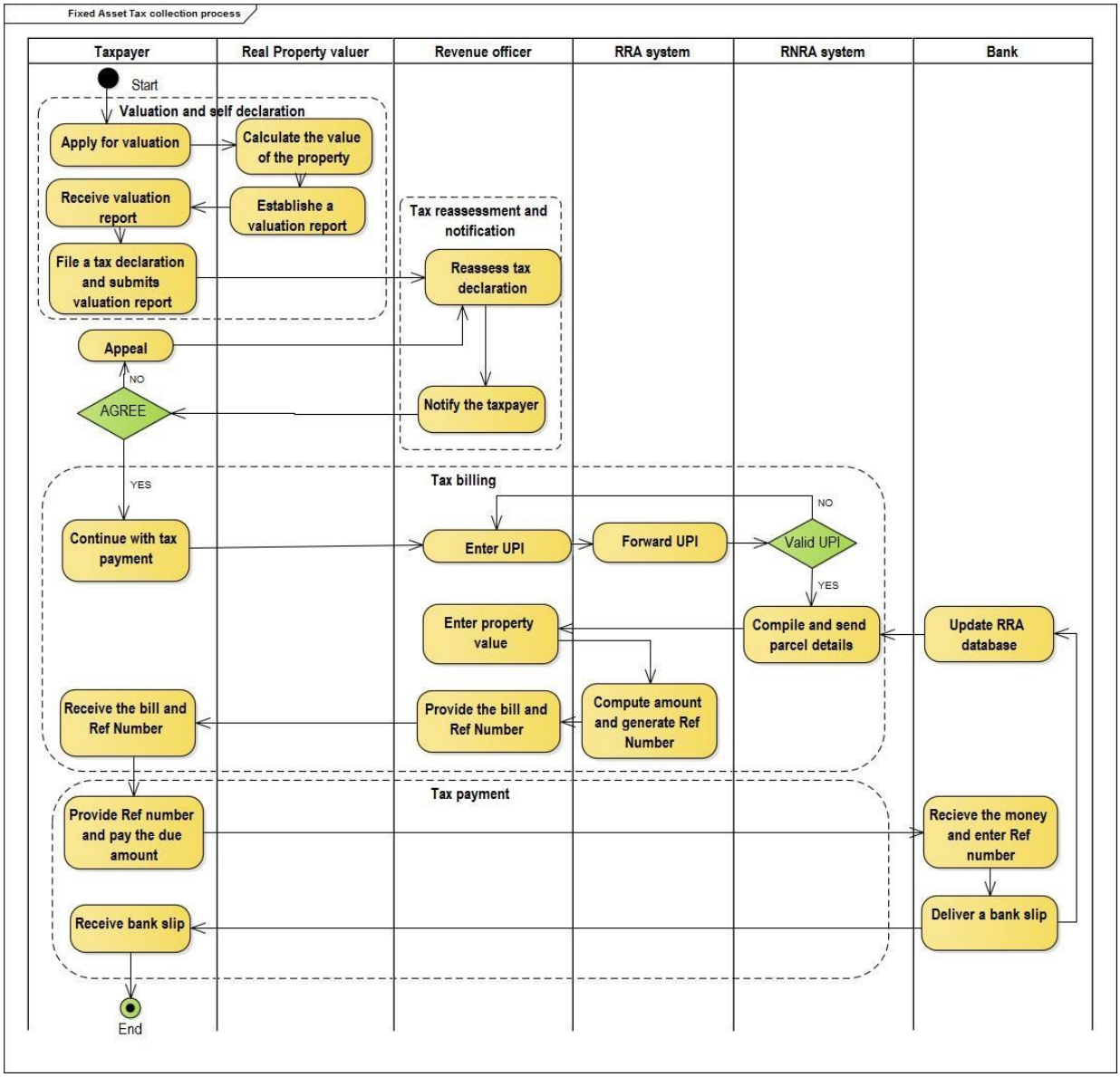
Interviewee information

Position:.....
Organisation:.....

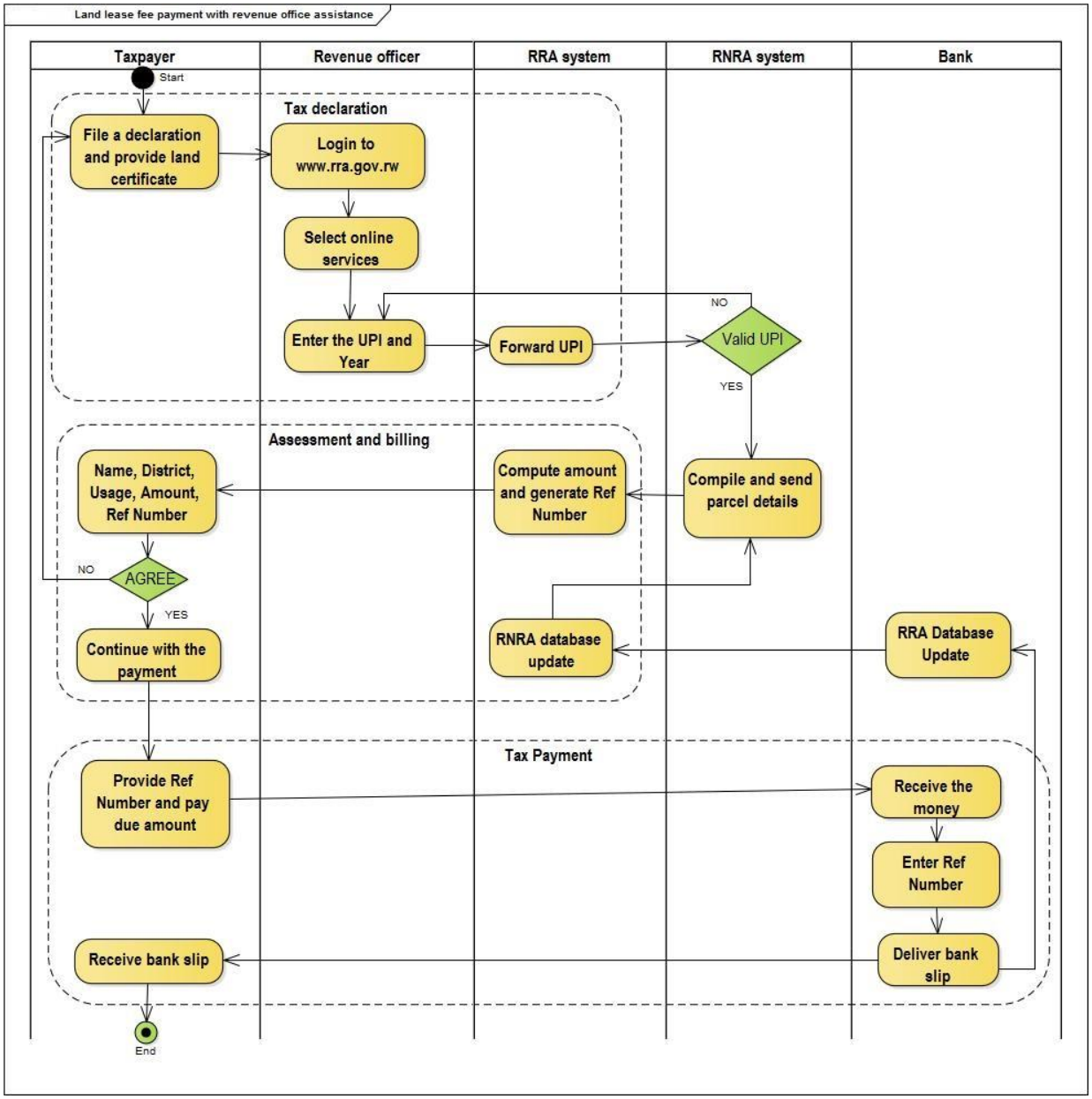
Questions:

1. What are types of property taxes and fees collected in your area?.....
2. What are tax rates of property taxes and fees do you apply in this area?.....
3. What are procedures for fixing tax rates of property taxes and fees?.....
4. What are institution (s) in charge of setting tax rates of property taxes and fees?.....
5. Are there any types of properties exempted from paying property taxes or fees?
   - ☐ Yes
   - ☐ No
8. If yes, what are they and what is the justification for the exemption? .....
9. What are the authorities entitled to approve exemptions from payment of property taxes and fees?.....
10. Who finances property taxation activities?.....
11. How do you see the significance of property taxes and fees collected compared to collection cost?.....
12. Who do you see the collaboration between instructions in charge of property taxation and those in charge of land records?
    - ☐ Very good
    - ☐ Good
    - ☐ Not good
    - ☐ Inexistent

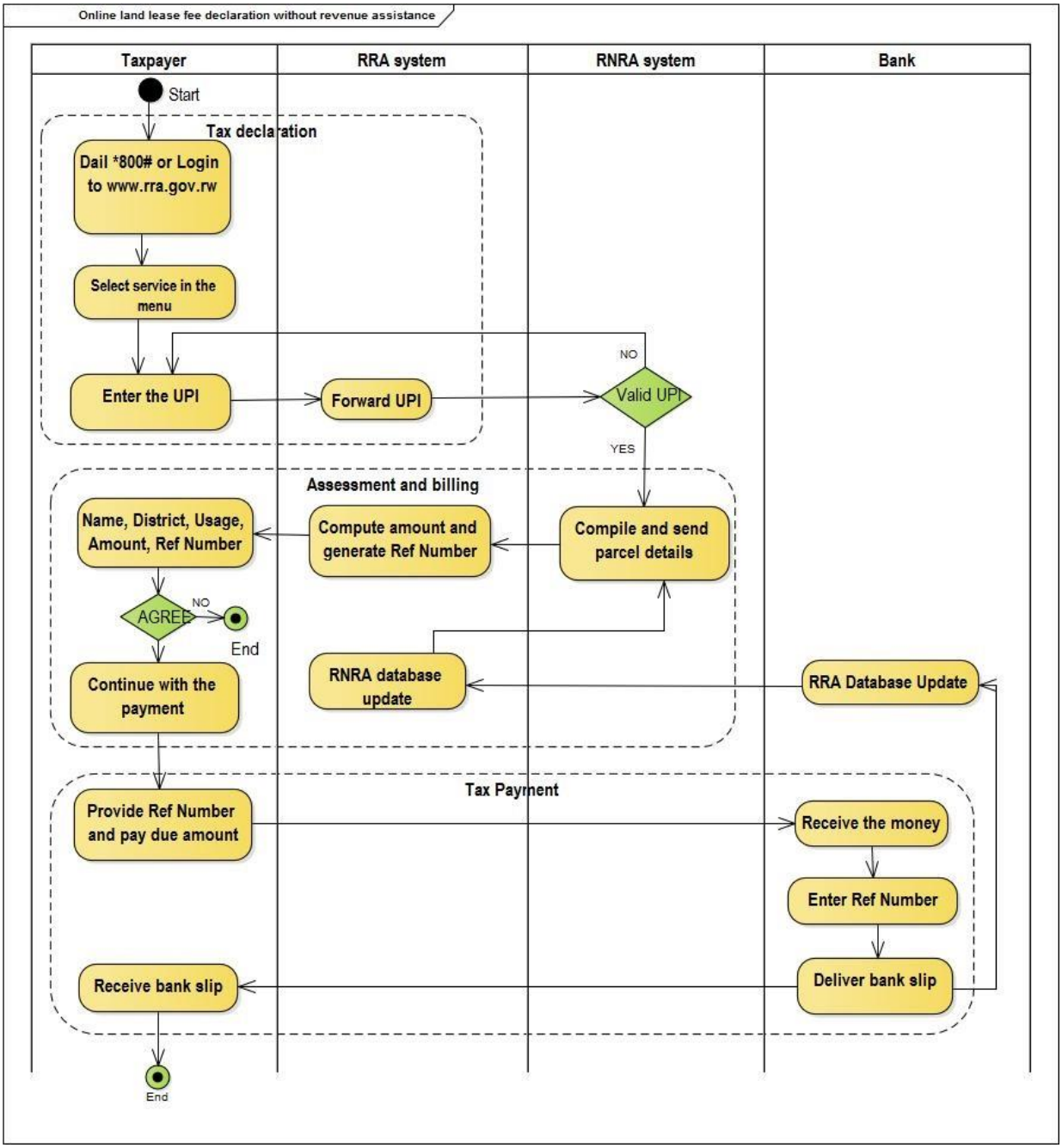
Appendix 5: Fixed asset tax collection process



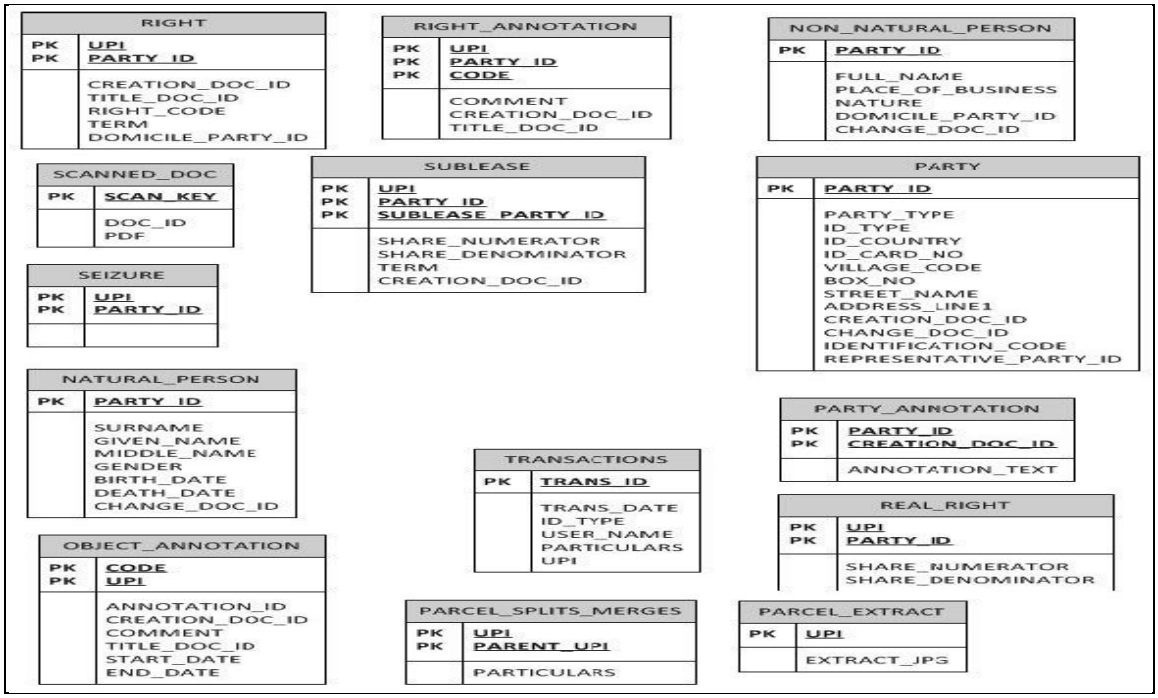
Appendix 6: Land lease fee collection process with assistance of revenue office

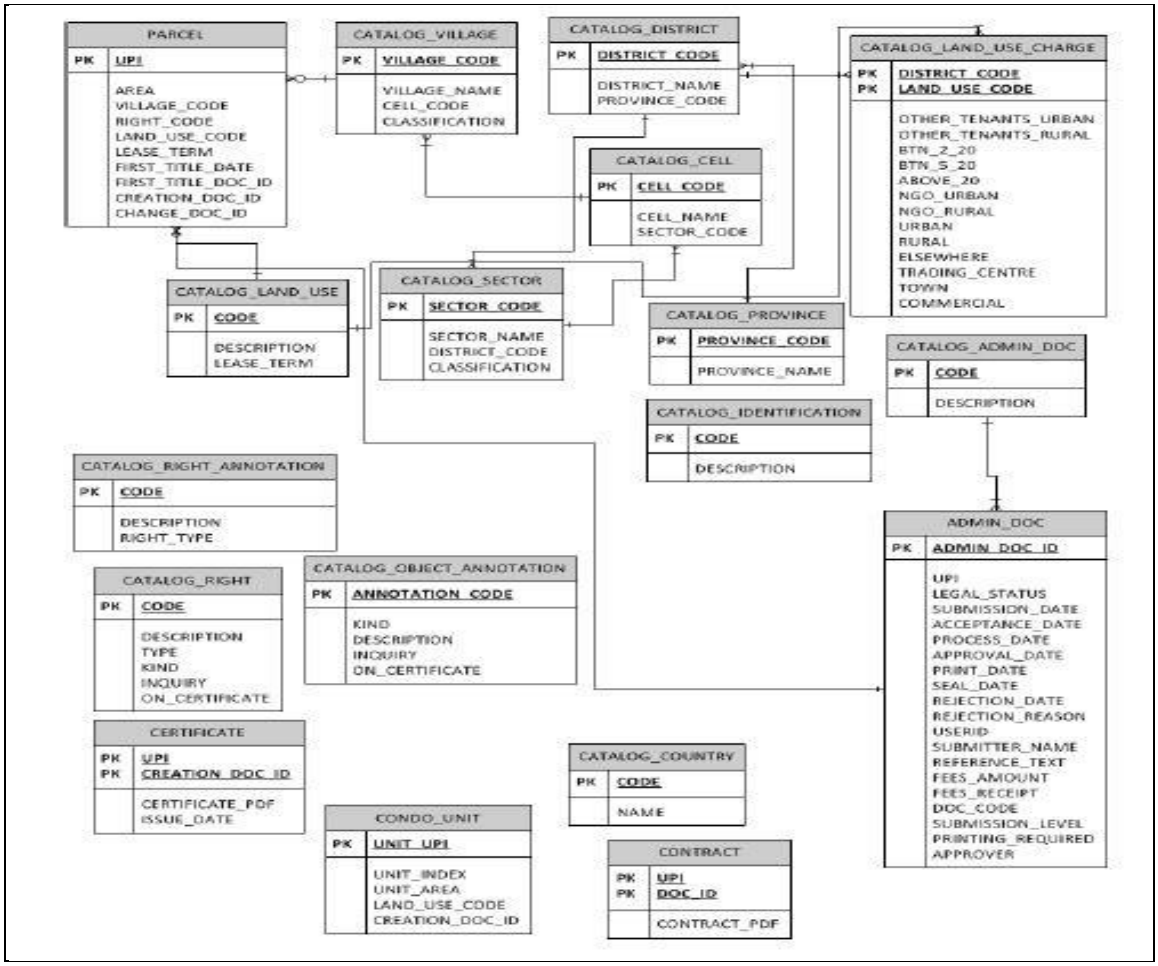


Appendix 7: Land lease collection process without assistance of revenue office

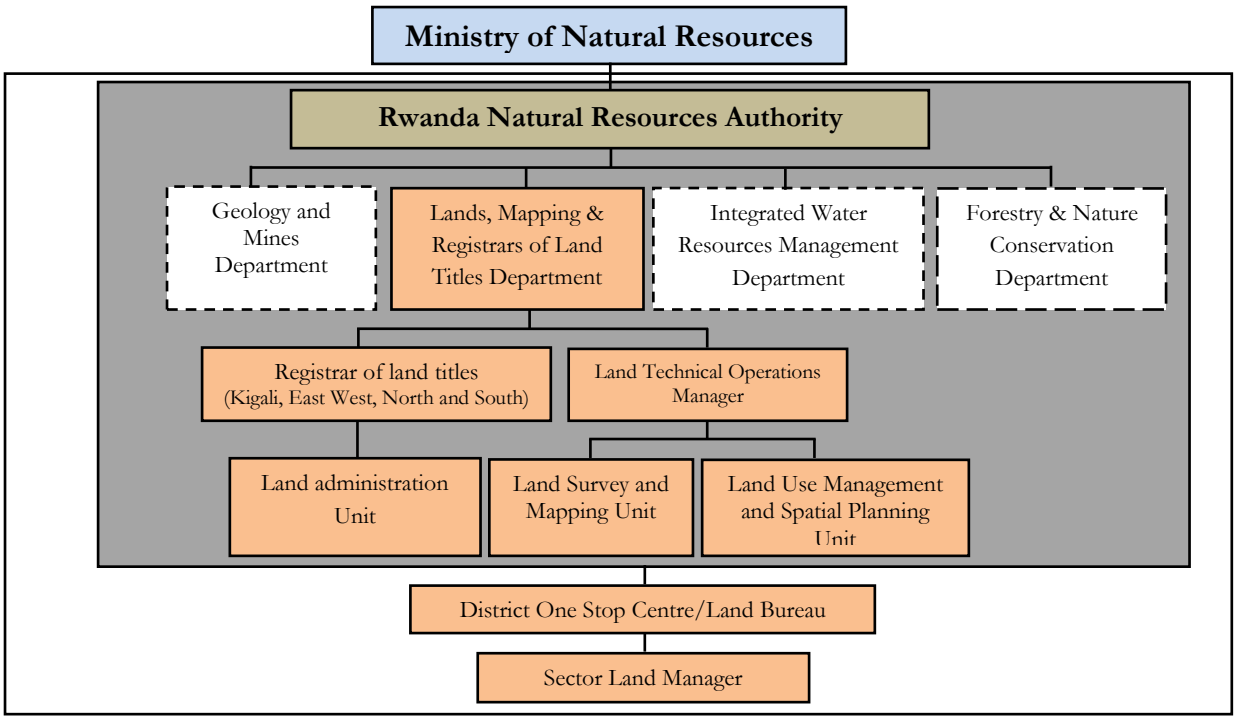


Appendix 8: Classes of Land Administration Information System (LAIS)

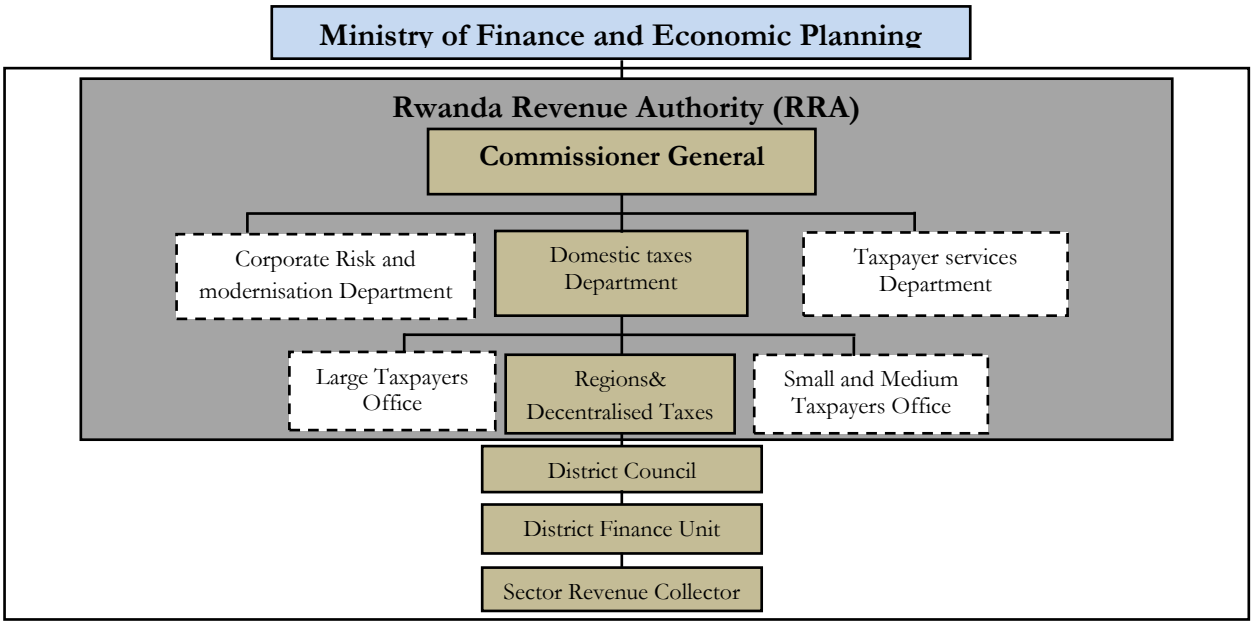




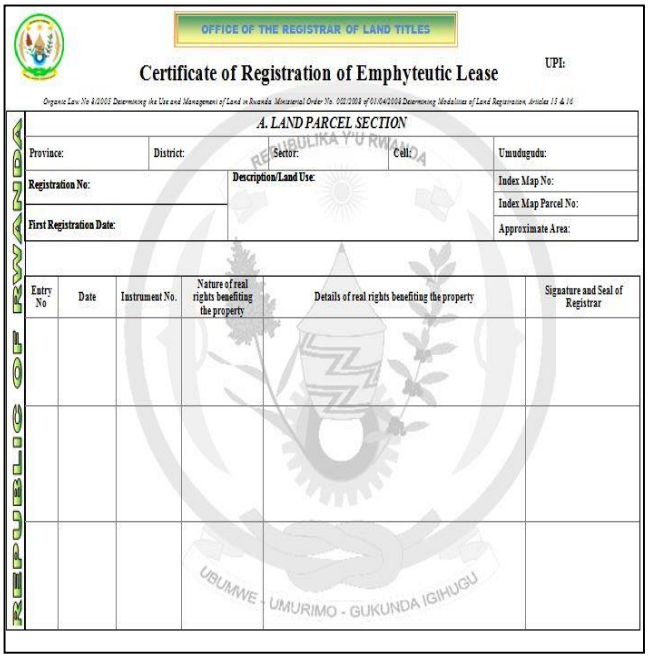
Appendix 9: Institutions involved in the management of land records in Rwanda



Appendix 10: Institutions involved in property taxation in Rwanda



Appendix 11: Certificate of Registration of Emphyteutic Lease



OFFICE OF THE REGISTRAR OF LAND TITLES

Certificate of Registration of Emphyteutic Lease

UPI:

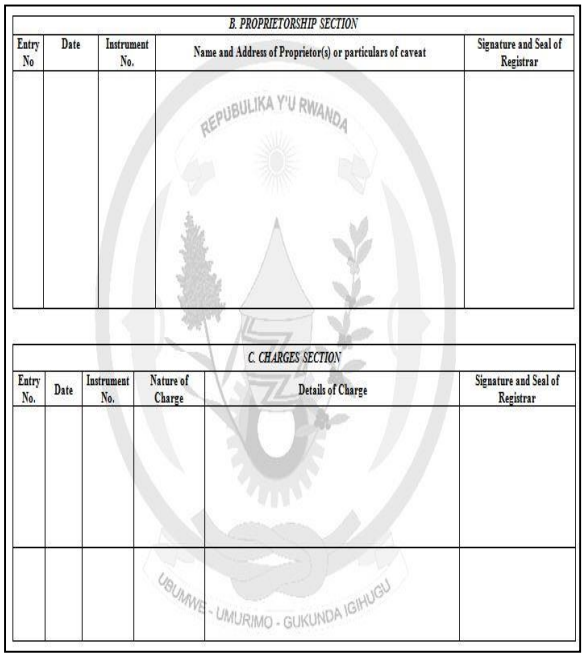
Organic Law N° 8/2005 Determining the Use and Management of Land in Rwanda Ministerial Order N° 002/2008 of 01/04/2008 Determining Modalities of Land Registration, Articles 15 & 16

REPUBLIC OF RWANDA

A. LAND PARCEL SECTION

Province:	District:	Sector:	Cell:	Umudugudu:
Registration No:	**Description/Land Use:**			Index Map No:
				Index Map Parcel No:
First Registration Date:				Approximate Area:

Entry No	Date	Instrument No.	Nature of real rights benefiting the property	Details of real rights benefiting the property	Signature and Seal of Registrar



B. PROPRIETORSHIP SECTION

Entry No	Date	Instrument No.	Name and Address of Proprietor(s) or particulars of caveat	Signature and Seal of Registrar

C. CHARGES SECTION

Entry No.	Date	Instrument No.	Nature of Charge	Details of Charge	Signature and Seal of Registrar

Appendix 12: Contract of Emphyteutic Lease

REPUBLIC OF RWANDA

OFFICE OF THE REGISTRAR OF LAND TITLES

UPI:

CONTRACT OF EMPHYTEUTIC LEASE N°

IN ACCORDANCE WITH Law n° 43/2013 of 16/06/2013 Governing land in Rwanda and the Ministerial Order N°001/2008 of 01/04/2008 Determining the Requirements and Procedures for the Land Lease;

BETWEEN The Republic of Rwanda, here represented by the Registrar of Land Titles (hereinafter referred to as "the Landowner") of one part,

AND the following person/s (hereinafter together referred to as "the Lessee") of the other part.

Lessee(s) Name(s)	Identity Number(s)	Share %
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Elected Address:

Representative: *Sector:*

Country: *Cell:*

Province: *Umudugudu:*

District:

Article 1:
Right of Emphyteusis

The Landowner grants to the Lessee, who accepts, the right of Emphyteusis for a term of ... years on the parcel of land described as follows:

Province: Parcel N° :

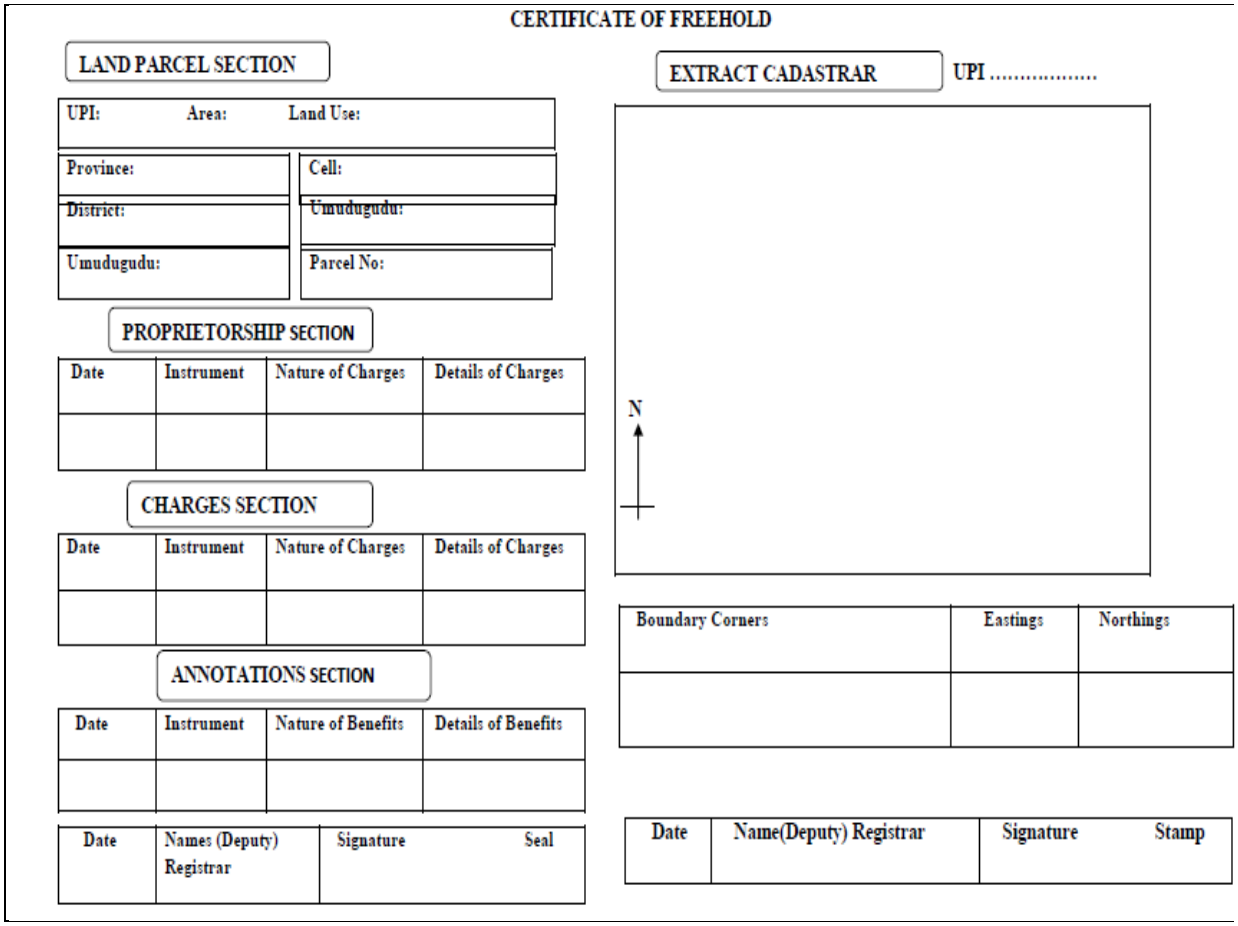
District: Area :

Sector: Term starts :

Cell: Term expires:

Village: Land Use:

Appendix 13: Certificate of Freehold Title



CERTIFICATE OF FREEHOLD

LAND PARCEL SECTION

UPI:	Area:	Land Use:
Province:		Cell:
District:		Umudugudu:
Umudugudu:		Parcel No:

PROPRIETORSHIP SECTION

Date	Instrument	Nature of Charges	Details of Charges

CHARGES SECTION

Date	Instrument	Nature of Charges	Details of Charges

ANNOTATIONS SECTION

Date	Instrument	Nature of Benefits	Details of Benefits

Date	Names (Deputy) Registrar	Signature	Seal

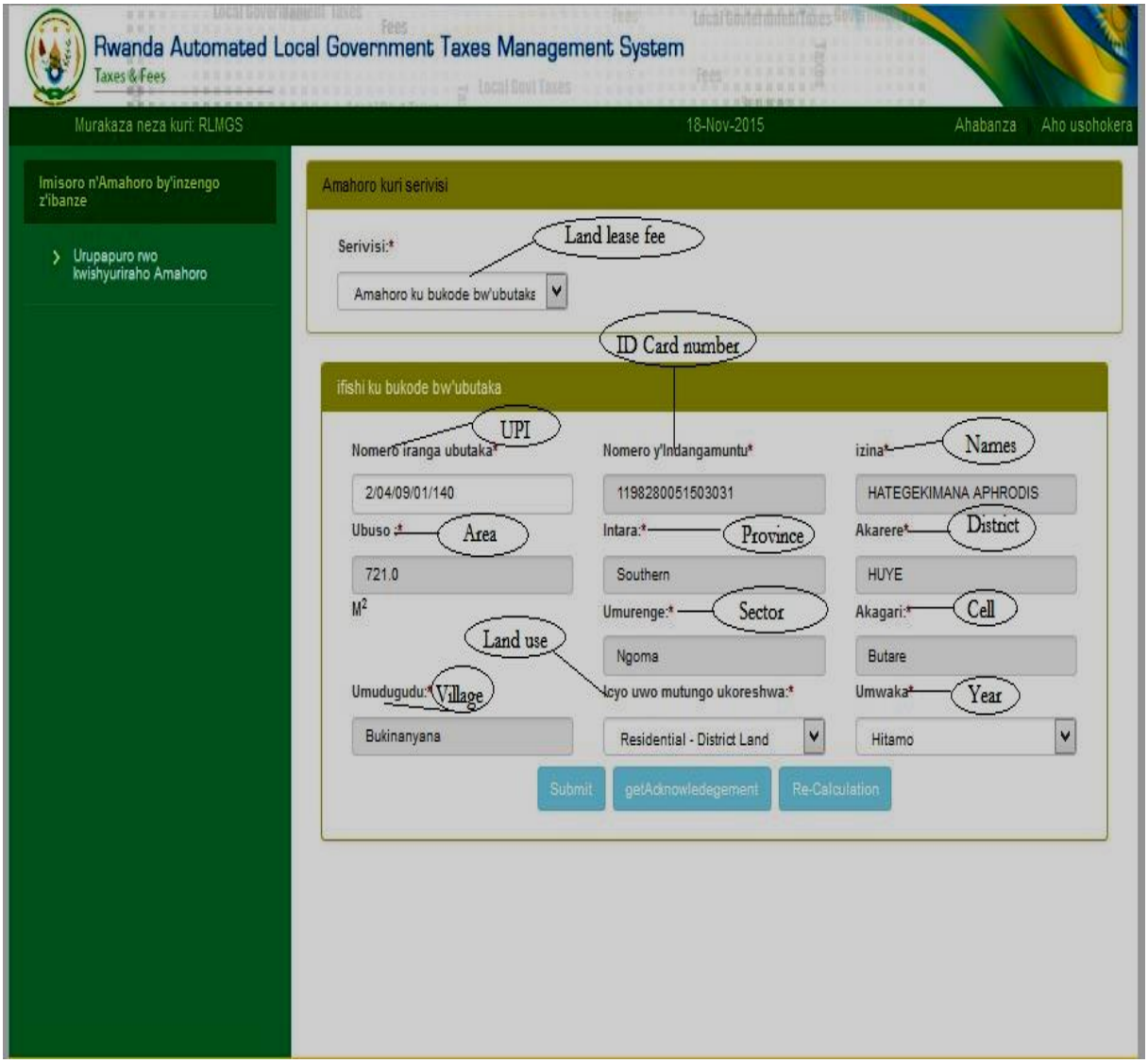
EXTRACT CADASTRAR UPI .....

N

Boundary Corners	Eastings	Northings

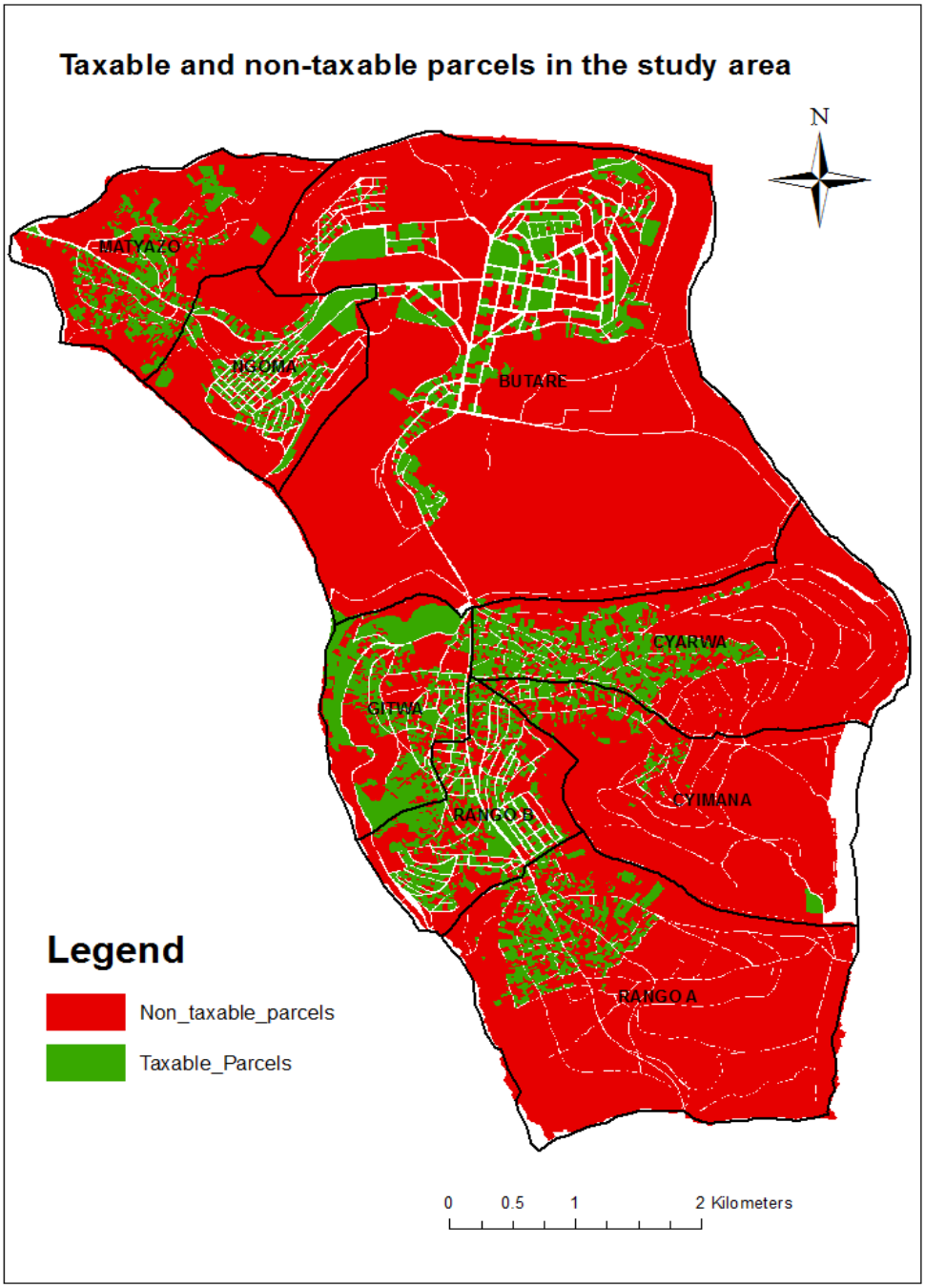
Date	Name(Deputy) Registrar	Signature	Stamp

Appendix 14: Illustration of use of land information in collection of land lease fee



Rwanda Automated Local Government Tax Management System (RRA, 2015b).

Appendix 15: Map of taxable and non-taxable parcels in the study area



Appendix 16: Research design