A STUDY OF WORKFLOWS IN RWANDAN LAND ADMINISTRATION: TOWARDS A SYNERGY BETWEEN LAND NOTARY AND REGISTRAR
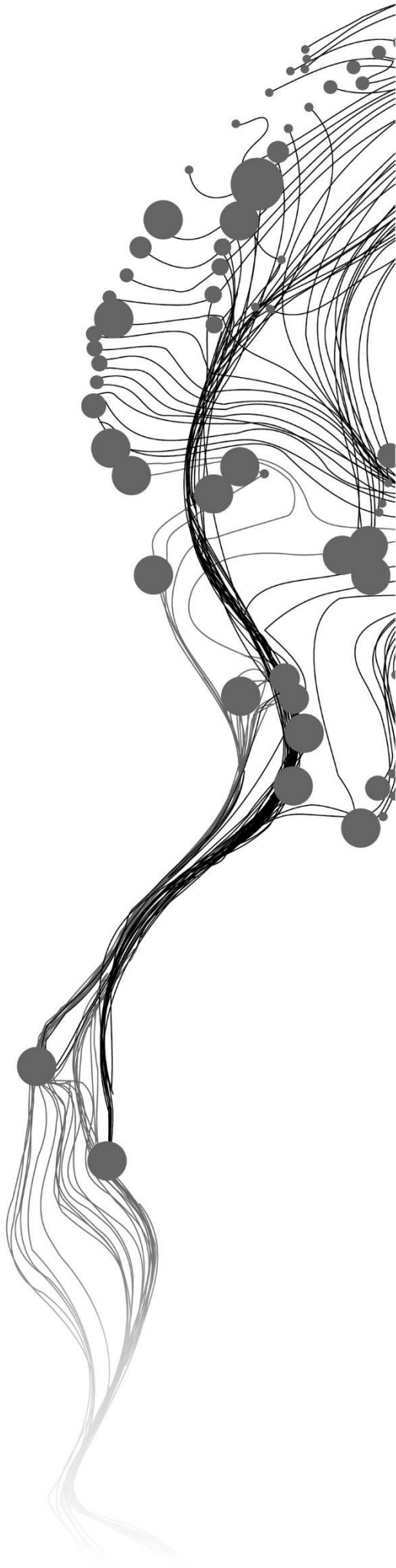
MARIE CHANTAL MUKAGASHUGI
February, 2018

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Dr. Ir. Paul Van Asperen
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MARIE CHANTAL MUKAGASHUGI
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SUPERVISORS:
Dr. Ir. Paul Van Asperen
Dr. Christine Richter

THESIS ASSESSMENT BOARD:
Prof. Dr. C.H.J. Lemmen (Chair)
Prof. Mr. Dr. L.C.A. Verstappen (External Examiner, University of Groningen)
Dr. Ir. Paul Van Asperen (First Supervisor)
Dr. Christine Richter (Second Supervisor)

ABSTRACT

Land is an important asset for all countries, but because of its immovable character the transfers of land differ from many other types of property. An efficient land registration system is therefore important. Many developed countries already registered their land and have a proper land information system. However, in sub-Sahara Africa, only thirty percent of land is registered in the formal land administration systems. The reason is that a Land Information System is very costly to establish and to maintain.

Rwanda is one of the countries that have followed the fit-for-purpose land administration approach. The whole country's land registration has been completed within five years through systematic land registration based on a general boundaries approach. A Land Administration Information System (LAIS) has also been established for maintaining the records. However, more effort is still needed for the system to be effective. Because the system is decentralised and distributed across different institutions and their respective mandates, it requires especially well designed procedures and processes to function smoothly.

This study addresses these longer term efforts to maintain the existing LAIS and improve its overall operation. The specific objective of the research is to explore challenges in the LAIS updating workflow vis-à-vis the role and authority of land notaries and to conceptualize a new optimised workflow. As the activity of LAIS updating comprises different transactions, only transfer by voluntary sale or donations are included in this study. The study was conducted in three districts: Gasabo, Huye and Rubavu. During fieldwork, interviews, focus groups and questionnaires were used to collect primary data in addition to documents as secondary data.

The results show that there are three different levels of application workflows in the process of LAIS updating for transfer through voluntary sale/donation. The first one is the workflow required for application at the sector level; the second one is for application at the district level; the third is for application at the office of registrar of land titles. Landowners prefer the first, to apply at sector level because the sector is not far from them comparing to the district. However, this workflow is especially complex. Here, challenges relate to organisational, technical, economic, and cultural factors. The findings of this study show that only the service provision to landholders have been decentralised while the updating of the LAIS still takes place at the district level. This poses special challenges to the sector land notaries regarding their role and authority, because they lack access to LAIS, and are at the same time overloaded with duties other than associated with updating service delivery. Some suggestions have been given by respondents for improving the workflow and the role of sector land notaries. The given suggestions and revealed challenges based on different factors influencing LAIS updating, helped in designing the requirements for an optimised workflow. The optimised workflow combines the existing workflows for application at the sector and district level. For successful implementation of the new workflow, certain conditions have to be met first. The benefits of the new workflow as well as areas for further research are highlighted.

Keywords: Land administration, land information system updating, cadastre, registrar, notary, Rwanda

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATION

GIS	: Geographic Information System
GoR	: Government of Rwanda
LA	: Land Administration
LAD	: Land Administration Department
LAIS	: Land Administration Information System
LIS	: Land Information System
MINALOC	: Ministry of Local Government
MINIJUST	: Ministry of Justice
MINILAF	: Ministry of Land and Forest
MINIRENA	: Ministry of Natural Resources
NIDA	: National Identification Agency
OSC	: One Stop Center
RDB	: Rwanda Development Board
RLMUA	: Rwanda Land Management and Use Authority
RLT	: Registrar of Land Titles
RNRA	: Rwanda Natural Resources Authority
RRA	: Rwanda Revenue Authority
SLN	: Sector Land Notary
SPIU	: Single Project Implementation Unit
UNECE	: United Nations Economic Commission for Europe
UPI	: Unique Parcel Identifier
WFMS	: Workflow Management System

1.   INTRODUCTION

1.1.   General background

Land is an important factor in social change and development towards poverty eradication, gender equality, indigenous recognition, adequate housing, sustainable agriculture, food security, adequate climate change responses and good governance (Lemmen et al., 2015). As highlighted by De Soto (2001) land is also a capital for economic development on which all investments depend. De Soto emphasises that to improve the conditions of the poor requires recognition of their rights to land through titling, which among other things, will allow them to access loans using their titles for mortgaging. The importance of land particularly for people to satisfy their needs and to govern people's relationships to land requires good land administration (Lemmen et al., 2015).

Land administration is about determining, recording and sharing data about the ownership, value, and use of land when executing land management policies (UNECE, 1996). It is also the basis for determining rights, restrictions and responsibilities related to people, policies and land/property. The rights are managed through a land registry, cadastre, or Land Information System (LIS) which is organised differently according to country context (Enemark, McLaren, and Molen, 2009). As such, some countries have deed registration and others title registration systems. The deed registration system's certainty of ownership is based on historical records while the title registration system the ownership is guaranteed by the state as it accepts the responsibility of the validity of transactions (Zevenbergen, 2017).

Although it is necessary to have a proper land administration in each country, it is very costly to establish and maintain it. The study shows that only 25% of the world population has access to land information systems (Enemark, Bell, Lemmen, and McLaren, 2014). In sub-Sahara Africa, only thirty percent of the land is registered in the formal land administration systems; the remaining 70% still lack access to formal systems to register and safeguard their land rights. Some sub-Saharan African countries have created Land Information Systems through donors support, but some have failed to maintain them after funding ended (Magis and Zevenbergen, 2014). Others still struggle with establishing an efficient LIS (Ethiopian) and not forgetting the maintenance (like Rwanda).

One of the solutions proposed for challenges in land administration in developing countries is to use the fit-for-purpose approach. This perspective calls for flexible and pragmatic methods rather than requirements imposed through rigid regulations and demands for high spatial accuracy that cannot be afforded by the poor (Enemark, Bell, Lemmen, and McLaren, 2014). It would contribute to building affordable and sustainable land administration systems. Once established, maintenance of land information system, however, is another challenge in land administration. The land registry must reflect reality in the field, and this requires recordation of changes through time also. It requires that all changes regarding land have to be reported by the landowners to the responsible institutions for record keeping (Biraro, Bennett, and Lemmen, 2015). This, in turn, requires good infrastructures and a favourable technical and organisational environment. Maintenance involves different stakeholders including landowners, whose awareness and understanding of the procedures in updating processes are crucial for reporting changes. For this infrastructure to operate smoothly and sustainably through time maintenance workflows need to be simple, understandable and helpful for landowners to report all changes that happened on their land without being afraid of a long process (Biraro, 2015).

The Netherlands, Germany and Sweden are often showcased as examples of countries where maintenance workflows are conducive to continued maintenance. These systems have a long history. For instance, Netherlands' LIS started in 19th century, during the French annexation, and it involved the registration of land records for property tax reasons as well as the combination of cadastre data into the same register under one organisation called Kadaster (Vos, 2013). The workflow is favourable to landowners as the land registry is public. Everyone can get all information from the deed recorded and know who has what right where. The civil law notary is in charge of preparing the deed, which is then checked by the Registrar (Vos, 2013).

Rwanda is a typical example of the complex workflows involved in LIS maintenance from one of the sub-Saharan African countries. By mid-2013, Rwanda completed the registration of land parcels including 10.3 million parcels across the entire national territory through systematic land registration (Sagashya, 2014). At the completion of land registration, the Land Administration Information System (LAIS) was established, combining land registry and cadastre (GIS) under the same organisation: Rwanda Land Management and Use Authority (RLMUA). Since then, maintenance work started via sporadic surveys. Updating work is ongoing and involves different transactions. Among them, the transfer of rights, subdivision of the land parcel, parcel merging, adds annotation on a parcel, and so on. All these transactions involve many different actors including landowners, land notaries, surveyors, LAIS processors, GIS professionals, land registration professionals and registrars. The process of the transaction begins with the landowner lodging the application either to the land notary at sector or district level or to the office of the registrar of land titles. The latter applies for commercial or industrial transfers. Therefore the workflow depends on where the landowner applies and the type of transaction. In cases where the application is made at the sector level, after checking the completeness of the file, the land notary forwards the application to the districts. After cross-checking the notary, district LAIS processor will accept and process the application and then forward it to the registrar office for approval or otherwise reject the application (RNRA, 2016). These processes, however, are relatively recent in Rwanda due to the newness of the system and there is still room for improvement in order to ensure longer-term sustenance of the newly established LAIS.

1.2. Research problem

The background section introduced the workflow for LAIS maintenance in Rwanda and different actors involved including notaries illustrating the complexities involved in maintenance work. The land notaries have a significant role in land transaction processes, especially the transfer of rights as they are the ones who prepare and approve the transfer deeds. In Rwanda notaries dealing with land, matters are called "land notaries" because they differ from ordinal notaries, who are lawyers. Land notaries in Rwanda not only play an important role in the maintenance of the LAIS, because of their functions but also because of their large number and distribution across both the administrative hierarchy. Following local administration structures, land notaries are distributed as follows:

- 416 sectors land notaries;
- 30 districts land notaries;
- Five zonal land notaries;
- 5 Registrars of land titles;
- Deputy Director-General, and
- Director-General and chief Registrar (GoR, 2014)

This spread across administrative levels is partially due to decentralisation efforts. Moreover, many transfer deeds are prepared by the land notaries at the sector level, because of decentralisation. What is problematic in this system is that there is no direct link between land notaries and the land registry at the sector level. It is not possible for the sector land notaries to check information to be aware of who owns the parcel for transfer the same way it is possible for example in the Dutch system. Only hard copy documents presented to the land notary by the person supposed to be the owner are used to authenticate

the transfer. The problem of frauds could emerge from using paper-based documents without directly getting access to updated digital information. Furthermore, another transaction can occur after the land notary is waiting to apply to the district because of the long process. This increases uncertainty on the part of buyers because at some time a transfer might not be affected in the LAIS even after being certified by a land notary. In such case, it is not clear, who would be liable to compensate the buyer. It is also not clear, who will assure the consequence of such transaction, nor is the insurance principle guaranteed in these cases in a Title System (Zevenbergen, 2017; Griffith-Charles, 2007).

Zevenbergen and Bennett (2015) argue that an LIS workflow has to be simple and understandable for landowners to allow them to report all changes that happen on their lands for updating LIS. However, as explained in the previous paragraph, the real case in Rwanda is currently different. In fact, there are challenges relating to the role and the authority of land notaries. The land transactions, especially the transfer of rights, could generate land disputes. This is attributed to the gap in the workflow linking to the role and authority of the land notaries at the sector level and the land registry, which therefore forms the focus of this study.

1.3. Objectives of the research

1.3.1. Main objective

This research seeks to explore challenges in the LAIS updating workflow vis-à-vis the role and authority of land notaries and to conceptualize a new optimised workflow.

1.3.2. Specific objectives

➢ To review the current workflow and actors involved in LAIS updating in Rwanda;
➢ To identify the role and authority of a land notaries in LAIS updating;
➢ To propose an optimised workflow based on authority and role of land notary in LAIS updating.

1.4. Research questions

From the specific objectives described above, the following research questions are formulated:

Table 1.1: Research questions

Specific objectives	Research questions
To review the current workflow and actors involved in LAIS updating in Rwanda	What are the actors and their roles in LAIS updating process? What are the processes of LAIS updating in Rwanda? What are the factors (positive or negative) influencing the LAIS updating?
To identify the role and authority of land notaries in LAIS updating	What are the roles and authority of land notaries in the process of LAIS updating? What are the challenges linked to the land notaries authority in LAIS updating? Are all changes reported and registered in LAIS on time? If not, why?
To propose an optimised workflow based on authority and role of land notaries in LAIS updating.	What are the suggestions on the roles and authority of land notaries from the point of view of the landowners, land notaries themselves and the registrars for accelerated LAIS updating? What is the new simplified workflow based on the suggestions from the actors' identified (landowners, land notaries, LAIS Processors, Registrar of Land Titles)?

1.5. Conceptual framework

The theoretical framework is the basis of the research problem as it describes the concepts selected from theories used in the research and establishes a relationship between them (Kothari, Kumar, and Uusitalo, 2014). This study seeks to explore the challenges in LAIS updating workflow vis-à-vis the role and authority of land notaries and to conceptualise a new optimised workflow. To conceptualize such optimised workflow for LAIS updating the conceptual framework has been drawn and centred on land registration which is supported by LAIS updating, and the effectiveness of which depends on the workflow in place. The latter is influenced by organisational, cultural, economic and technical factors, which differ in urban and rural contexts, and the actors involved in LAIS updating.
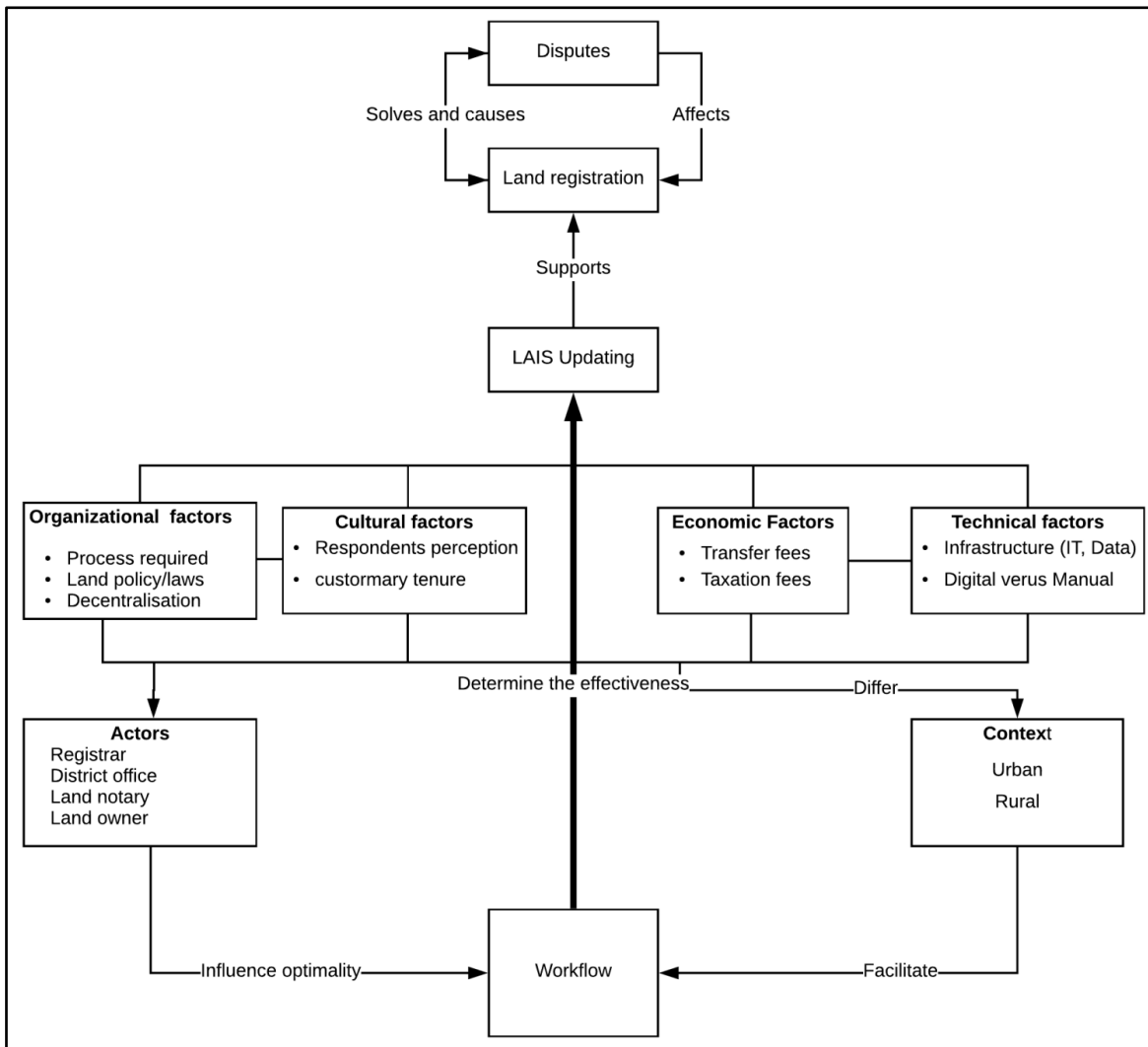
Figure 1.1: Conceptual framework (source: author construct)

1.6. Thesis structure

This research is structured as follows:

Chapter 1: Introduction
This chapter gives the background and justification of the study; it defines the research problem, research objectives, research questions, conceptual framework, and gives the structure of the whole thesis.

Chapter 2: Literature review
This chapter is divided into different sections which give the theoretical orientation of the study through the literature review. This is about land registration and land information system in general, the process of land information system updating especially about the factors (negative or positive) which influence LAIS updating, workflow and actors involved in LIS updating, role and authority of land notary. This chapter also includes a background study on updating the land administration information system in Rwanda.

Chapter 3: Research Methodology
This chapter presents the methods used for data collection and analysis. It defines the study area and sampling methods.

Chapter 4: Results
In this chapter, the findings from the data collected during fieldwork are presented. The data were collected through semi-structured interviews; focus groups and questionnaires for primary data while secondary sources used for secondary data.

Chapter 5: Discussion
This chapter discusses the results from chapter four and compares findings with literature. In the same chapter, the proposed optimised workflow for LAIS updating is designed.

Chapter 6: Conclusion and Recommendations
This chapter concludes the research based on results and discussion; it gives the recommendations to the government of Rwanda on how to address the challenges which hinder the process of LAIS updating.

2. LITERATURE REVIEW

2.1. Review Land Registration and Land Information System

The importance of land and the need for the proper land administration system was discussed in the background of this study. Land registration and land information systems are very important in a country in order to have an excellent land administration (Zevenbergen, 2002b). Land registration and land information systems play an essential role in a country when they work well and reach the objective set by the state (Zevenbergen, 2002a). There is some ambiguity in the terminology: land registration and land information systems or cadastre because there is no common definition for all countries, but there is a strong relationship between them (Zevenbergen, 2002b). Some countries use the expression cadastre as information related specifically to land parcels while others use it to describe parcel information together with the rights, restrictions and responsibilities associated with the parcels.

2.2. Land Registration

There is no official definition of land registration (Zevenbergen, 2002b). However, it is defined as *"the process of official recording of rights in the land through deeds or title system. It means that there is a certified record (the land register) of privileges on land or of deeds regarding changes in the legal situation of defined units of land. It answers the question "who" and "how"*. (Zevenbergen, 2002a; Simpson,1976), affirms that land records are of great importance to all countries, due to the distribution and use of available land as the key to human life. However, the land is different from another commodity by its characteristic of being fixed and everlasting, that is why land registration is necessary to determine the land ownership (owner of the parcel of land and the rights on it).

In other words, land registration consists of information about people (natural person or non-natural person) who recognize an interest in land, information about rights, restrictions, and responsibilities (nature of interests) and land (land parcels). The figure 2 below, shows the relations of that information and indicate who (People) owns what (Land) under which conditions (Rights, responsibilities, and restrictions) (Nichols, 1993).
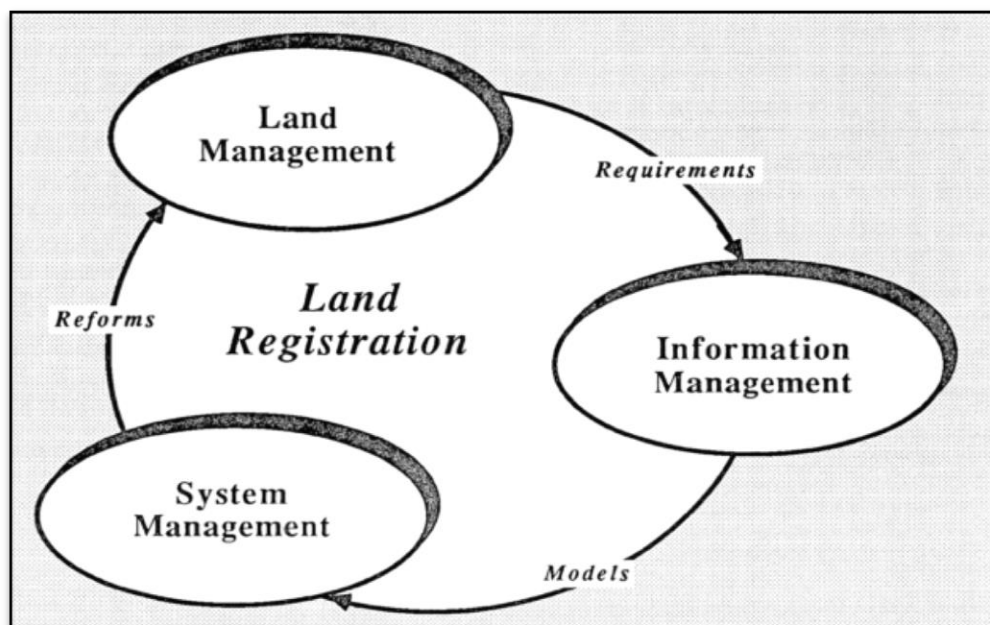
Figure 2.1: Adapted Land information relationship (source: Nichols, 1993)

2.2.1. Land Information System

The land registration system can be a manual (paper) based or a digital system (Land Information System "LIS" and also called Land Registry or Cadastre). Nowadays, the LIS is often computerised tools, which can store all information about land parcels, including their boundary, tenure, use, and value (Pindiga & Orisakwe, 2013). The information about land stored in LIS can be used in decision making across different domains like legal, administrative and economic (Pindiga and Orisakwe, 2013). In other words, the LIS information can be used for fiscal purposes(valuation and taxation), in conveyancing, to assist in the management of land and land use, and also to enable sustainable development and environmental protection (Zevenbergen, 2002b). In many countries, LIS is the essential or base layer of a spatial infrastructure although there are some countries like USA, Canada, and the UK where land administration and land markets are effectively functioning without official cadastre (Wallace and Williamson, 2006). The LIS serves as a process for acquiring, registering, maintaining, retrieving, analysing and disseminating the spatial and non-spatial data about land (UNECE, 1996). Nevertheless, the effectiveness of LIS depends on its updates, accurateness, completeness and its accessibilities (UNECE, 1996).

The development and maintenance of LIS is a long-term effort and requires commitment from involved stakeholders and actors accordingly. Development can be conceptualised in a linear fashion according to different phases: designing, developing, implementing and maintaining (updating). As indicated above, the LIS maintenance or updating is a challenging endeavour after the difficult step of setting up the system and populating it with relevant data has been taken as is the case in Rwanda. The following section will, therefore, focus on literature related to the processes of LIS updating.

2.3. Process of Land Information System updating

Once LIS has been set up within a society, the next step should be the maintenance (keeping it up to date). The process of updating LIS depends on different factors, and it depends on these factors that LIS can be well up-to-date or not. This raises the questions like where, how and by whom the LIS updating will be done (UNECE, 1996). Other questions in LIS updating are about the accessibility (distance to reach the institution by the applicants or landowners), the procedures or requirements for updating (workflow, cost, etc.) and the capacity of actors or users (officials of the institutional) for service delivery.

Different authors argue that the LIS service should be decentralised to facilitate the landowners to report all changes happening to their land without fear for long distance to reach the service (Biraro et al., 2015). The transaction procedures should be simple, quick, comprehensive, transparent, and at an affordable cost (Enemark, 2009). The capacity of the staff to meet the skills needed by the new technologies is another important issue (UNECE, 1996). Magis and Zevenbergen (2014) analysed the factors which can affect the sustainability of the system on both client and stateside. The process of LIS updating also depends on the type of transaction because each transaction differs with another regarding its step and the actors involved. According to Magis and Zevenbergen (2014) "*the transfer of ownership, notifying the new right holders (heirs) after the death of the original right holder, mortgaging the property, and subdivision is some of the key services for the citizens.*" The process of transfer of land differs from the registration system applied in the country; either it is deed or title registration system. Also, the factors which influence LIS updating differ from system to another system. Therefore, for more understanding the details about those two systems are provided below as described by Simpson, (1976):

Deed registration: in this system, the conveyancing is done with the assistance of a public record of deeds affecting land. It is also known as the registration of assurances. In the case of land dispute, deeds

serve as a proof in the tribunal because the state is passive as it does not give a guarantee to the new owner.

Title Registration: with this system, the register of land records is maintained and guaranteed by the government. This means that in case of the dispute the person does not need to be in trouble by anything behind the register. The state is responsible for the new transaction registered into the register. Again, the title registration provides for a simple procedure and forms to make the transfer quick, cheap and certain.

In order to perform well, a title registration system should include seven features as identified in the following (Simpson, 1976):

(1) Security: is about different rights people can have about a parcel of land including the right of leasing, servitude, mortgaging, and so on. Once it is recorded in the register, it is secured and remains beyond any challenge.

(2) Simplicity: This is concerning the procedures and forms. They must be simple and written in a language which people can understand well, to make the system operate efficiently.

(3) Fast and (4) accurate: This is very vital for the system. It has to be quick and accurate to be effective.

(5) Cheapness: "is relative and can be assessed only comparatively, regarding the possible alternatives. It is undeniable, however, that there can be no cheaper way of proving title than by an effective system of registration of title because no other system dispenses with the necessity for historical examination". Nevertheless, the initial stage of developing the system is the most challenging part, especially regarding cost**.**

(6) Suitability to circumstances: It is country contextual. It is dependent upon the existing circumstances of a country. The application should be fit-for-purpose.

(7) Updating of the records: If the records are not up-to-date or if the register is not complete this can cause different problems and misunderstandings of intermixed parcels between those which are registered and those which are not. This will continue to be with different laws applying to each. Thus the important benefits which should accrue from registration of title will not be obtained.

2.3.1. Factors that influence Land Information System (LIS) updating

The factors which influence the sustainability of LIS range from technical, organisational, cultural challenges to economics matter (Magis and Zevenbergen; 2014). From this list, some factors may have positive or negative influences during the updating period for both parties (client and the state). The factors that influence the LIS updating form client (landowner) side are all about creating awareness, perceived value, affordability and ease of use. The landowners who receive a new system need to be aware of its positive side. The way to facilitate and encourage them reporting the changes to their landholdings for LIS updating should be done by making service delivery easily accessible. For example, the land policy and laws should be clear, simplified and understandable workflow, effective cost (travel and money) to reach the services, decentralised services. From the stateside, it is essential to think about stable and quick network, skilled and sufficient staff, and enough revenue to maintain the system. These are considered as positive factors.

The negative factors are those that delay the service delivery and discourage the landowners to report the change happening on the ground leading to an outdated land information system. For example, in some countries the workflows are very complex, the distance to reach the office for land registration are too long, some legislators take a long time, and some transactions are not regulated, the internet connection is too slow and not stable. Elsewhere, the staffs are not sufficient in numbers, and their skills do not meet the requirements to apply new technologies, and the funding for maintenance is insufficient. Another shortcoming detected by Magis and Zevenbergen (2014) *"is the absence of a monitoring system"*. Overall there are many factors which influence LIS updating, one is that the system needs to learn smoothly and the workflows are the important elements of the infrastructure. Therefore in the study, there is a focus on the workflows.

2.3.2. Workflow Management System (WFMS)

The concept of workflows has been developed during the industrialisation period to manage processes in business and offices with the aim of increasing the efficiency of the work (Georgakopoulos, Hornick, & Sheth, 1995). Since then it has been defined by different authors, Georgakopoulos et al., 1995 affirmed that the workflow separates the work into well-defined tasks, roles, rules and procedures. For DiCaterino, Larsen, Tang, & Wang (1997) *"workflow can be defined purely as the movement of documents and tasks through a business process. Workflow can be a sequential progression of work activities or a complex set of processes each taking place concurrently, eventually impacting each other according to a set of rules, routes, and roles."*

It is important to note that in the beginning, before the introduction of information technology, all tasks in the workplace were performed by the human who manipulated the physical object (Georgakopoulos et al.; 1995). However, all these tasks can now be automated, with or without user interaction. Even up until now, it is difficult to differentiate the workflow and the workflow management system since there is no universal characteristics or category of them (Georgeakopoulos et al., 1995). Thus, the Workflow Management Systems is seen as a tool (software) which serves the organisations to allocate and control the tasks (various activities) associated with a business process. In addition, the workflow management systems, permit a business the occasion to measure and examine the execution of the process so that continuous improvements can be made either in short-term or in long-term (DiCaterino et al., 1997). The workflow management system can also work hand in hand with other systems used by the organisation and allow the developers to differentiate between the flows of other components (Cardoso, Bostrom, & Sheth, 2004).

Further, Cardoso et al. (2004) wrote about three different types of applications which are supported by business process technology:

Workflow involving people: here the workflow has to control and coordinate the employees' tasks. In such case, the WFMS settings became complex as it has to share the responsibility, ensure the reliability of documents and workflow data between the users.

Workflow involving software and application: In this case, the WFMS has to control, coordinate, and execute the computation-intensive operation and specialised software tasks, with or without user interaction.

Transaction workflows: "This involves the coordinated execution of multiple tasks that may involve the people; it requires access to heterogeneous, autonomous and distributed systems and supports selective use of transactional properties, for individual tasks or entire workflows".

The workflow is needed in an enterprise for precise planning and control of all parts of it, especially when it comes to sharing of information in an environment where the employees are working together. Plesums (2002) emphasised on reducing the cost of manual coordination and the general process effort which is used in the business without the workflow management. Also, the workflow management allows the growth of productivity, quality improvement and visibility. Some examples are illustrated below wherein different authors have discussed the importance of the workflow and workflow management system in an organisation (Wanderlust, 2016; WebDocs, n.d.)

Better Understanding of Business Processes: the workflow helps the enterprise's owner to get more understanding of the process in the business. Nevertheless, without workflow, there will be no clarity in the results or terms of maximisation of the profits to the business owner even though the existing business is well-established.

Identifying redundancies: there are many tasks which are not necessary for a different organisation. Having the workflow system helps in identifying the tasks that are important and necessary whereby duplication and redundant tasks can be removed. This will save time allowing the employees to focus on the main tasks.

Increase accountability and reduce micromanagement: the workflow is an excellent way to assign the tasks and controls the employees without micromanagement, most of the employees do not favour such management, and it may lead to employees leaving the job. Also, it increases the job satisfaction and establishes good relationships between employees and their bosses.

Improved communication: in the business, the managers need to communicate with their employees, and the employees between themselves to perform well their task. The bad communication is a big challenge for the business. However, the well-settled workflow helps to get good communication. Thus life becomes easy for all employees and their boss and makes the work smoother.

Provide better customer services: clients are the key for the business to run. For that matter, it is vital to maintain whom they have as an organisation and to create the opportunity to gain new. Unfortunately, some organisations with outdated manual system easily lose their customers. The workflow can help to give better services to their customers to maintain them.

Improve the quality of the products or services: to choose the employees is challenging in some business organisation because it is challenging to employ skilled employees. In many cases, they employ the ones who are available rather than selecting the skilled ones. Thus, in this respect also, the workflow is essential to help the businessman to evaluate the employees and get to know someone who performs the task efficiently. By systematising workflows and processes, it can also reduce the possibility of human error. This will expand the quality of the products or services in the business.

Though workflow is essential in business, its effective depends on its design. It is necessary to define all requirements for the process which can make a simple workflow. If the processes are not well defined the workflow management system will not work, the workflow will be complex. Good workflow design requires business-process analysis, business-process redesign, usability analysis, and software design. It is important to note that the workflow management system has not yet developed into a well-proven and constant technology (Cardoso et al., 2004). Different authors discuss issues and limitations about workflow technology (Alonso, Agrawal, Abbadi, & Mohan, 1997; Brahe & Schmidt, 2007). Among others,

there are performance and system stability, costs of changing workflows, and cross-departmental dependences.

Even though the workflow started by business organisations to make their business efficient, nowadays different institutions and organisation are using the workflows. It can also be deployed in healthcare, telecommunications, military, land administration and so on (Cardoso et al., 2004). In the land administration organisations, the use of workflows has the same objective to allocate the task and role to different employees and to make the control of their performance easier. However, the workflows can be simple or complex, depending on the legislation and system of land registration of each society. Nevertheless, the improvement of the workflows is very important any time look necessary, and some countries started doing so. For instance, the Dutch Kadaster was composed by the head office, and 15 regional offices. Moreover, each performed the similar activities of keeping the register, surveying the boundaries, maintaining the maps and disseminating the information in a different manner (Osch and Lemmen, 2004). The authors used the case study of the transfer of ownership (whole parcel and after subdivision) to show how long and complicated it was to get the deed registration due to the archaic system before 2005. For that matter, the IT renewal has proposed towards integrated workflow management which made the process efficiency and flexible (Osch and Lemmen, 2004). This started in 2005, and since, the workflow management system is used to measure the task in Dutch Kadaster system. Figure 2.2 below shows the previous workflow and the renewed one for the Netherlands regarding the transfer of ownership.
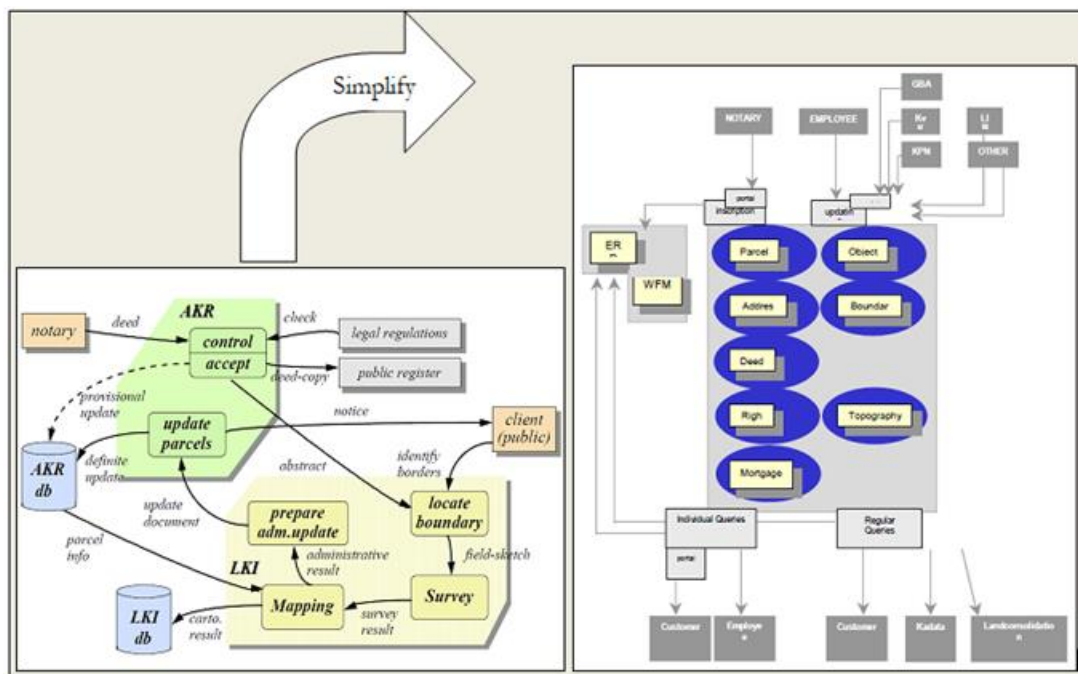
Figure 2.2: workflows of the Netherlands (source: adapted from Osch and Lemmen 2004).

2.3.3. Actors involved in LIS updating

The activity of LIS updating involves various actors who perform that action in the institution in charge of land registration in a given society. They play different roles according to their respective responsibilities and transactions involved in LIS updating process. Osch and Lemmen, (2004) sited some including public notary, landowners (buyer and seller), land surveyors, registrar and the Bank. Overall, there are many stakeholders in land administration and land information system updating and differ from the transaction and the responsibility as discussed.

2.3.4. Role and authority of notary in workflow

The role and authority of notaries differ from country to country depending on the country context (legislation, culture) and its registration system (deed or title). Some countries do not have notaries in the transfer of ownership, for example, Sweden (Freiberg, 2006). The notary is defined as "*both a conveyancing lawyer and a public official responsible for seeing that the conveyance is properly undertaken*" (Pindiga & Orisakwe, 2013). In many countries, the notary is of great importance in the land transaction even if the notary is not considered as a part of the system of title registration under a Torrens System (Pindiga & Orisakwe, 2013). The role and authority of notaries are regulated by the law (Pindiga & Orisakwe, 2013). The notaries have to check all relevant documents before they are registered and must approve land transfer application forms to ensure that the persons concerned are the real landowners (UNECE, 1996). However, in title registration system, the transfer of ownership can take place without a lawyer (UNECE, 1996).

In the Dutch deed system, the civil law notary is the one who investigates the identities and rights of parties. The notary has to check the validity of the last agreement after preparing the notarial deed of transfer which is used by the Registrar for updating the system without granting the titles as it is in Titles registration system (Vos, 2013; Osch & Lemmen, 2004). The notary can also play a role as an intermediate for the money transfer and fulfil a clearinghouse. When the deed has been accepted by the Registrar, meaning there is no problem in the process for registration related to that transfer, notary transfers the money to the seller deposited by the buyer and the mortgage bank (Vos, 2013; Osch & Lemmen, 2004).

2.4. Background study on updating Land Administration Information System in Rwanda

2.4.1. Land registration in Rwanda

Until 2004, Rwanda never had a proper land policy or land law. The land tenure was characterized by insecurity and instability resulting from some scattered legislations and customary practices which were opposed to each other (MINIRENA, 2004). The necessity of land policy for Rwandan government was crucial. In 2004, the first National land policy was adopted followed by the Organic land law in 2005 (replaced by the Law n° 43/2013 of 16/06/2013 governing land in Rwanda), which was the base for the other legislation related to land and orders. To implement the land policy, Rwanda initiated a systematic land registration countrywide through the Land Tenure Regularisation (LTR) program, which used general boundaries for demarcating the parcels. This demarcation used the orthophoto maps, and it has been done in a participatory GIS (RNRA, 2016). The first trial started in 2007, and from 2009 to 2013 the first land registration was completed with 10.3 million of land parcels registered (Sagashya, 2014). Once the land parcel is registered, a certificate of freehold or a certificate of the land lease has to be issued to the landowner.

In Rwanda the expected benefits of a proper land administration are listed as follows (RNRA, 2016):

- Guaranty of ownership and security of tenure
- Reduce land disputes
- Provide security for credit (mortgages)
- Support for land and property taxation
- Contribute to develop and monitor land markets
- Protect state land
- Facilitate land reform
- Improve urban planning and infrastructure development

- Support sustainable management of land resources and environmental management

After completion of systematic land registration, Rwanda developed a Land Administration Information System (LAIS), which serves for maintenance of land records. In the following section, the details about LAIS are discussed.

2.4.2. Land Administration Information system (LAIS) updating

Land Administration Information System (LAIS) is a web-based land registration tool that is developed based on the procedures and processes that are provided for by the Ministerial Order Determining Modalities of Land Registration in Rwanda. LAIS is also a Torrens system adapted to the Rwandan context, the system composed by a Register of Land Titles and a Cadastral Register, as it integrates the spatial and non-spatial information. The LAIS like other Torrens system is based on three principles:

- **The mirror principle**: this means that the system is supposed to reflect the reality of the legal situation.
- **The curtain principle:** after registering the information there is no more (historical) investigation outside the register is required except overriding interests.
- **The insurance or guarantee principle:** what is written in the system is true, and the government is responsible to the third parties with the good faith. The government will pay the claimant who is contracted through the insurance fund of the state.

The LAIS mission is to ensure proper land management and land administration, by maintaining land certificates issued to landowners during land registration (RNRA, 2016). The establishment of LAIS was followed by the subsequent enactment and modifications of Laws and Orders, Institutions, and recruitment of new employees for helping in updating LAIS. Currently, LAIS contains 11.4 million parcels with a difference of 1.1 million from initial statistics of 10.3 million in 2013 (Nishimwe, 2017). From this figure, it can be noted that each year about 250,000 newly created parcels are registered following different transactions. The question remains, however, whether all changes are reported and registered. It is also not clear whether the landowners are aware of the procedures and necessity of registration. The other concern is whether the workflows for each transaction are well-structured and simple to be understood by the landowners, the issue of affordability of land services fee, and other challenges.

To answer some of these questions, Rwanda launched an awareness campaign in 2014. This campaign is organised annually since 2014 in the whole country which aims to explain the procedures and requirements related to land transactions (RNRA, 2016). Muyombano (2014) discussed the perception and awareness of landholders about the land transaction for LAIS updating. The decentralisation has been done as updating works operated in all 5 zones and 30 districts of the country. However, at the sector level, only the *"paper-based services are decentralised"* (Nishimwe, 2017). It takes another time for the application to be lodged into the digital system. Biraro (2014) showed that the long-distance could stop the rights holders to report the change happened on their land. Ali, Deininger, and Duponchel (2017) discussed the high cost of transfer and the subdivision of the parcel of agricultural land which is not allowed if the parcel is below one hectare hence challenges for updating LAIS.

Some of the issues that are still challenging relate to the complexity of the workflow which entails different actors from various institutions. Payment processes, and the challenges linked to the land notaries. The client has the choice either to apply at the sector level or the district level and even the office of land Registrar level for some transactions (RNRA, 2016) which give room for possible fraudulent transactions. In fact, all transactions should start from one entry point. Majčica (2005), discussed similar issues in Croatia and proposed a one-stop-shop as a solution.

2.4.3. Workflow and actors involved in LAIS updating

The LAIS updating implies different transactions and different actors respectively to their duties. It also implies various institutions which mean how the process (workflow) will look like; depending on where the activity started and which transaction was applied. Let us look at the case of transfer of rights, starting at the sector level, as it is the most common case. Rights in Rwanda can be transferred by inheritance (succession), sale, donation, expropriation, and exchange (RNRA, 2016). It may concern the whole parcel or a part which require a subdivision. In case it is a transfer of the whole parcel, the seller and buyer discuss the price of the land parcel, they have to pay the transfer fees and present themselves with the required documents to the land notary for preparing and signing the agreement of sale. The land notary has to check if the documents are valid and then prepare the agreement which has to be signed by the parties and approved by the land notary. The seller will request a transfer and sent the application. In case the application is lodged at the sector level, the sector land notary will send it to the district. The official in charge at the district will also check the application. When the application is complete, the transaction will be booked, accepted and processed in LAIS and sent to the registrar. Once the application is processed, the registrar of the land title will check it through LAIS and approve it, or reject it if there is a reason. After approval, the certificate will be printed, sealed and sent to the district. The district will then send it to the sector, where the land notary will issue it to the buyer (RNRA, 2016).

From the process explained above the following actors can be identified: landowners (seller and buyer), land notary, different district officials in the land matter, registrar of land titles and officials from his/her office (RNRA, 2016). The land administration procedure manual describes actors and process (workflows) involved in land administration information system updating for each kind of transaction (RNRA, 2016). Below is Figure 2.3 shows the overview of the transaction when the workflow is at the sector level as is the example discussed here. However, two Figures show the overview of transactions from district and office of the registrar of land titles are presented in Appendix 10 for more information.
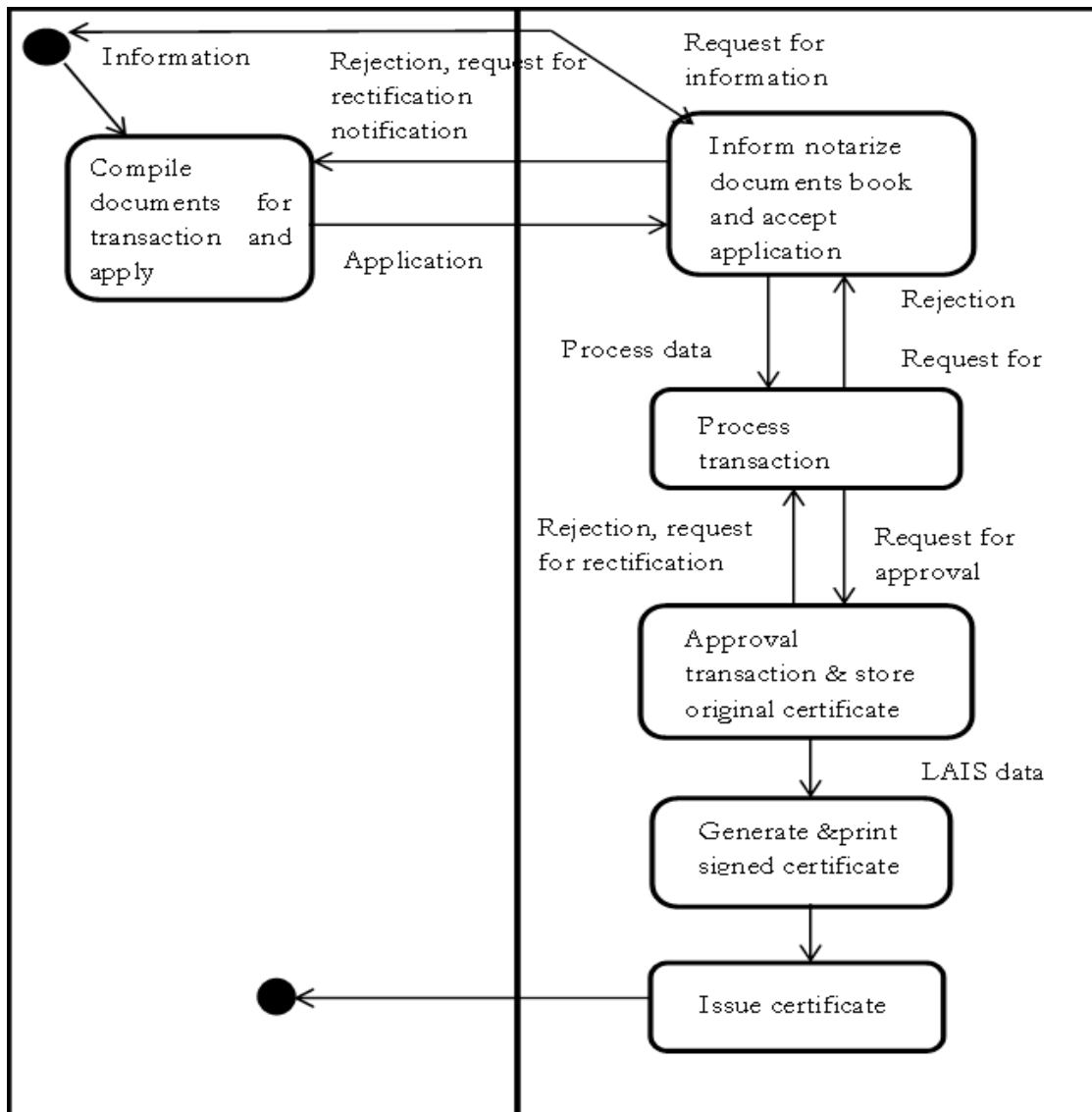
Figure 2.3: Application process for the file introduced at sector (source: adapted from RNRA, 2016)

2.4.4. Role and authority of Land Notary in Rwanda

In Rwanda, there are 416 land notaries at the sector level, 30 land notaries at the districts. At the national level, the authority of land notary is given to 5 zonal officers, 5 Registrar of Land Titles, and one Chief Registrar as stipulated in article 3 of the law n⁰ 13bis/2014 of 21/05/2014 (GoR, 2014). The clients have three options: apply at the sector level, at the district level or the Office of the Registrar of Land Titles for some transaction (RNRA, 2016). Nevertheless, many applications are started at the sector level for the simple reason as everyone can reach the sector easily (short distance) compare with the district or the office of the registrar.

The land notary at the sector level who is also in charge of land management infrastructure and community settlement has the main duty of initiating LAIS updating. The sector land notary is also in charge of providing information to the clients, receives their applications, checks their completeness and forwards them to the district. Other roles and authority of the land notary are listed in article 10 of the law

n° 13bis/2014 of 21/05/2014 governing the office of the notary including "*certify and authenticate the deeds related to land transfer*" (GoR, 2014b). Unfortunately, the decentralisation of LAIS is only at the district level; at the sector level, only the services are decentralised. Therefore, the land notary cannot check the information in LAIS before signing the deeds (Nishimwe, 2017). This gap between the land notary and land registry (LAIS) gives a choice to the client to apply at each level, which may lead to land disputes. Again chapter four of this study gives more details about the role and the authority of land notary in the process of LAIS updating.

2.4.5. Land dispute in LAIS updating

In the Land Administration Information System (LAIS) there is room to register land disputes. A registered dispute is a restriction of rights to the landowner to get the title till the dispute is resolved by the court or mediation (RNRA, 2016). Around 1% (11,840) of the disputes are from the time of systematic land registration when it was recorded, and 80% of them were intra-family (MUVARA, 2016). From then some disputes have been resolved and cancelled in LAIS, others are still being resolved (RNRA, 2016).

Besides that, there is another transaction called restrictions of rights which is an annotation on the land like "Mortgage, seizure, caveat and sub-lease (RNRA, 2016). In reality, these transactions are not lead to the new registration documents, but they aim landowner's rights limitation on the parcel. The consequence in such case is that the landowners cannot dispose of the rights on his land parcel unless the annotation is removed into LAIS. Article 283 of the law, n° 21/2012 of 14/06/2012 relating to the civil, commercial, labour and administrative in Rwanda, regulate in which case this kind of dispute can be registered under LAIS (GoR, 2012). The registration of this kind of dispute takes place at the office of the registrar of land titles, and it is not mentioned in the land title, which means that the landowner can sell the land and the transfer at sector level can happen, but in LAIS it will be impossible to register the change. As long as disputes and restrictions of rights are both annotations registered in the LAIS non-spatial information part. This research will only use term "Disputes" to represent both of them. Figure 4 below summarises what discussed above.
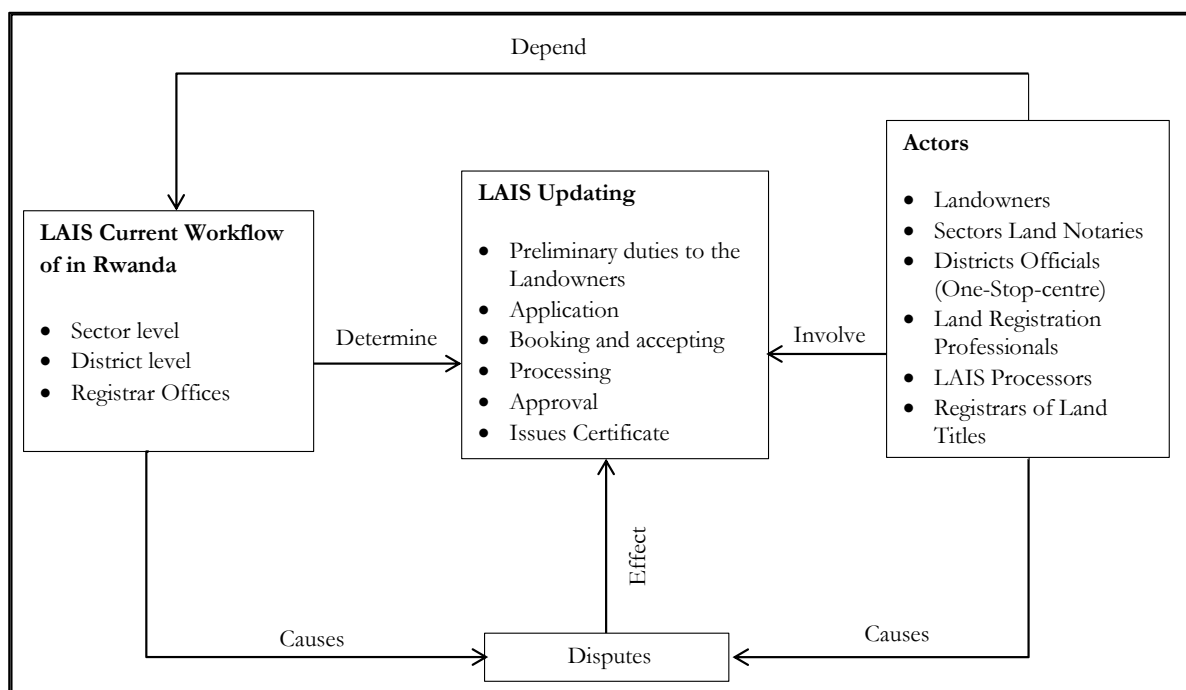
Figure 2.4: Summary of LAIS updating and actors (source: Author construct based on discussion above)

3. RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the research approach, study area, and methods used to achieve the main and specific objectives of this research. The research methods used in this research include Semi-structured interview, focus group discussion, and questionnaire within a Case study of Rwanda. It further discusses how the respondents for interviews and focus groups have been selected, and the limitations of data collection.

This research is divided into three different steps. The pre-fieldwork step included general background, defined the research problem, research objectives were developed, and interview questions for field work were prepared. The second step was fieldwork whereby primary and secondary data was collected through different methods for data collection. The last step was the post-fieldwork which involved data analysis, discussion and conclusion of the study. Finally, the study highlighted the recommendations in this stage. Figure7 below shows the structure of this study:
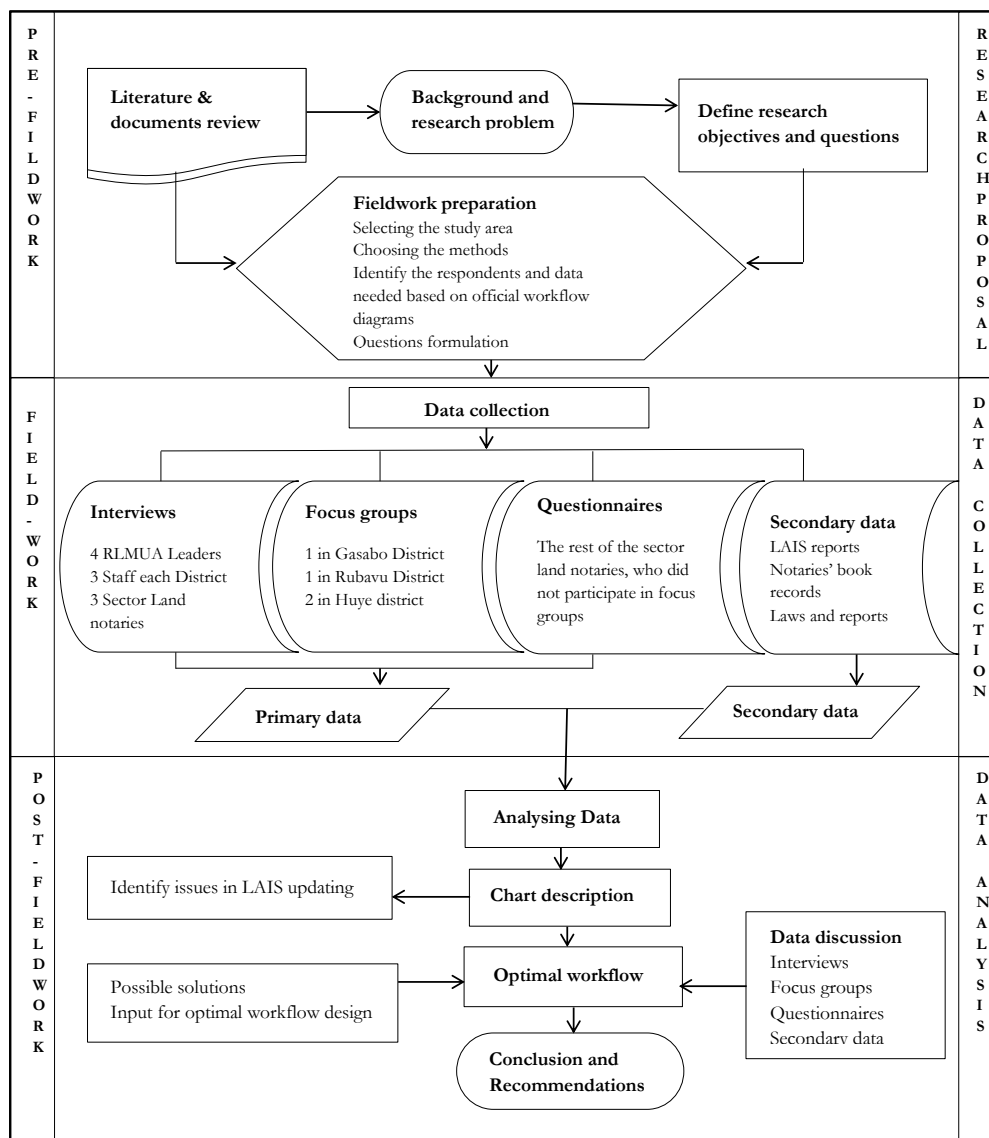
Figure 3.1: Research design

3.2.   Research approach

A case study approach is used for in-depth investigation of a problem in one or more real-life settings within the selected sites (Bhattacherjee, 2012). Yin (2003) argue that case studies are the chosen strategy when the focus is on a recent issue within a practical context. Furthermore, the case study's unique strength is its capacity to deal with a variety of proof, comprising current documents, archival records, semi-structured interviews, direct observation, and physical artefacts (Yin, 2003). Most importantly, a case study "is well-suited for studying complex organisational processes that involve multiple participants and interacting sequences of events, such as organisational change and large-scale technology implementation projects" (Bhattacherjee, 2012) like LAIS. A case study may also be convenient when it is unfeasible for researching over a whole country.

To achieve the research objectives and to answer the research questions both qualitative and quantitative approaches were employed in a case study within the selected three sites in Rwanda. As explained in Kothari et al. (2014), quantitative approach is used to explain the prevalence, reliability of an issue from a larger number of respondents. To the other side, the qualitative approach is used to describe why a particular issue prevails, based on perceptions and feelings of fewer respondents. It focuses on words rather than quantification in the collection and analysis of data (Bryman, 2016). Consequently, this research used a quantitative approach to assess shared issues among land notaries in their daily duties regarding their role and authority and procedures. A qualitative approach was used for the in-depth description of current challenges in LAIS updating vis-à-vis the role and authority of land notaries.

3.3.   Study area and sampling

In light of the above discussion, a case study of Rwanda was used for this research. Since it was not possible to research the whole country comprising 5 Provinces (Registrational zones), 30 Districts and 416 Sectors. Therefore three sites were selected, and results were generalised for the entire country. The three selected sites are Gasabo District located in Kigali City with a surface area of 430.30 Km², Huye District located in Southern Province with a surface area of 581.5 Km², and Rubavu District located in Western Province with a surface area of 388.3 Km². The reason why to chose these three districts is that this study needed to get data from both urban and rural areas context.   Gasabo is one of the three districts of Kigali City, and it contains 15 sectors with many transactions. In this study, it represents the urban context. While Rubavu and Huye districts respectively from Westen province and Southern province, are representing the rural context.
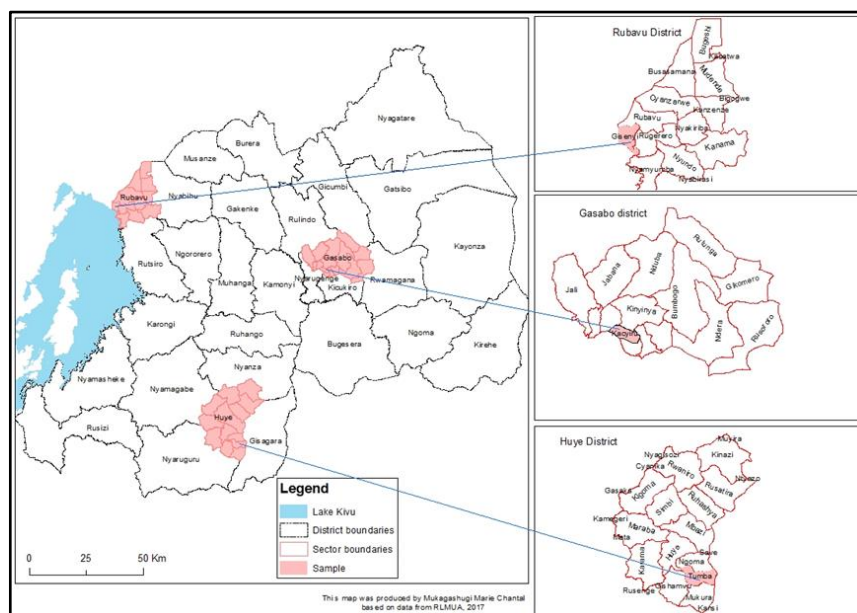
Figure 3.2: Selected Study area

3.4.   Methods used for data collection

3.4.1.   Semi-structured Interviews

The interview is an interaction between two or more individuals face to face, about a specific purpose in mind (Kothari et al., 2014; Bryman, 2016). This study used a semi-structured interview for data collection. It served to get information from RLMUA, sampled districts, three sectors one in each sampled districts and landowners in those three sectors.

The researcher had semi-structured interviews with four respondents from RLMUA, three of them were the Registrars of Land Titles. Their selection based on their respective zones (Kigali City, Western Province and Southern Province), where the sampled district (Gasabo, Rubavu and Huye) located. Another one was the Deputy Director General of RLMUA. In Gasabo district one official was interviewed, in Rubavu district three officials were interviewed and three officials from Huye district. The selection of the respondents in their respective districts based on their responsibilities in the process of LAIS updating vis-à-vis the transaction of transfer of rights. In each district, one sector was sampled to have an interview with the sector land notary. During the visit to the sector, the landowners(seller/buyers or donors/ receiver) who were visiting the sector for transfer of rights interviewed.

Kacyiru sector of Gasabo District was selected, as it is the sector in which the district office located. It is the capital sector of the district, and this gives the land notary of this sector territory competence in whole Gasabo District. It is because there is no district land notary at this time. The reason to select Kacyiru sector is that it shows the real picture of the urban context in the process of LAIS updating. At the same time, the three landowners who agreed interviewed. The researcher introduced herself, before starting the interview. Some landowners were not willing to give information, because of their limited time as it is in the capital city, but others were not even explaining why.

In Rubavu district, Gisenyi sector was selected by the simple reason that the time (week) researcher was there meet the program of the land notary to do the transfer. In this sector, the land notary and two landowners interviewed. In Huye District the selected sector is Tumba sector and the same as in Rubavu, after an interview with the land notary, three landowners have interviewed. Both sectors are representing the context of a rural area in the process of LAIS updating. In summary, all needed data through semi-structured interview collected. The used interview guide questions for the various respondents are in appendix (3-5 and 7)

3.4.2.   Focus groups

Focus group is a discussion between a group of 6 to 10 people having some experiences in common. It is guided by a researcher to explore the perceptions and understandings on a defined area of interest in a permissive, non-threatening situation (Morgan, 1997; Kothari et al., 2014; Bryman, 2016). Therefore the focus groups were used in this research during data collection to get more and clear information about LAIS updating, vis-à-vis the role and authority of land notary especially about the transfer of ownership. In total four focus groups conducted, the participants were the sector land notaries of Gasabo; Huye and Rubavu districts. In Gasabo District, one focus group conducted with ten (10) participants. In Rubavu district also one focus group with ten (10) participants conducted. While in Huye district two focus group with six (6) and seven (7) participants conducted. It was a good experience for the researcher, and valuable information has given in all focus groups. The questions used for this method is in appendix (6)

3.4.3.   Questionnaires

The questionnaire is a list of questions, written by the researcher intended to be sent to respondents who will answer them (Kothari et al., 2014). In this case, the question should be clear and understandable as the researcher might not be present like an interview to explain them to the respondents (Kothari et al., 2014).

Thus the questionnaire method was used to get information from the rest of the sector land notaries who did not participate in focus groups and interviews. Further, the researcher wanted to get information about the number of shared challenges in LAIS updating within land notaries. The questionnaires were sent by e-mail and in total 330 questionnaires were sent. Unfortunately, a small number of 50 sector land notaries responded. One of the reasons why the number of respondents was limited, was that the questionnaire sent by email and some sectors do not have internet, especially those in the rural areas. For that reason, it is understandable that it is not many land notaries who will take their money and pay it in the cyber café for sending the questionnaire to the researcher whom they do not even know.The questionnaire used is in the appendix (9).

3.4.4. Secondary sources

In this research the secondary data used are laws, and the procedure manual used to answer the first and second questions of objective one about processes of updating LAIS in Rwanda and actors and their role in the process of LAIS updating. Reports from land notary books, which are Kacyiru sector of Gasabo district, Gisenyi sector of Rubavu district and Tumba sector of Huye were checked. These reports compared with the number of transactions by sales and donation registered in LAIS database. The difference between these reports served to have the picture about the transactions registered in LAIS from the deeds approved by land notaries during one year (June 2016 to July 2017). Also, books papers, journals and other relevant information available on the internet were used to get more understanding of the process (workflow) of LAIS updating in Rwanda.

3.5. Data Analysis

Once data has been collected and extracted, the next step was to process the transcription of the interviews and focus groups recording and analyse them. Bryman (2016) argues that this is an important part which comprises different elements depending on whether the data is in qualitative or quantitative form. For this study, the questionnaire method has used to get the quantitative data after which SPSS used for coding them, and statistical analysis followed. For qualitative data analysis, the researcher used ATLAS. Ti 8.0, for coding all transcripted data to group the similar answer from main concepts. This helped to conduct a simple thematic analysis.

3.6. Research Matrix

Table 3.1 below is the research matrix which provides a summary of the research. It contains the specific objectives, research questions, data needed, data collection methods, data analysis, and anticipated results.

Table 3.1: Research matrix

Specific objectives	Research questions	Data needed	Data collection methods	Sources/res pondents	Data Analysis	Anticipated results
To review the current workflow and actors involved in LAIS updating in Rwanda	1) What are the actors and their roles in LAIS updating process?	1) Actors and their role	Literature review	LA procedure manual, related land laws, policy, books, and articles.	Thematic analysis	Actors and their roles
	2) What are the processes of LAIS updating in Rwanda?	2)Current workflow	Literature review	LA procedure manual, related land laws, policy, books, and articles.	UML activity diagram	Chart Description
	3) What are the factors (positive or negative) influencing the LAIS updating?	3) Procedures, accessibility, infrastructure	Literature review Interview Focus groups	LA procedure manual, related land laws, policy, books, and articles, Respondents /participants.	Thematic analysis	Factors influencing the LAIS updating
To identify the role and authority of land notaries in LAIS updating	1) What are the roles and authority of land notaries in the process of LAIS updating?	1) The role and authority of land notaries	Literature Review Interview Focus groups	LA procedure manual, related land laws, policy, books, and articles, Respondents	Thematic analysis	Authority assigned to land notaries as per legal stipulations and their role in the application Processing workflows
	2) What are the challenges linked to the land notaries authority in LAIS updating?	2) Survey data	Interview Focus groups Questionn aires Secondary data	Respondents, LAIS database, notary book.	SPSS coding, statistical analysis	Types of challenges in daily work of land notaries Causes of these challenges Effect of these challenges
	3) Are all changes reported and registered in LAIS on time? If	3) LAIS report vs notaries report	Interview Focus groups Questionn	Respondents, LAIS database, notary book.	Thematic analysis	Difference regarding quantity of transfers

	not, why?		aires Secondary data			reported and these processed into LAIS
To propose an optimised workflow based on authority and role of a land notaries in LAIS updating.	1) What are suggestions on roles and authority of land notaries from the point of views of the landowners, notaries themselves, the registrars for accelerated LAIS updating?	1) views of actors	Interview Focus groups Questionn aires	Respondents /participants.	Coding in SPSS statistical analysis	Possible solutions, Inputs for optimal workflow conceptual design
	2) What is the new simplified workflow based on suggestions of the respondents?	2) Requirements definition	Interview Focus group questionn aires	Respondents /participants.	UML activity diagram	Proposed workflow design

3.7. Limitations of data collection

During fieldwork period the researcher had some challenges and limitations. The primary challenge was about appointments, which were not respected by all respondents. Also to get the contact of land notaries to send them the questionnaires was hard. The researcher had to use many methods but allocated time was limited. Again, to start fieldwork took some time as the letters sent to the district before fieldwork were not taken into account. However, the researcher managed to have all data needed it does not affect the research as it sometimes happened when the limitations and challenges became difficult to manage.

4. RESULTS

4.1. Introduction

This chapter presents the findings from fieldwork, which took place in Rwanda from 30 September to 29 October 2017. During fieldwork, primary and secondary data were collected through interviews, focus groups, questionnaires and non published documents (reports, manuals). First, the institutions and actors involved in LAIS updating are presented, and an explanation of the current workflow for LAIS updating is provided, based on findings from different respondents. To help visualize the workflows activity diagrams are presented to show the process of transfer of rights, based on the level of application. Second, the factors which influence LAIS updating are discussed by comparing urban and rural areas context. Third, the role and authority of the land notaries are also discussed. Last but not the least, the suggestions on the improvement of LAIS updating process given by different respondents are presented. In appendix 2 there is a small discussion about Dutch Kadaster.

4.2. Current workflow and actors involved in updating LAIS in Rwanda

This section is subdivided into three subsections. The first subsection describes the actors and institutions involved in the process of LAIS updating. The second subsection describes the process and activity diagrams which represent the workflows from a different level of application, while the third one describes the factors which influence LAIS updating.

4.2.1. Institutions and actors involved in LAIS updating in Rwanda

There are different institutions and actors involved directly or indirectly in the process of LAIS updating. These are Rwanda Land Management and Use Authority (RLMUA); Rwanda Development Board (RDB); Rwanda Revenue Authority (RRA), Rwanda Online Service Platform known as "Irembo"; Districts; Sectors; Cells and the Landowners. The table which is explaining the duties of different institutions and actors involved in LAIS updating, in general, is in Appendix 1. Below are details about the institutions and actors who involved directly in the transfer of rights in the process of LAIS updating are discussed. They are presented based on the findings from laws, land administration procedure manual, job description and interviews.

RLMUA: This the Law n°05/2017 of 03/02/2017 establishing Rwanda Land Management and Use Authority and Determining its Mission, Organisation and Functioning. The law defines RLMUA as an Authority set up with the main objective of putting into place a well-organized system of land administration and land management that secure land tenure, encourage investment in land for socio-economic development and poverty reduction in the Country. It is composed of three departments namely the Surveying, Land Use Planning and Mapping Department; Land Administration Department/Registrar of Land Titles, and Corporate Services Division. RLMUA is directed by a Board of the Directors; directing the Director-General Office under the Ministry of Land and Forest (MINILAF) (GoR, 2016). The RLMUA actors involved in LAIS updating during the transfer of land rights in the current workflow are discussed below:

Registrar of Land Titles: This is a public officer responsible for keeping and updating the land register. There is one chief registrar (Director General of RLMUA) and five (5) registrars of land titles. The registrars of land titles form a council which can decide on issues related to land registration and better functioning of the services. They have the mandate to give the technical instructions to the District Infrastructure One Stop Centre (OSC). Registrars involve in the supervision of OSC staffs duties related

to land registration. In the process of LAIS updating, they are the ones who have the mandate to issue certificates of registration. They have the authority to approve or refuse a transaction electronically. Until now all physical printing and seal of the land certificates are done at the office of the registrar of land titles.

Administrative Assistant: The office of the chief registrar of land titles and each registration zone has an administrative assistant. They are in charge of receiving customers, who visit the office of registrars and offer them the information needed. They receive all correspondence send to their respective zone and provide the reference number; they are in charge of an expedition of the letter from the registrar of land titles. In the process of LAIS updating for transfer of rights, they receive the landowners who want to transfer their land parcel, check the requirements, and then direct landowners to the relevant personnel.

Land registration professional: Each registration zone has two professionals in charge of land registration except the City of Kigali which has 3. Also, there is two other professionals in charge of land registration who are under the land administration unit. In total, there are 13 professionals in charge of land registration. Among those professionals, there are five who are also the land notaries, one for each registration zone. Land registration professionals, have to advise and assist the registrar of land titles, in all daily duties. For example in the process of training the officials of the OSC in charge of land registration. Also, they are helping in land conflict resolution, and prepare the reports. The five land registration professionals who are also the land notaries, sign the transfer agreements when the landowner applies at the registration zone in the absence of the registrar of land titles (GoR, 2014b).

LAIS Processor: The role of LAIS processor is new in the land administration system in Rwanda. However, it is an important role, because of the LAIS maintenance. They are the ones to update the administrative part of LAIS. In case of a transfer of rights, the LAIS processor has to book, scan and to attach all required documents, accept, and process the application file.

Besides the above actors, who are directly involved in the transfer of land rights, the following actors are involved indirectly:

IT staff: they are nine employees in the unit of Management Information System and provide IT support under RLMUA.

GIS Professional: they are in charge of updating the spatial information within LAIS. When a transaction involves subdivision, it has to be performed first, providing two new, different Unique Parcel Identifier (UPI). This subdivision is performed by GIS professionals and approved by the registrar of land titles.

Below is figure 4.1 showing the organisational chart of RLMUA, the actors discussed above are located in the department of land administration and IT support unit in the red rectangles.
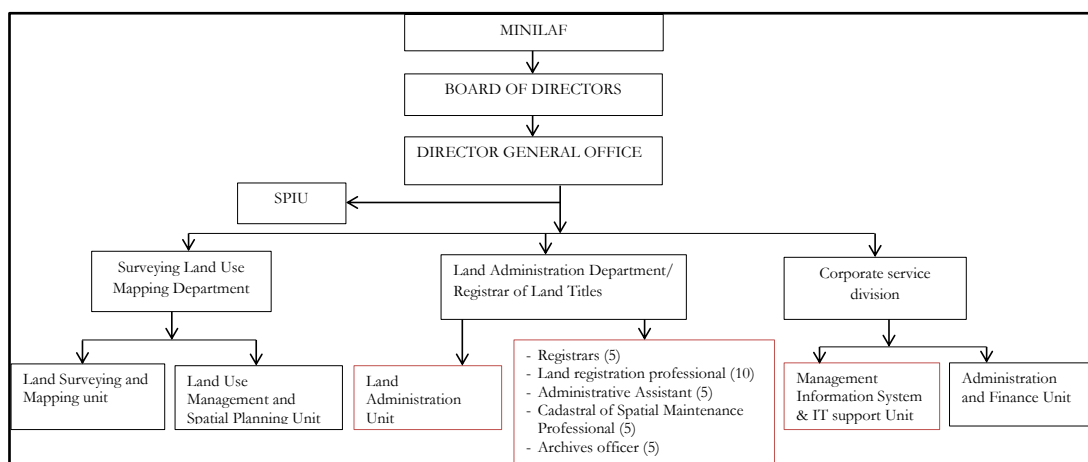
Figure 4.1: Organigram of RLMUA (Source: RLMUA, 2017)

Districts Infrastructure One-Stop-Centre (OSC): In Rwanda, there are 30 districts within four provinces and the City of Kigali, and they are managed by the Ministry of Local Government (MINALOC). In each district, they are different administrative units, one of them is the OSC. Below are details about those who are involved in the process of LAIS updating:

The receptionist is a government official who is in charge of receiving the customers, directing correspondences to the relevant personnel within the OSC. Receptionist is also in charge of providing the reference numbers to all files received, stamp all documents signed by the director and keep the records. Also, prepare the periodical reports regarding land and infrastructure services demand.

Billing officer is in charge of monitoring the land tax payment, and send reminders to landowners on time to clear their taxes. The billing officer exploits a tax database (Rwanda Automated Local Government Taxes Management system) and uses the obtained information to advise the district on mechanisms to increase its local tax base. Based on that, in the process of LAIS updating, is playing a role to verify if the fixed asset taxes or land lease have been paid.

The land administrator is in charge of making preliminary assessments of applications for land leases and accordingly advice landowners on services. The land administrator manages, in close collaboration with the archivist of the OSC, all land documents, both in digital and analogue form. The analogue is about the documents submitted by landowners during transfer application which have to be archived. Also, the land administrator has to report to the relevant authorities and update or advise relevant stakeholders on progress in the area of land administration.

LAIS Processor: at the district level there are LAIS processors like at the office of the registrar of land titles. Their duties are the same as discussed above.

Figure 4.2 below is a summary of the organisational chart of the districts to show the staff who are involved in the land registration in OSC as shown in the red rectangle.
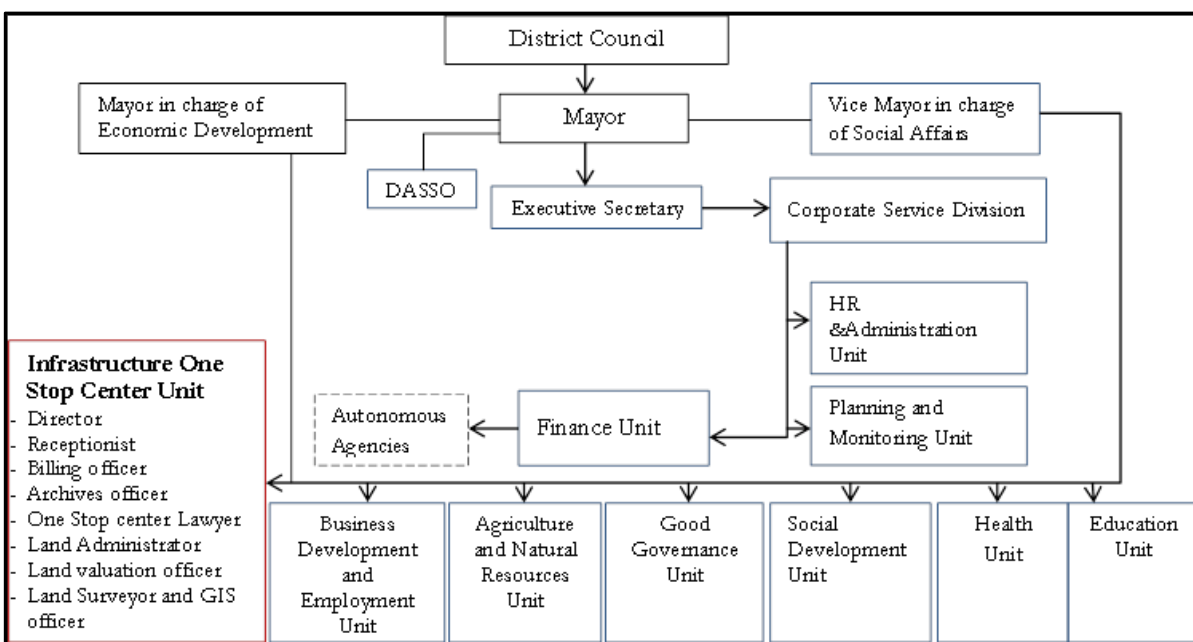
Figure 4.2: District Organization Structure (Source: MIFOTRA, 2017)

Sector land notary (land, habitat and infrastructure community settlements): in Rwanda, a district is subdivided into sectors. There are 416 sectors in 30 districts. They are managed by the Ministry of Local

Government (MINALOC). The objective of the government of Rwanda on this structure is to decentralise power and administration. In the process of LAIS updating, one sector land notary at each sector is recruited to offer the services related to land matters. The details about sector land notary role and authority are in section 4.3.

Landowners: Law governing land in Rwanda define landowners (proprietor) as every person (natural or non-natural) who owns land acquired either through buying or donation or customs and by a competent authority. In this study, landowners represent either the seller/buyer or donor/receiver. They can all search for information about requirements to be able to transfer the land. Once all requirements are met, they can go together to the land notary for signing the transfer agreements.

Behind all these actors mentioned above, there is Irembo a platform used for transactions payment declaration. It is one of the findings from the field which is necessary to show, as there is no transaction without payment and no payment without declaration.

IREMBO: is an initiative of the Government of Rwanda targeting the improvement of its service delivery to the population. In Kinyarwanda, the signification of the word "Irembo" is the gateway or door, indicating to have access, service and openness. Irembo is the one-stop portal for all e-Government services to improve their ease, efficiency and reliability. In the process of LAIS updating, the landowners do the declaration of transaction fees and taxation fees through the Irembo portal. This should be done before applying for the transaction. The Irembo platform is being used as first step for the application of the transfer by requesting an appointment with the land notary without physical interaction. The landowners who do not have access to the internet are supported through Irembo's agents, and this is the case especially in the rural areas. Note that Irembo's agents have their offices in different areas in the country (GoR, 2014a).

4.2.2.　Current workflow for updating LAIS in Rwanda

The current workflow for LAIS updating in Rwanda differs for a transaction depending on the institutional level of application. This research reviewed the current workflows for transfer of rights by sale and donation. The procedures, processes and requirements of LAIS updating in Rwanda are presented in the Land Administration Procedure Manual. Figure 2.3 and 2.4 give the overview of the land transactions and registration processes from different levels. Section 2.3.3 presents the definition of the transfer of rights by sale and donation. The next section is presenting the processes, requirements and the design of the workflow activity diagrams in reality as from the respondents. However, the characteristics of land transfers in Rwanda are discussed before.

4.2.2.1.　Transaction of transfer of rights by sale/donation

Transfer of rights on the property: a parcel of land can be transferred from one person to another person when all co-owners written on land titles agree to sign the deed before the registrar of land titles or another public officer in Rwanda (land notaries). However, the transfer is finalised when it is written in the land register (LAIS) on another person(GoR, 2014b).

- **Transfer by sale:** it is called transfer by voluntary sale when the landowner (a natural/non-natural person) accepts to transfer the rights to another person after receiving the money of the agreed price paid by the last one. Nevertheless, there can be a forced sale when the sale is based on a court ruling. Both transfers lead to the change of non-spatial information into LAIS. It will not affect the spatial information as it does not affect the rights itself or the parcel (RNRA, 2016).

- **Transfer by donation:** this transfer is similar to the transfer by sale, the only difference is that in this case, the landowner accepts to transfer the rights on the land parcel for free to another person and when the last one (receiver) has accepted the gift.

The process of transfer of rights: The landowners (seller or donor) who want to transfer the rights on a parcel of land, have multiple requirements and tasks to perform, to be allowed to sign the agreement before the land notary as described in Land administration procedure manual (RNRA, 2016).

The requirements for transfer of rights by voluntary sale are as follows:

- Proof of identity of the Buyer (Transferee);
- Notarised sale agreement, signed by registered parties;
- Land documents for the parcel to be sold;
- Notarised Memorandum of Association indicating shares of every shareholder, in the case among persons to be registered there are foreigners and Rwandans co-owning land or a company business company, an organisation or association with legal personality in which foreigners are shareholders.

The requirement for transfer of rights by donation documents are as follows:

- Application form
- Proof of identity of the donee
- Extract of marriage certificate or certificate of celibacy of the donee
- Notarised donation agreement, signed by the donor and the donee
- Land documents for the parcel be donated
- Notarised Memorandum of Association indicating shares of every shareholder, in case among persons to be registered there are foreigners and Rwandans co-owning land or a company the business company, an organisation or association with legal personality in which foreigners are shareholders.

Note that there are standard formats for the sale and donation agreements which are used by all land notaries when preparing the sale/donation agreements. There are also standard forms which are used by all voluntary sellers/donors when applying for the transfer of their rights on a land parcel (RNRA, 2016). The transaction fees should be paid before signing the transfer agreements. The total amount to be paid for the transfer by sale/donation is 30,000frw as defined in the Presidential Order determining fees paid for notarial services (GoR, 2017) and distributed as follows:
- 20,000frw for transfer of rights;
- 5,000frw for the certification and authentification of agreement of transfer;
- 5,000frw for one new land Certificate.

In the sub-section above description of transfer of rights by voluntary sale/ donation and also the requirements for each transaction is given. Below are the descriptions of the steps involved in LAIS updating workflow for each administrative level. The form used for the transfer and applications are in appendix 8.

4.2.2.2. LAIS updating workflow for application at sector level
Descriptions of the steps involved in LAIS updating workflow for application at the sector level:
Preliminary duties: landowners have to check the requirements for the transfer either on the RLMUA, districts or IREMBO websites, or they have to go to the sector looking for information. After getting the required information, landowners have to declare the transfer which is going to take place through Irembo (by internet), after that they have to go to the bank for transfer fees payments. Also, in case they

need a marriage certificate, they also have to declare and to pay for it and go to the cell then sector to get it before applying for the transfer. When all requirements are met then the seller with the spouse (if any) together with the buyer with the spouse (if any) have to go to the sector for singing the agreements in the presence of the notary.

Application: once the agreements are signed in the presence of the notary, the landowner(s) has to fill in the application form; and attach all required documents. After that he/she can submit the application file to the land notary. During interviews with landowners, they said that *"it is time-consuming to look for different documents to complete the application file as we have to visit different governments institutions for these documents",* and unfortunately you are not sure if your application is going to be accepted or rejected, you have to wait! For the urban area, the landowners said that the maximum time to wait for the land certificate is three (3) weeks after submission while in rural areas they could wait for up to two (2) months.

Submitting the application by the land notary to the district: the land notary at the sector level must check the application file to see if all necessary documents are complete; for example, if the identification card copy for the buyer is in the file or other required documents. When one or more required documents are missing the application file is rejected with an explanation of what the landowner has to fill in and resubmit again. When all necessary documents are in the application file, the land notary needs to go to the district for submission. The land notaries in urban areas submit the application file once a week because there is a car which helps with transportation. For the rural areas, the land notaries said that it is not easy for them as they have to use their money for transport which can be refunded later. However, they try to submit at least once every two weeks, sometimes even more.

Processing the application: when the sector land notary reaches the district for submission, the receptionist of the OSC has to receive all application files. The receptionist has to register them in the receptionist book, then give them to the billing officer to check if the taxation fees have been paid or not. When they are paid, the application file is sent to the land administrator who has the responsibility to check if all necessary documents are complete in the application file. Otherwise, it is rejected. At this point also, the land administrator can accept or reject the file application in case there is, for example, an annotation on the parcel. The application file is sent to the LAIS processor who will book, accept, and process the application file. The district officials agree that the chain inside the district itself is too long.

Approval and issuance of land titles: once the LAIS processor has accepted and processed the file application, the registrar of land titles will access it, and check if it has to be approved or if there is any reason for requesting any rectification. When the transfer is approved, the new certificate has to be printed and sealed from the registration office and issued. The LAIS processor from the district is the one to go to the zonal office for printing and return with the output (new land certificate) to the district. Next step will be to communicate the land notary from sector level to come and take the land certificates to be delivered to the landowners. Once the land notary from sector level collected all new certificates of its respective sector, the last step is to inform the new landowners that their land certificates are ready for issuance.

As demonstrated when the application is done at the sector level, three institutions and the landowner are involved in the process. Inside the district, there is a long process which is time-consuming, and delays services delivery. However, the RLMUA clients charter provides the days the application should stay in each institution. For the transfer of sale, the maximum time should be seven days. This means two days to the sector level; two days for the district level for processing and two days after approval for printing and then one day for the zonal level. While for transfer by donation the maximum time should be eighteen days, five days to the sector level, six days to the district for processing, two days to the zonal for approval, and five days to the district again for printing. Below is the activity diagram which shows the workflow of LAIS updating when the application process is made at sector level:
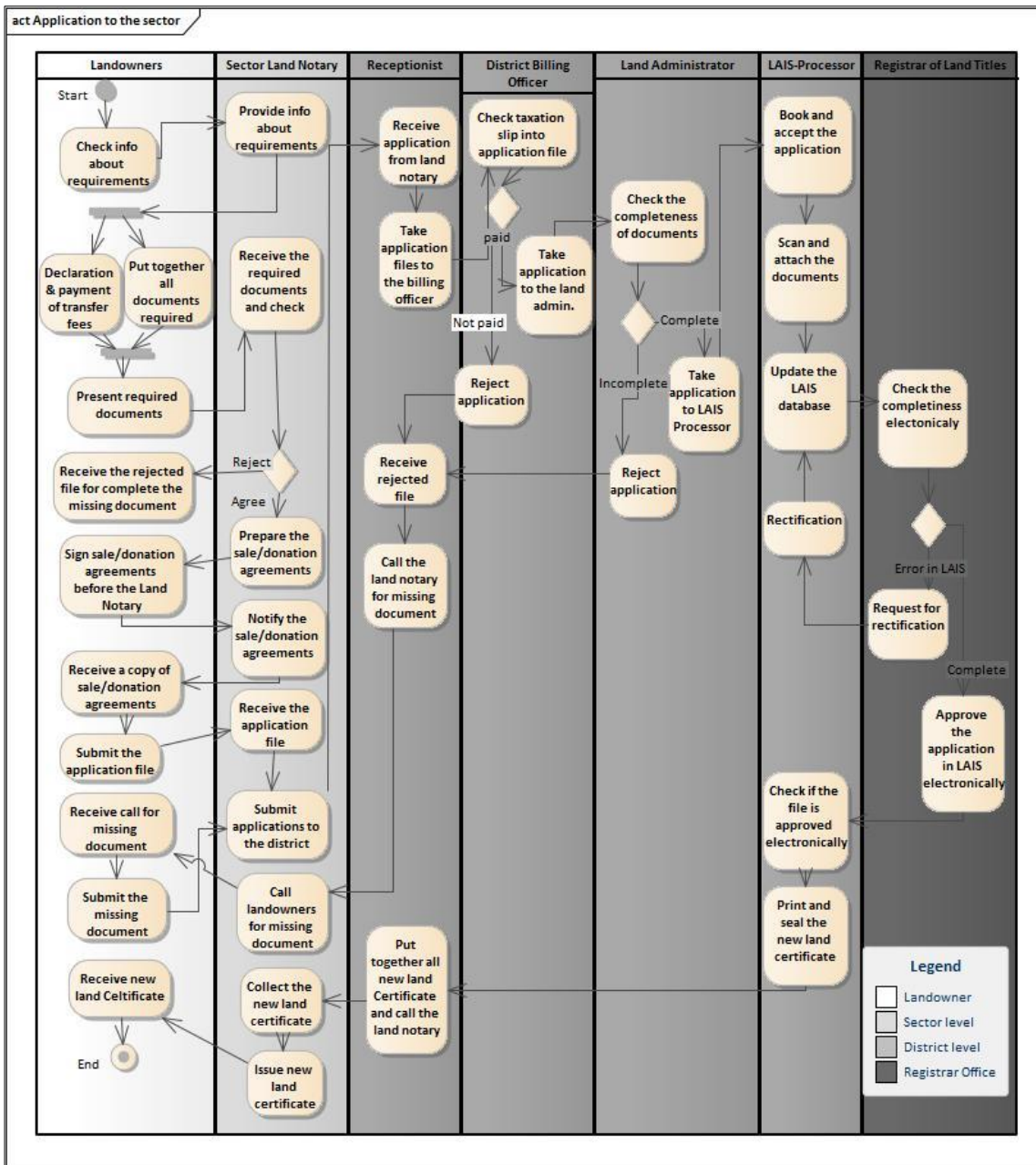
Figure 4.3: Current workflow for application at the Sector level (Source: Author construct based on interviews and focus groups)

4.2.2.3.   LAIS updating workflow for applications at district level

Descriptions of the steps involved in LAIS updating workflow for application at the district level:
Preliminary duties: all the steps here are the same as in the sector workflow, the only difference is that the landowner has to submit at District level and sign the transfer agreements from there.

Application: is done differently from the sector workflow. Here the landowner applies from the district without passing through sector level (land notary).

Processing of the transfer: here is done similarly as it is described in the workflow for the sector level.

Approval and issuance of land titles: the same as in the workflow for application at the sector level. As demonstrated when the submission is done at the district level, only two institutions and the landowner are involved in the process. Below is the workflow activity diagram explaining what have discussed above:
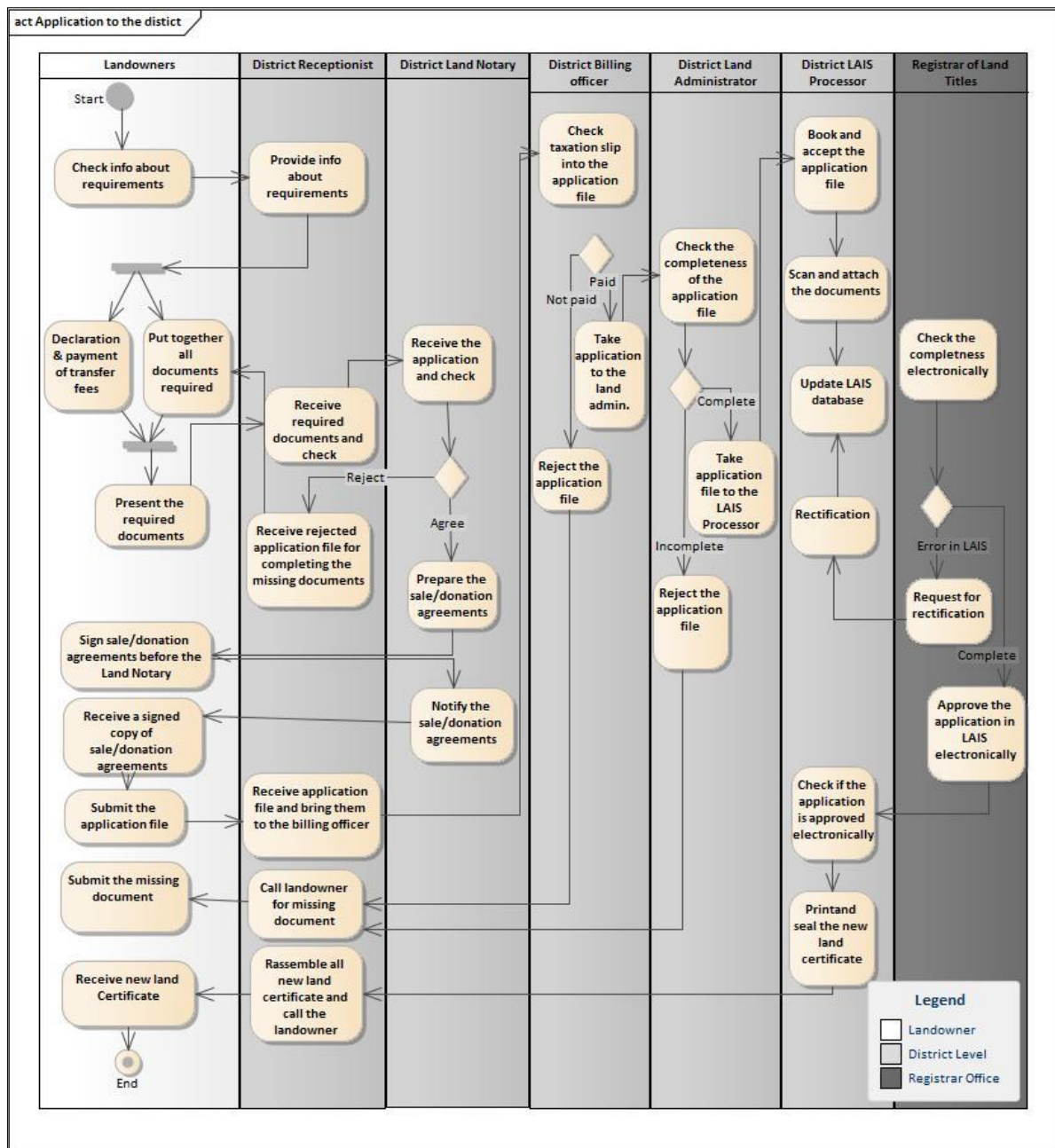
Figure 4.4: Current workflow of LAIS updating for application to the district level (Source: Author construct based on interviews and focus groups)

4.2.2.4. LAIS updating workflow for applications at the Office of Registrar of Land Titles

Descriptions of the steps involved in LAIS updating workflow for application at the office of the registrar of land titles:

Preliminary duties: Landowners have the same duties as in the two previous workflows; the difference is the level of application and the actors. Because they will have to go to the office of the registrar of land titles for signing the transfers agreements in the presence of the registrar or in the presence of land registration professional in the absence of the registrar.

Application and processing: in case, the landowners apply to the office of the registrar, after checking for completeness of required documents, the registrar of land titles or zonal land notary has to prepare and sign the transfer agreements, after the signature of the parties (seller and buyer). After that, the seller can submit the application file at the same time and place to the administrative assistant for writing in the entry book. Then LAIS processor will accept and process the application file. If any required document is missing the landowner must bring it first.

Approval and issuance of land titles: after the LAIS processor have accepted and processed the application; it has to be approved by the registrar electronically. The LAIS processor checks if the application file is approved to print and seal the land certificate. Finally, the administrative assistant issues the land certificate to the new landowner (buyer). Note that at this stage only one institution and two parties (seller and buyer) are involved in this process. Also, this is the process which happens only in one day called "one step one day land transfer" and it is for commercial and industrial purposes only. Below is the workflow activity diagram explaining what discussed above:
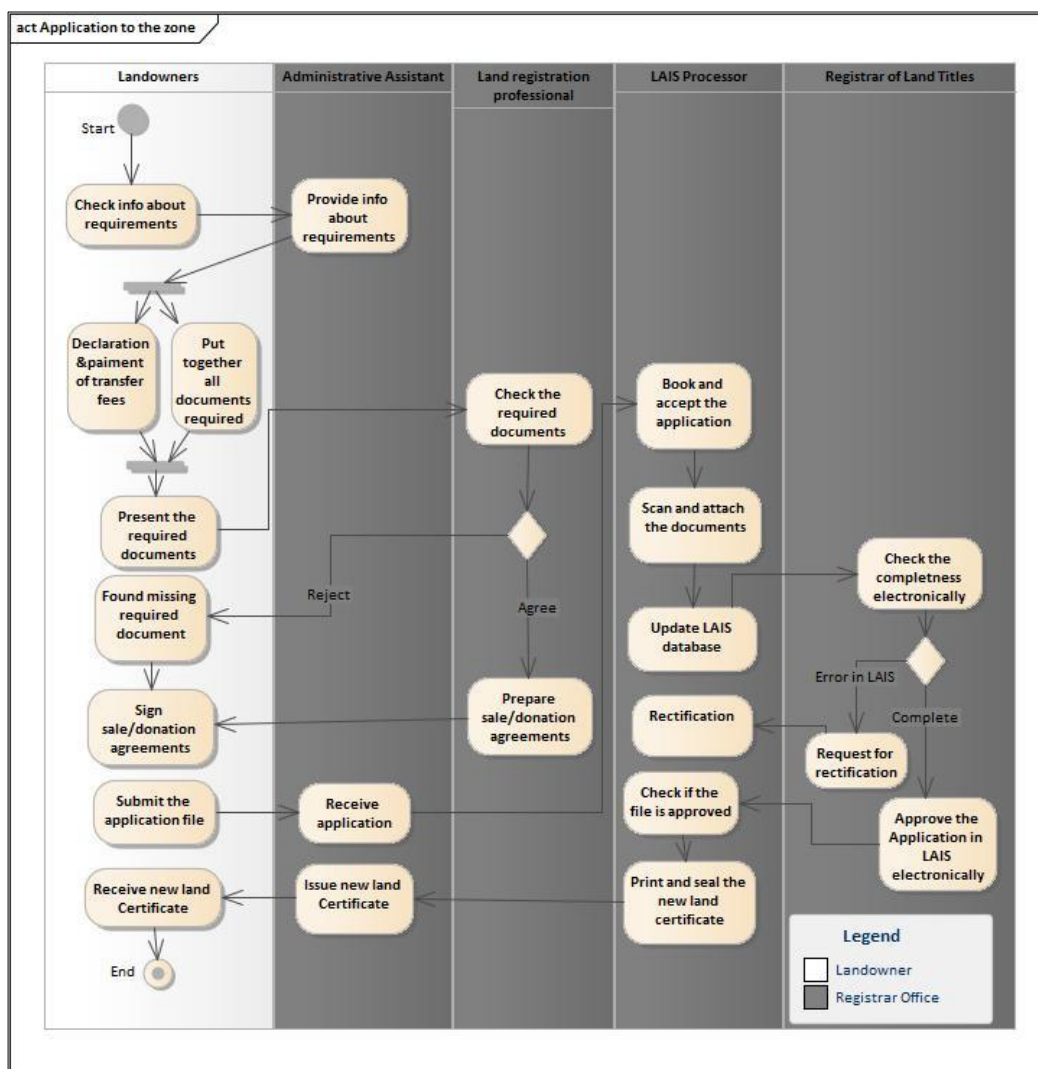
Figure 4.5: Current workflow of LAIS updating for application to the Zonal level (Source: Author construct based on interviews and focus groups)

4.2.3. The positive and negative factors which influence LAIS updating

As discussed above, there are some factors which influence LAIS updating in Rwanda as revealed by respondents during fieldwork. The similar factors have been discussed by Magis and Zevenbergen (2014) and are as follows:

- Organisational factors: relate to institutional aspects (how they are involved in the process, how they complete each other, and how their actors are organised and managed internally);
- Technical factors: related to the technology used in storing and supplying the information, the material needed (maintenance of these materials) and the digital network;
- Economic (Financial) factors: determine the resources available for land registration, but also the goals the system is supposed to achieve;
- Cultural factors: determine the legal and administrative system existing and the mentality of society and the staff involved in land registration.

These factors influence LAIS updating in different ways, and they may differ according to urban and rural context. For the organisational factors, there are no big differences between urban and rural areas; while for the technical; economic and cultural factors there are differences and similarities between urban and rural areas. Table 4.1 below presents the comparison between these factors as viewed by the respondents in the context of land notaries; landowners; and districts officials:

Table 4.1: Factors influencing LAIS updating urban and rural areas context

Context	Urban	Rural
Factors	Land notaries	
Organisational factors	- RLMUA should be one institution in charge of land management to ended the problem of broken chain of command to the level of districts and sectors; - One-stop-shop at the sector level should be the solution to the service delay; - There is a problem of overloaded duties to the sector land notaries; - Employe the secretaries to support the sector land notaries;	- RLMUA should be one institution in charge of land management to ended the problem of broken chain of command to the level of districts and sectors; - One-stop-shop at the sector level should be the solution to the service delay; - There is a problem of overloaded duties to the sector land notaries; - Employe the secretaries to support the sector land notaries;
	Landowners	
	- There is public transport, no problem about distance; - Decentralisation of the services to sectors level;	- No public transport, they have to work by foot; - Decentralisation to the cell level.
	Districts officials	
	- Printing of new land certificates should be at the district level not to the office of registrar of land titles; - RLMUA should take the lead for managing the staff in land matters;	- Printing of new land certificates should be at the district level not to the office of registrar of land titles; - RLMUA should take the lead for managing the staff in land matters;
Technical	Land notaries	

factors	- No problem of electricity; - Majority of the sectors are connected to the internet; - There are enough infrastructure materials - Many sector land notaries have the office for themselves; - Lack of access to the LAIS; - There is difference between master plan and the land records; - The link between the systems of the Banks, RDB, Irembo, RRA,…. and LAIS is needed for sharing land information;	- Some sectors in rural areas do not have electricity; - The majority of the sectors are not connected to the internet; - They have materials (computers, scanners…) but the maintenance is an issue, even to get a cartridge is a problem; - Many land notaries share the office with other staff of the sectors; - Lack of access to LAIS, - The link between the systems of the Banks, RDB, Irembo, RRA,…. and LAIS is needed for sharing land information;
	Landowners	
	- Easy accessibilities of technical infrastructures (internet); - Easy to hire the private surveyors as many of them live in the city, in case of the subdivision before transfer;	- Difficult to access technical infrastructure (internet); - Not easy to hire the private surveyors in case of the subdivision;
	- Districts officials	
	- The district land offices have all necessary materials (computer, scanners); - The part of non-spatial information in LAIS is well functioning; - There are data integration and networking issues to the spatial information part(GIS);	- The district land offices have all necessary materials (computer, scanners); - The part of non-spatial information in LAIS is well functioning; - There are data integration and networking issues to the spatial information part(GIS);
Economic factors	- Land notaries	
	- High value of land in urban areas; - High demand, of transfers; - Using sector's car for submission of application file to the district;	- Less value of land in rural areas; - Less demand for transfers; - Land Notaries use their money for transport to submit the application file to the districts (later they receive the allowances);
	- Landowners	
	- Transfer fees are affordable for some and high for others; - Subdivision fees are high; - Taxation fees are high;	- Transfer fees are high; - In case of a subdivision, the fees increase as they have to pay the transport of surveyors who live in the city in many cases. - Taxation fees for those who have to pay are high as well;
	- Districts officials	
	- The payment procedure of taxes is not precise, and an awareness campaign in	- Transaction fees in a rural area should be reduced to facilitate the landowners to

	this domain is needed to the landowners.	report the land transfers.
Cultural factors	Land notaries	
	- Taxpayers do not pay land lease fees on time because they were not used to pay in the past; - Many landowners understand the importance of reporting the transfers; - There are land disputes between different people;	- Majority of landowners still manage their land through customary law; - Generally in many cases land in rural area is not a subject to the taxes as is for agriculture; - There are intrafamily land dispute;
	Landowners	
	- Many of them understand the value of the land, and they report on time the changes that happen;	- Many of them do not mind to report the land transfers as they still believe the nature boundary (like trees);
	Districts officials	
	- Some districts leaders have the perception of managing land through customary law;	- Some districts leaders have the perception of managing land through customary law;

After interviews and focus groups discussions at the sector level and district level, the researcher meets the RLMUA officials and interviewed them about the findings from the previous interviews and focus groups discussion, and also their understanding, in general, of the challenges in LAIS updating. The officials argued on different factors which influence LAIS updating, for example about the:

Organisation factors: Interviewees from RMUA said that at the RLMUA level the chain of command is well integrated and smooth, but at the district and sector level, the chain of command is broken. Moreover, when an employee is not performing well according to their daily duties, the registrar of land titles cannot interfere because the employee does not work under RLMUA. Secondly, they believe that RLMUA, district and sector levels are understaffed. Hence those present are unable to execute the LAIS updating duties efficiently, especially the IT staff.

Technical factors: they argue that the land notaries do not have access to the LAIS. Furthermore many sectors do not have internet and electricity, especially in rural areas. All these factors have a negative impact on the procedure of LAIS updating; as the land notaries are obliged to submit the received applications to the district. Unfortunately, there are also no transport means for them.

Economic factors: until now the transactions fees are a significant challenge to the customers (landowners), and this is one of the reasons the landowners refuse to report the change. Besides that, there are many materials needed which the sector land notaries do not have, but there are no sufficient financial means for buying those materials. RLMUA need to invest to get money to resolve all these financial problems.

Culture factors: the Rwandan people are used to manage their land through customary law, using the natural boundaries. In this regard, RLMUA has organised awareness campaigns to explain the importance of registering their land, each year from 2014 to present, but the strong belief in customary tenure remains. This is especially the case with the transfers of ownership in case of succession; no one is willing to report the change and to pay his/her money. In other words, no one wants to "take the lead" in registering the successor land.

This section has described results of data collected from interviews, focus groups discussion, and secondary data on the actors involved in LAIS updating, the factors which influence LAIS updating,

description of steps involved in LAIS workflow for each administrative level and the design of the workflow activity diagrams. Sector land notaries are one of the actors involved in LAIS updating, and they are the intermediate between districts and landowners. The organisational, technical, economic, and cultural factors are influencing LAIS updating, and the role and authority of sectors land notaries in one or another way. The next section describes the role and authority of sector land notaries.

4.3. Role and authority of sector land notaries in the process of LAIS updating

In the previous sections, different actors and their roles in LAIS updating workflows have been identified. Based on field data, the following sections discuss the perceptions of different respondents on the role and authority of the land notary in the process of LAIS updating. It then discusses the challenges linked with the role and authority of the sector land notaries in the process of LAIS updating. Finally, it assesses whether all changes that have happened in the field are reported and if not, the reasons why they are not reported.

4.3.1. Role of sector land notary in the process of LAIS updating

The land notaries in Rwanda play an essential role as discussed in section 2.3.4. Art. 10 of the Law nᵒ 13bis/2014 of 21/05/2014 governing the office of the notary lists the duties of the land notary as follows:
- To certify and authenticate wills involving immovable property and deeds that nullify them drawn up by the testators;
- To certify and authenticate contracts for transfer of land and other immovable property incorporated into soil through succession, donation, bequest, inheritance, leasing, sale, land leasing, compensation, right-of-way, provision of a guarantee for the benefit of a third party;
- To certify and authenticate contracts relating to condominium agreements;
- To certify and authenticate other deeds related to land transfer provided for by law.

Besides what is stipulated by the law, all respondents during fieldwork, in answering the question about the role of sector land notaries in the process of LAIS updating, emphasised the sector land notaries' role as the direct contact person between landowners and internal administration system. For example, one landowner said: "*in reality, the fact that the land notary is at the sector level, helped us one hundred percent because now it is easy to apply from sector than it was before when we have to go to the district. For example, in the past, I bought the land parcel in Rwamagana district, but it took me two years to get new land certificate*". By this point, the interviewed leaders of RLMUA argue with the landowners. One example given by registrar of land titles, said that "*the land notaries are the keys in the process of transactions because they are our front desk, they are the ones who receive the client, they are the ones in direct contact with the client*". The role of sector land notary in the process of LAIS updating is crucial, as shown by the literature review and revealed by different respondents. However, what about their authority in the process of LAIS updating? What is the impact of the transfer signed agreement? The answers from the law, different reports and respondents are given in next sub-section.

4.3.2. Authority of land notary in the process of LAIS updating

The concept "Authority" can be used to mean the right to exercise power given by the state (in the form of government) or by academic knowledge of an area (someone that can be an authority on a subject) or in some societies, by high spiritual power or duties. In the case of Rwanda, the article nᵒ 3 paragraph 6⁰ of the Law nᵒ 13bis/2014 of 21/05/2014 Governing the office of the notary list the public employee who has the power to exercise the duties of land notaries. Article 10 of the same law list the competence of the land notaries. While article 14. 6⁰ of the same law stipulates that "the notary in land-matters shall be competent over the whole territory of his/her duty station" (GoR, 2014b). This means that the sector land notaries' territory competence is in the jurisdiction of their respective sectors. However, the Mayor of the district has the authority to extend the territorial competency of the sector land notary wherein the Minister of justice shall be informed as well. This is applicable in the event that the district notary is absent

or is prevented from exercising his/her duties within a period exceeding two days. In such a case, the sector land notary of the head office of the district will take over. It is the same for the sector land notary of neighbouring sectors whereby the nearest sector land notary will take over the duties (article 15 of the same law).

Article 37 of the same law stipulates that "*in authenticating contracts on the transfer of immovable property, the notary shall verify the transferor's ownership of the property. Persons registered on the land titles must be present. In case of their absence, they produce legal documents attesting their consent to the transfer*" (GoR, 2014b). This signed deed, if it was done in violation of the law, shall be nullified by a competent court (art. 51). Also, the law stipulates that the notary shall act in the name of the government and compliance with the law (art. 16). In the performance of their notarial duties, the notary shall act in complete independence (art. 17). All these articles exhibit the importance and authority of a land notary. However, the reality discovered during fieldwork revealed some challenges as obstacles to exercise that authority in land matters. This has been discussed during the focus group with the sector land notaries and interviews with RLMUA leaders and districts officials. Also, the report of the data from LAIS and sector land notaries book confirmed that different reality.

a. Findings from focus groups with the sector land notaries

According to the Law, "any deed authenticated by a notary in violation of the law shall be nullified by a competent court"art 51 of the Law n⁰ 13bis/2014. However, there are organisational and technical hindrances to execute legal authority with regard to the sector land notaries. For example, they only refer to the hard copy of the land certificate when preparing and signing the transfer agreements. When the certificate is not authentic, or when the agreements signed are in contradiction with the content of LAIS, the district officials will reject the agreements. Also, the sector land notaries are supposed to exercise their notarial duties in complete independence. The executive secretaries, who are their direct supervisors, can order them to leave the clients (landowners) to attend to other duties without finishing the transfer. Again many of the sector land notaries share the offices with other staff. Because of this the privacy of the landowners during their transactions cannot be assured. These issues explain, how and why the notaries cannot exercise the authority stipulated by law.

b. Findings from interviews with the RLMUA leaders and districts officials

According to the RLMUA leaders, there is a different source of law and information as hindrances to execute authority of sector land notaries. One of the registrars of land titles said, that "*the land notaries are there by the law. What they do is bounding as a law. However, sometimes you can find the errors in what they did, in such case, it is better to return the file application for correction because it can cost them after all. When there is an annotation on the parcel, land notary's authority conflicts with the court decision which is also a law. In this case, it is necessary to have an intervention of a court to order what is going to be done*". The district officials also argue with the registrar of land titles that the authority of land notaries depend on information given by LAIS database. When the agreement signed by the land notary is in contradiction with LAIS information, no one will change what is registered into LAIS unless there is a court decision order. In other words, this confirms what said by the cited registrar.

c. Findings from government reports

There is a difference between the number of the transfer of rights by sale and donation registered into the LAIS database and reported from the book of land notaries in the three sectors visited. This confirms what respondents said because a land notary can sign the transfer agreement, but it can be rejected and therefore will not be registered into the LAIS database. Table 4.2 below shows the number of transfers signed by the land notaries of the three sampled sectors and those registered into LAIS during the fiscal year 2016-2017 (from 1st July 2016 - 30th June 2017).

Table 4.2: Difference between registered and unregistered transfers (source: fieldwork)

Sector/ District	Transfers by sale and donation signed by the notary	Transfers by sale and donation registered into LAIS	Unregistered transfers	% of registered transfers
Kacyiru/ Gasabo	186	183	3	98%
Tumba/ Huye	286	278	8	97.2%
Gisenyi/Rubavu	444	392	52	88.5%

4.3.3.   Challenges linked with land notary role and authority in LAIS updating process

In the process of LAIS updating, there are some challenges which are linked with the authority of land notaries. Some are already discussed in section 1.2. They were further supported during fieldwork through the questionnaires sent to the sector land notaries who did not participate in focus groups. The main reason for using the questionnaires was to explore; if there are other challenges linked to the land notary role and authority in the LAIS updating process, and to know how many land notaries face these challenges. Furthermore, the same question was discussed; during the interview and focus group.

The respondents argue that many challenges are linked with the role and authority of land notaries. Many of these challenges are based on the hierarchy of institutions. Because the sector land notaries are under local governments and their supervisors may not understand the land services very well. Additionally, the fact that notaries have many duties, time allocation to the land services is limited. This results in service delivery delays because it will be difficult for them to meet the deadlines. The situation also discourages the landowners to report changes because landowners want to find the land notary at his/her office when visiting the sector office which is not always possible. Also, the rejected application files cause the disputes between the landowners (seller and buyer). For example, if the buyer paid all the money for the property and the seller used the money in case the application is rejected there is a dispute. In such case, the land notary will be involved in the court to explain why he/she signed transfer agreements. Also, most information sharing in the work of the notaries takes place on paper (Figure.4.6) as there is no access to LAIS (Figure 4.7), but at the same time, sector land notaries find that the use of hardcopy land certificates is one of the most important obstacles to accessing information (Figure 4.8). From Figure 4.9 to 4.12 it can be seen that the land notaries have other challenges besides lack of access to the LAIS and the paper-based service delivery. Among others there is the overload of duties, a big number of customers many of them need advice or information(awareness still needed), and sharing the offices with other staff of the sectors. Below are the Figures 4.6 to 4.12 and the percentage of the number of land notaries with respect to each variable.

Figure 4.6 below shows how often the sector land notaries use the digital or paper-based information, in one working day, in the process of transfer of rights. 92% of the respondents show that the paper base information is very often used in that process. 84% shows that digital information is sometimes and rarely used.
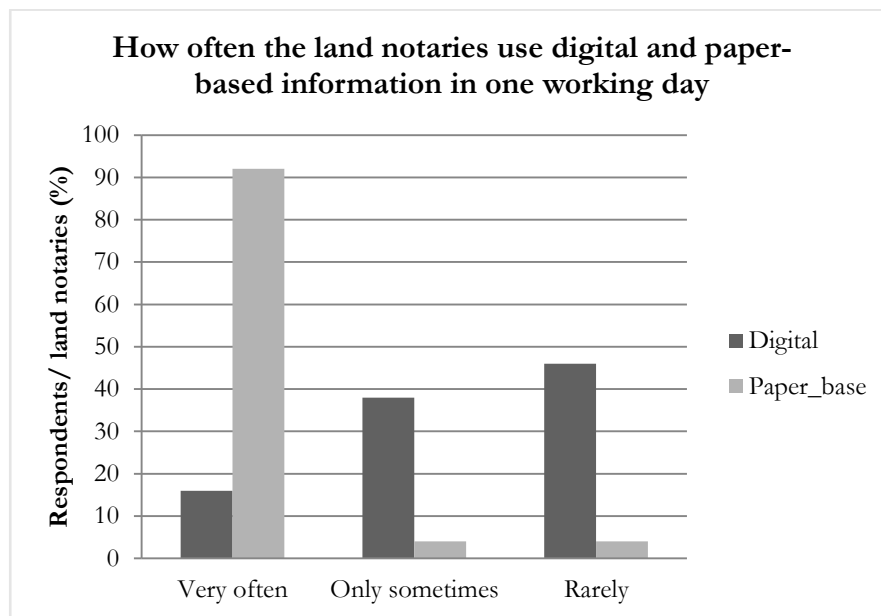
Figure 4.6: Frequency of accessing digital or paper-based information by the sector land notaries

Figure 4.7 below shows that about 92% of the respondents consider the information given by landowners as the most important and important source of information they use in the process of LAIS updating. 50% shows that they can access LAIS (through phone by dialling *651# themselves and get information). While 26% have to make a phone call to the LAIS processors to the districts to have information from LAIS.
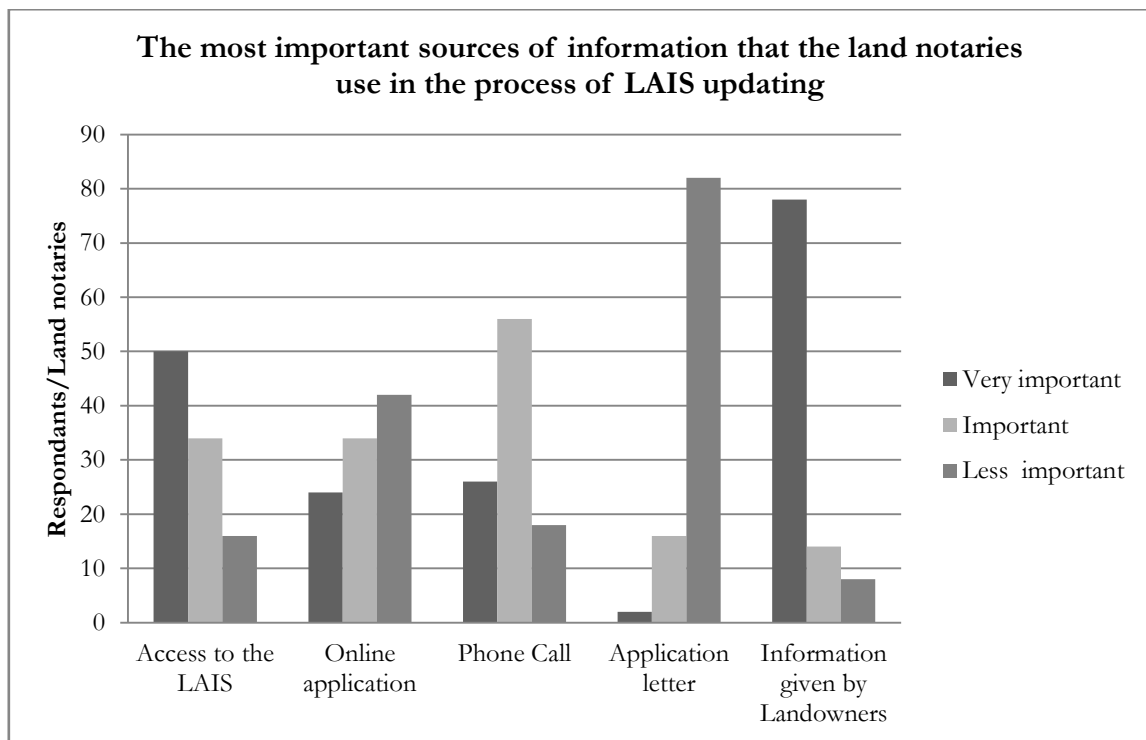
Figure 4.7: The most important sources of information that the land notaries use in the process of LAIS updating

Figure 4.8 below shows that 98% of the respondents highly/agreed that the lack of updated information from LAIS is an obstacle to access the necessary information to perform well their responsibilities of

notification of transfer. While 94% of the respondents highly/agreed that the use of a hard copy of the land title is another obstacle.
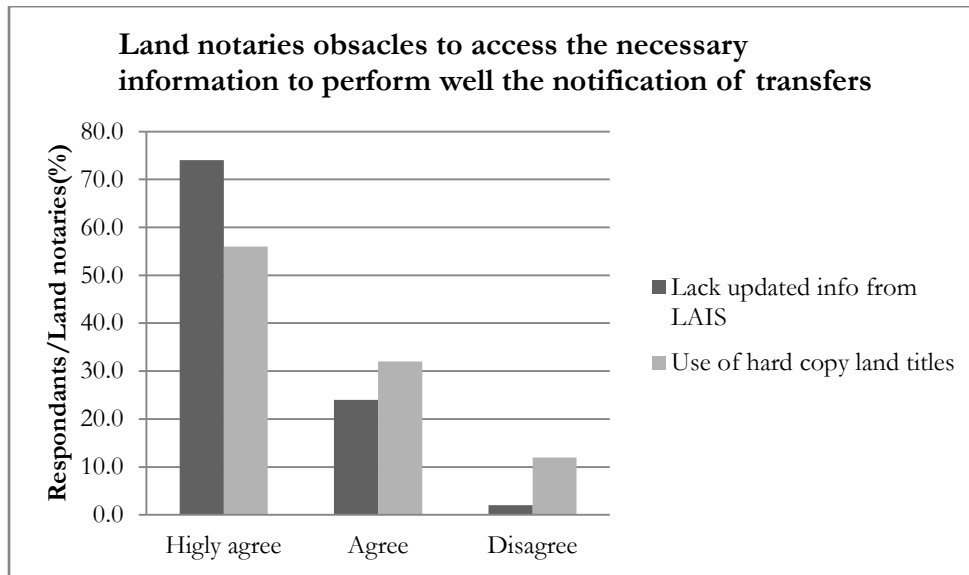
Figure 4.8: Land notaries' obstacles to access the necessary information to perform well the notification of transfers

Figure 4.9 below shows that 66% of the respondents highly/agreed that the significant number of customers request hinder them from doing well their work. 88% is about customers with incomplete documents. While 74%, is about the customers who are not aware of where and how to pay the transaction fees. Also, 66%, is the customer who goes to land notaries for advice only, which is additional time. Lastly, 90% is about the delays from the districts and RLMUA. Which means that when the Districts and RLMUA delays to deliver the services, it will affect the performance of the sector land notaries.
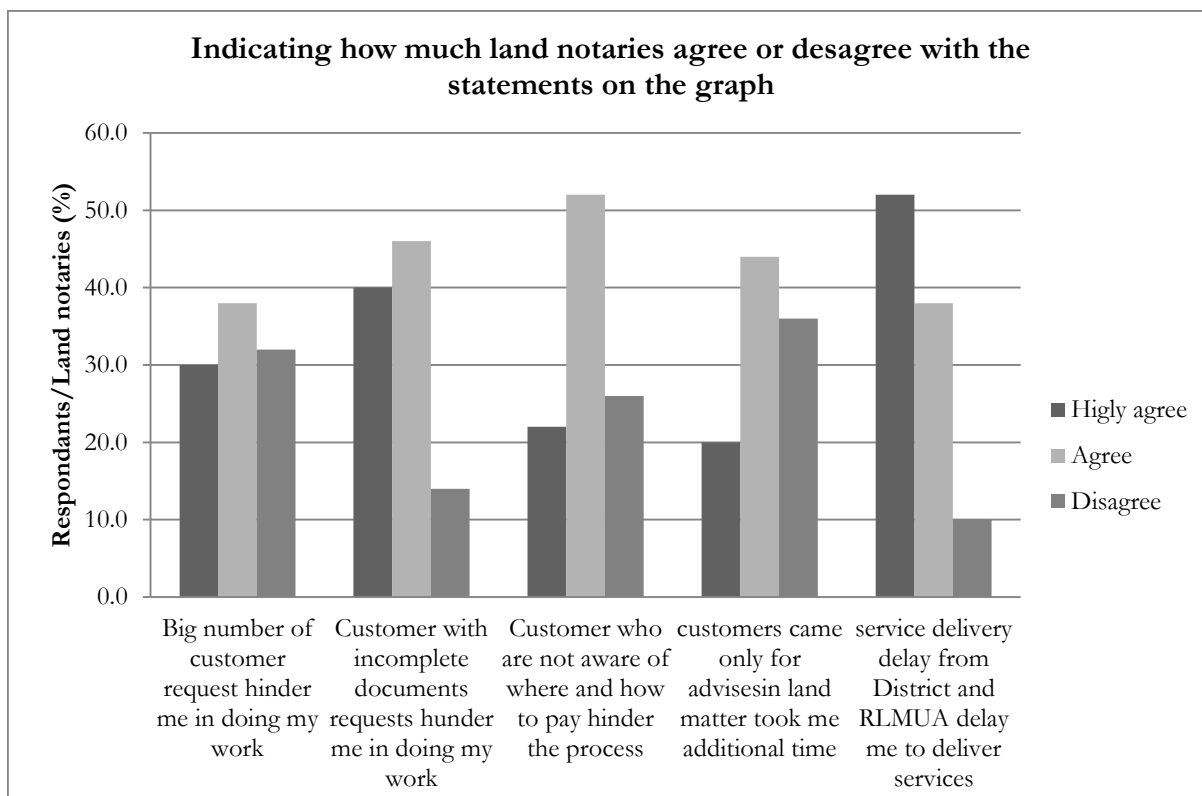
Figure 4.9: Indicating how much the land notaries agree or disagree with the statements given

Figure 4.10 below shows that 84% of the respondents replied that they are facing the problems of delay in submission of the application of the landowners to the districts. 88% Face the problems of receiving unprocessed applications returned from districts. 98% Face the problems of lack of transportation to help them to reach the district. 84% Face the problem of time allocation (the time to go to the districts) because of overloaded duties
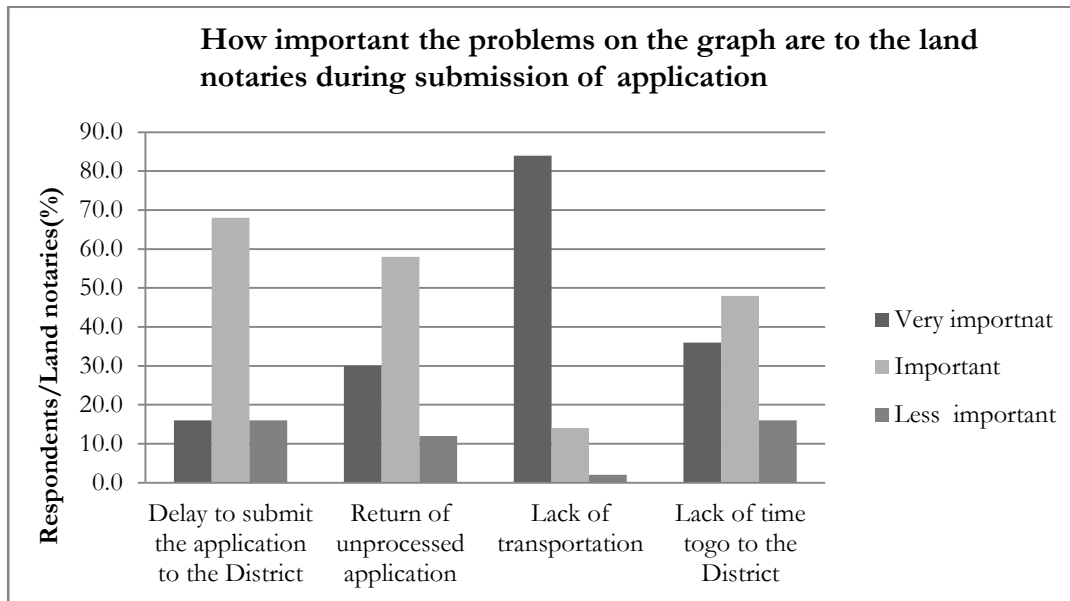
Figure 4.10: How important the problems on the graph are to the land notaries during submission of application to the districts

Figure 4.11 below shows that 96% of the respondents highly/agreed that the main problem they face in their daily work is the overloaded duties and responsibilities. 40% Is the choice which is given to the landowners to apply from different levels. 56% Is about the delay in service delivery because of the disputes, and 28% entails their involvement in the courts.
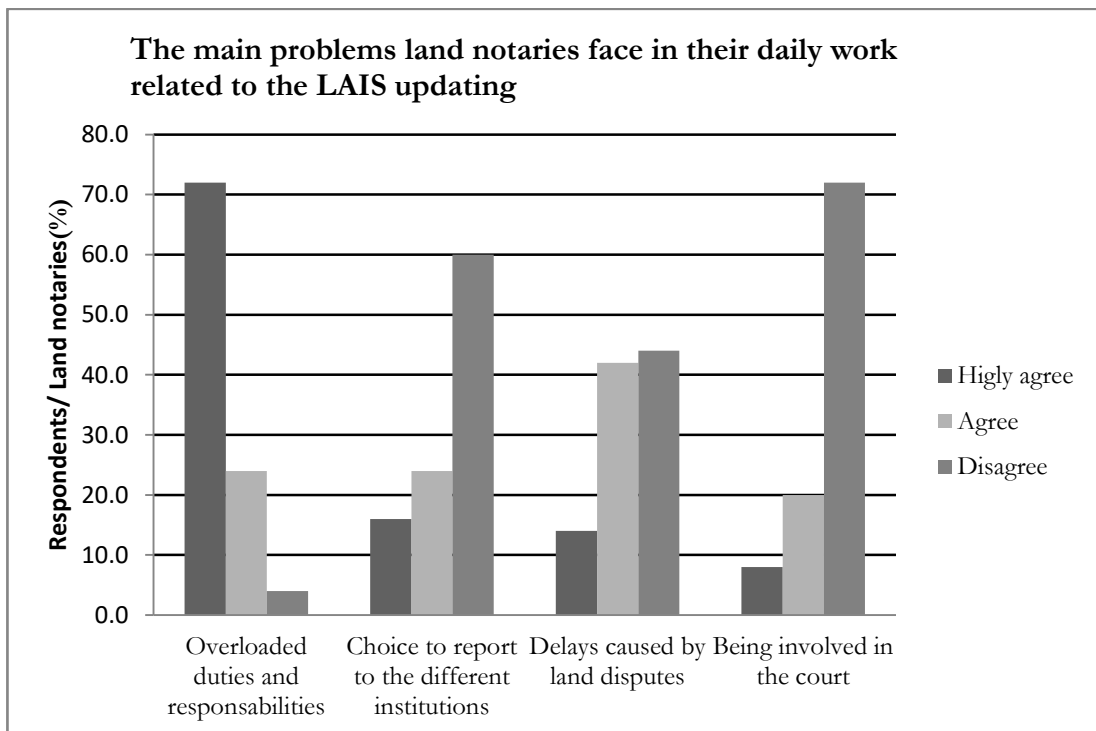
Figure 4.11: The main problems land notaries face in their daily work related to the LAIS updating

Finally, Figure 4.12 below shows that 88% of the respondents highly/agree about the lack of internet at their offices. All respondents highly/ agree on paper-based services delivery. 92% Highly/agree on the gap between land notaries and LAIS, and 66% highly/agree on the fact that they are sharing offices as the main problems which they face in their daily work.
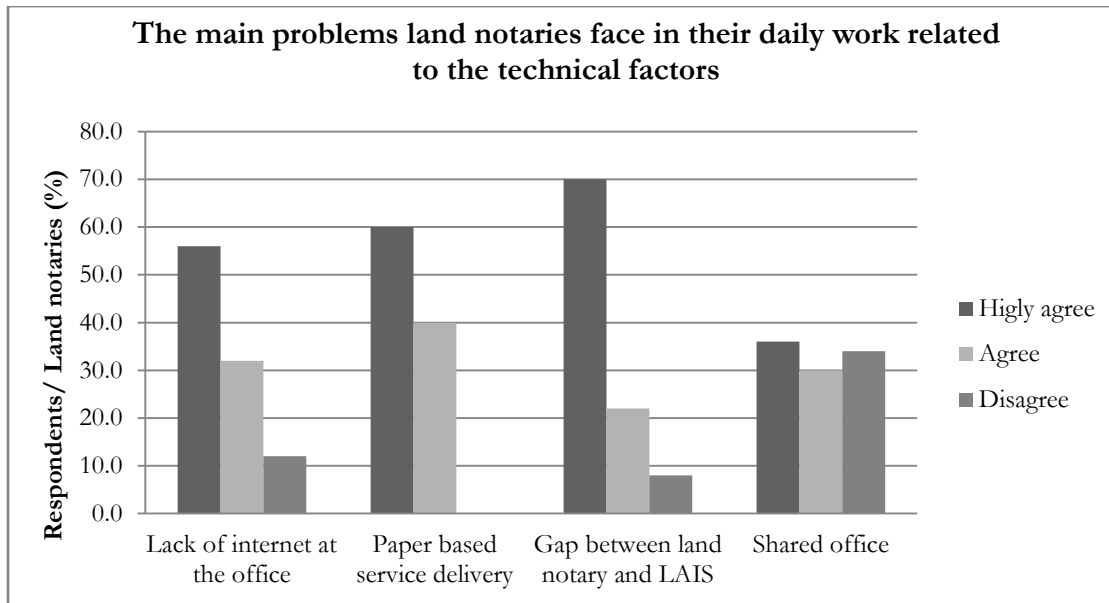
Figure 4.12: The main problems land notaries face in their daily work related to the technical factors

This section described different challenges linked to the role and authority of land notaries. As revealed by different respondent from semi-structured interviews, focus groups, and questionnaires. Amongst most notable is lack of access to the LAIS, overloaded duties, shared offices, and paper-based information service delivery. Below are challenges in reporting changes and registration under LAIS faced by landowners which are related to the challenges of the land notaries.

4.3.4. Challenges in reporting changes and its registration under LAIS faced by landowners

Landowners revealed that not all changes that happen on the land are reported. Moreover, even those reported are not all registered into LAIS. Landowners have given many reasons for this discrepancy. On one side landowners indicated that the process is complex. They have to pass through many institutions to get the documents required for the application. Once they get all the documents, the application file passes through different institutions, while the land notary is often absent from the office, and can not aid landowners in the processing of their transactions. Additionally, the transactions fees and tax fees are considered high. Also, the process of verification of tax payment is another challenge especially for the buyer as it is done after the transfer. As a result, some landowners prefer to buy the land without reporting and trust each other, using natural boundaries like trees to subdivide the land themselves.

Let us look at one example of one landowner from Gisenyi sector of Rubavu District to show how the transfer fees are a challenge especially in rural areas. He said "*like me, I bought ten small parcels of land. When I came here to ask the information, the land notary told me that, to get one new certificate I have to pay 30.000 rwf (35.50US$) for transfer. Among ten parcels I bought, 4 of them need to be subdivided into two pieces each before transfer because I bought a piece of the parcel. Each subdivision I have to pay 90,000rwf. That is how difficult it is for transferring the bought land parcels."* Table4.3 below is presenting the total amount that the landowner needs to pay to get ten new certificates of the land parcels bought:

Table 4.3: Demonstration of transaction fees using example of what one landowner said during interview

Transaction	Activity	Number of parcels	Unit price	Total Price	Grand Total Price
Subdivision	Surveying (Private)	4*2=8	30,000	240,000	320,000 (378.70US$)
	Approval of cadastral record (District)	8	10,000	80,000	
	New land certificate fees		5,000	40,000	
Transfer	Transfer fees	10	20,000	200,000	300,000 (355US$)
	Notification fees		5,000	50,000	
	New land certificate fees		5,000	50,000	
Total to pay					620,000 (733.7US$)

4.4. Suggestions of the respondents for optimised workflow based on the role and authority of land notary

The workflow for LAIS updating, based on the role and authority of land notaries as presented above has many positive points but also poses various challenges to the landowners and land notaries themselves. Thus many suggestions have been given from RLMUA leaders, district staff, land notaries, and landowners during fieldwork. Each group provided suggestions, but many of those suggestions are similar, and for that, they are combined under the themes of sections 4.4.1. to 4.4.4. The following are the suggestions given by all respondents:

4.4.1. Suggestions pertaining to intra-government collaboration

- One governing institution from central level to the local level is needed, to facilitate the chain of command, through which all employees will be employed and managed by the same institution under the same workflow which will facilitate service delivery;
- The collaboration within government institutions is needed to help each other to perform their responsibilities in a different domain. For example, Rwanda Energy Group (REG) should supply the electricity throughout the country, especially in rural areas. The institution in charge of internet connection should provide for access to internet connection throughout the country;
- Decentralisation of the services to the cell level (this applies to rural area);
- Decentralisation of all services to the sector level;
- The RLMUA should allow any subdivision even if the land in question is small (rural areas);

4.4.2. Suggestion pertaining to the infrastructure

- The integration of LAIS with other systems of different institutions, which are working together with RLMUA, is needed to share the information, to facilitate the landowners to get the services at the same place; instead of asking them to bring everything which is time-consuming;
- To give the sector land notaries access to the LAIS;
- Replace hard copy application by online application as the landowners has to bring different documents to the sector land notary for application, they should scan all and submit online;
- Online notification instead of giving hard copy to landowner after completing the transaction;
- Printing of land certificate can be done at the district level.
- While the rural sector awaits internet and electricity connection, provide modems to the land notaries;

4.4.3. Suggestion pertaining the staff

- Empowering land notaries by providing them with enough time, communication, transport and other ressources needed for delivering excellent services;
- Change the job description of the land notaries, remove the duties regarding infrastructure and community settlements services;
- Capacity building to the land notaries and other staff in land matters to keep their knowledge up-to-date to deliver good services equally well across all zones;
- As long as LAIS processors and GIS professionals are the ones to update the database, they should be offered a stable contract (to be fully employed by the government= RLMUA);
- Training local leaders from the cell level to the district level, on land administration (all transactions and the duties of all employees in this domain), to be capable of helping the population as they do in other domains;
- Training the cell land committee on land administration(all transactions and the duties of all employees in this domain)

4.4.4. Suggestion pertaining to finance

- Reduce transactions fees especially transfer fees and subdivision fees based on the value and location of land;
- Reduce fixed asset taxes and land lease fees;
- To be financially sustainable, to maintain LAIS, and to buy other materials needed, RLMUA need to do some investment;
- Continue the awareness campaign through different means: meetings; Radio; TV; etc to inform the population about the importance of registration of land transactions. Motivate the cell land committee as long as they are volunteers, for instance by paying medical insurance for them omong other way.

4.4.5. Conclusion remarks

This chapter offered results of data collected through semi-structured interviews; focus groups; questionnaires; and secondary sources to attain the objectives and answer the research questions. The main components include the institutions and actors involved directly or indirectly in activity of LAIS updating, the process of LAIS updating shown by the current workflows and their process descriptions, the way these processes are influenced by different factors including organisational, technical, economic, and cultural. Also the role and authority of land notaries, the challenges linked on them, and the way of reporting and registering the changes that happened on the field in to LAIS were presented.

Overall, the results show that RLMUA is in charge of LAIS maintenance, but it is working with the staffs from districts and sectors which are not easy to manage. Different factors are influencing the LAIS updating and differ from urban and rural area. Land notaries authority is regulated by the law but there are many challenges which affect the ability to exercise such authority in reality. The landowners also encounters different challenges by which hinder the reporting of the changes happen on their land. The next chapter will discuss the results in comparison with the literatures.

5.   DISCUSSION

5.1.   Introduction

In the previous chapter, the results of the analysis of the data collected in Rwanda were presented. This chapter, discusses the results of three specific objectives in comparison with the theories from literature. Furthermore, this chapter defines the requirements for an optimised workflow and finally draws an optimised workflows for LAIS updating.

5.2.   Review of current workflow and actors involved in LAIS updating

5.2.1.   Institutions, actors and their role in the process of LAIS updating

According to UNECE; (1996), public institutions should offer its clients a full service covering the entire land administration process, and it could be done through a single decentralised cadastral authority with separate administrative units. This is the case for the Netherlands, the Kadaster with its 15 units; offering the services for land administration to their clients. In the case of Rwanda, this is different; as the activity of LAIS updating is shared between RLMUA, districts and sectors. As described in section 2.2.3 the activity of LIS updating involves different actors. In section 4.2.1 the actors involved in LAIS updating in Rwanda were described with respect to the institutions they work for. It has been revealed that for RLMUA it is challenging to execute its missions because the work of LAIS updating starts at sector (sector land notary) then moves to OSC staff. RLMUA has to approve what has been done by the OSC staff and land notary, who are under the district's management as shown in Figure 5.1 below. Figure 5.1 below shows the broken chain of command between RLMUA, districts and sectors which nevertheless are required to work together in the process of LAIS updating.
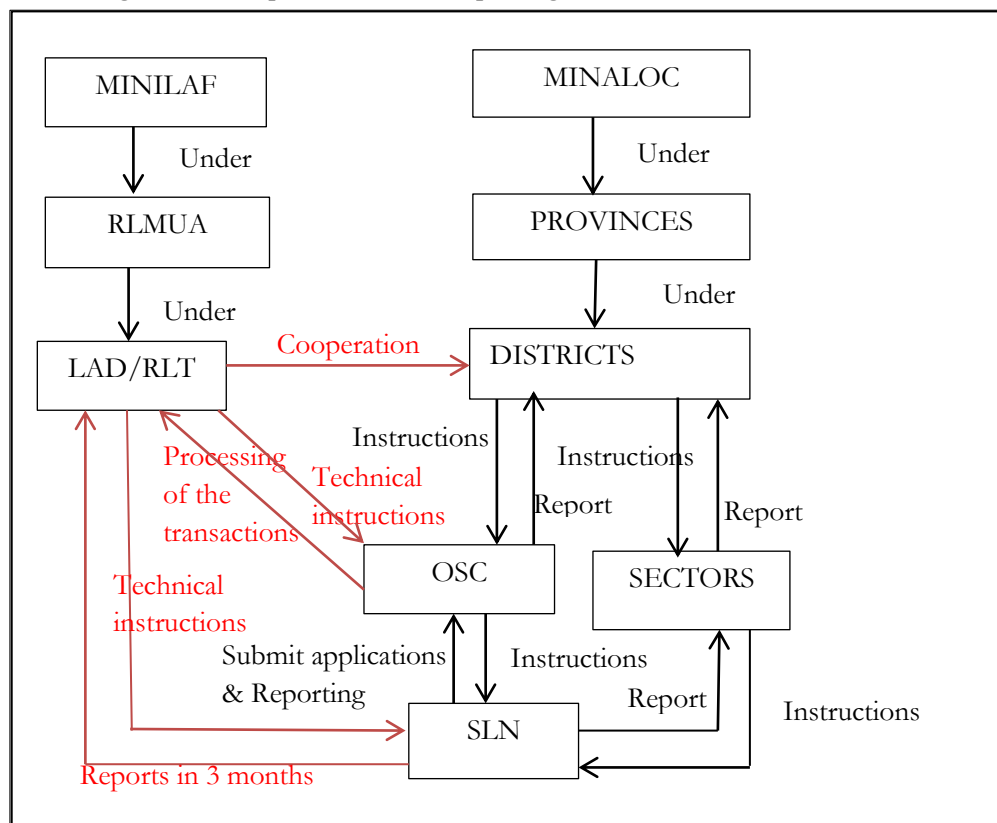

Figure 5.1: Broken chain of command between RLMUA, Districts and Sectors

Figure 5.1 demonstrates how RLMUA has to work with districts, and its unit of One Stop Centre (OSC), and the sectors through the sector land notaries (SLN). The black arrows show the direct way, in which the district give instructions to the OSC as one of the units of the district and the sector which is under the district. SLN is answerable to the sector, and to the unit of OSC. While the left side of the figure shows part of the organisation structure of RLMUA presented in figure 4.1. The red arrows show the indirect way of working together, as RLMUA does not have direct authority over the OSC and SLN, it gives the technical instructions related to the process of LAIS updating. However, SLN has to report to the RLMUA at least once per three months. Also, all processes of LAIS updating start at the sector level, except when the application is made at the district or the office of the registrar of land titles.

According to Enemark et al.; (2014) any organisation in the land sector has to ensure the consciousness and up-to-date skills of staff for fit-for-purpose land administration. According to UNECE; (1996) the managers and staff are the keys to having the excellent land administration. However, in Rwanda, the results show that the number of staff in RLMUA and other institutions working together in land registration is inadequate, especially concerning IT staff. The same findings were revealed by Muyombano; (2014). Also, previous section 4.2.3. Discussed the importance of LAIS processors and GIS professionals for LAIS updating, and the way they are working under contract. Besides that, some of them are at the district level being paid by RLMUA. The question here is: "what will happen when the money from the project ends as long as they are not under the RLMUA or districts ?" What about the training received, and the skills gained during these training if the contract terminated? RLMUA should ensure the stability of these employees.

5.2.2. Current workflow for LAIS updating

DiCaterino et al.; (1997) describe the profits of the introduction of workflow management as an opportunity to improve the process and the existing organisational structure. This is the case for the Netherlands, since 2005 they are using an integrated system which helped them to abolish the regionals (15) registers, after which they designed a system of automated processing of standardised deeds. The added value of this automation is remarkable (Lemmen, Vos, & Beentjes, 2017). For the case of Rwanda, results showed that the workflow for LAIS updating is still complex as it implies many steps and stops and differs from the three possible levels of application (RNRA, 2016). This is the case especially for the process of the workflow for application at the sector level, where the file has to pass through three institutions (Sector-district-RLMUA). Again inside the One-Stop-Centre, there is a long process which even the respondents debated on. The only short workflow relates to the application at the office of the registrar of land titles, where all processes take one day. Unfortunately, this is only for commercial and industrial transfers.

Some respondents revealed that the workflow for application at the district level is not necessary, as long as the services were decentralised to the sector level. The focus should be on the sector to meet the requirements of a customer-oriented service delivery (Biraro et al., 2015). That will help the landowners to report the change that happens on their land without being afraid of a long process as discussed by Biraro (2014). The respondents from different institutions consider the start of the process once all documents required are complete and the landowner applies. However, the preliminary duties for landowners are another challenge to the process of LAIS updating. The landowners pass a long time in other institutions to fulfil the requirements which further delay the process. This also must be taken into account because without their reporting the updates and reliability of the system are at high risk.

5.2.3. Positive and negative factors which influence LAIS updating vis-à-vis the authority of land notary

Magis and Zevenbergen; (2014) said that to develop an operational LIS requires going above and beyond the addressing of the technical, organisation, cultural and economic challenges. They emphasised the importance of the financial means for the LIS sustainability. The same challenges were revealed and

analysed as the factors which influence LAIS updating as described in section 4.2.3, for the case of Rwanda.

Regarding organisational factors, the LAIS is managed by RLMUA in cooperation with districts and sectors and the services are decentralised. The policies and laws, rules and regulations related to the land administration are in place. However, there is a problem of broken chain of command in both contexts (rural and urban areas) as explained in section 5.2.1. Regarding the technical factors, the integration of both spatial and non-spatial information in LAIS, after first land registration in Rwanda is a positive thing. Nevertheless, the results showed different challenges for its maintenance as presented in table 4.1. There is a need for connection between LAIS and other systems like RRA, NIDA, Banks, as also discussed by Biraro (2014).

Concerning economic factors, as Magis and Zevenbergen; (2014), described when citizens or significant parts of society; cannot afford the cost, it can be one for the reasons for the unreliable and unsustainable land administration. Transactions fees and taxation fees should meet the affordability of the user. For the case of Rwanda, different legal provisions about the transaction and taxation fees are in place. However, the results showed that the transaction fees (transfer and subdivision) and taxation fees are high. However, the impact is different for rural and urban areas as presented in table 4.1. Also; Ali et al.;(2017) discovered the unaffordability of the transfer fees in Rwanda. There is also the transport problem to the sector land notaries, especially in the rural areas. They showed interest to be helped by the government to have their car or motorcycle. For the state, the leaders of RLMUA revealed that many challenges are known in this process of LAIS updating, but to solve financial support is necessary. In this regards, they are planning to see how the authority can make some investments.

According to Magis and Zevenbergen (2014), the introduction of land administration means a change in the behavior of the citizens. For the case of Rwanda, the results showed that from a long time ago, Rwandan used to manage their land by using the natural boundaries like trees through customary law. The land registration used general boundaries then the fixed boundaries in the updating period came as the change of behaviour in that regard. Much has been done to make them aware of the importance of reporting the change happening on their land as showed by Muyombano (2014) and Ali et al.;(2017), through the land week campaign organised each year in different parts of the country. However, the state still needs to help the user to understand more, the process and importance of LAIS updating, especially the rural areas. It is recommended that the awareness campaigns be continued, and should also extend to the leaders of different institutions especially the local government. At the end, this will not be more difficult to the government as long as many landowners now are using their land as a mortgage to get the loan. This is inline by what De Soto (2001) emphasised on, that the improvement of the condition of the poor is the recognition of their rights to the land through titling. For Rwanda, this was one of the benefits expected from land registration, and it is the case especially in urban areas.

5.3.   Role and authority of land notary in LAIS updating and challenges linked to them

In the countries where there are notaries in the process of LIS updating, their role is crucial. As Zevenbergen; (2002b), discussed, the presence of the notaries in many countries in the process of the land transfer is necessary. In some countries like the Netherlands, the notaries are independent. For the case of Rwanda, to buy a parcel of land or any other immovable property the presence of land notary is required. All respondents during fieldwork emphasised on the importance of land notaries in the process of LAIS updating as shown in section 4.3.1. The decentralisation of land notaries at the sector level turned out to be a positive strategy in this process. However, the land notaries in Rwanda are public employees, which is different in the Netherlands. About the authority of sector land notaries, the law gives them the authority. Nevertheless, there are many challenges linked to their role and authority as presented in subsection 4.3.3. With this section different variables within seven questions, presented in Figure 4.6 to 4.12, it uncovers

the challenges which hinder the authority of land notaries. Again according to the findings presented in section 4.3.2, the ability to exercise such authority given by the law has some barriers.

The land notaries have to refer to the had copy land certificate when signing the transfer agreements. This is in contradiction with article 37 of the Law no 13bis/2014 of 21/05/2014 Governing the Office of the Notary. Overall there are many challenges, link to the role and authority of land notaries as described in section 4.3.3. But, one which is also, hard is the overloaded duties and responsibilities as presented in a table in appendix 1. The list of responsibilities for the sector land notaries; is very long, it is not easy for one single person to perform well in such a job. Regarding the reporting of the changes and its registration into LAIS, as explained in section 2.2, LIS effectiveness depends on its updates. The transaction process should be simple and comprehensible (Enemark, 2009). The results revealed that, in Rwanda, registration of property and transfers is mandatory by the law. However, the perception of the landowners to the benefits of this, still need more awareness. Again the challenges faced by landowners presented in section 4.3.4, together with those linked to the role and authority of sector land notaries, and the factors presented in subsection 4.2.3, are considered as the obstacles to the landowners not to report all changes happened on their land. These are also the reasons why all changes reported are not registered into LAIS. For the Dutch Kadaster as presented in in appendix 2, the system is reliable as the application is done online, the system is public, and the process between notaries and Kadaster is straightforward. Also, registration of transfer is mandatory, and this has become the habit for all citizens.

In the next section, proposed optimised workflow is presented. First, is the requirements, and then the process description.

5.4. New optimised workflow for LAIS updating

In section 4.2.2 the three current workflows from different levels for LAIS updating in Rwanda were presented. It has been described that the workflows from sector and district level are very long as it is shown in Figure 4.3 and 4.4. In section 4.2.3, different factors influencing LAIS updating, and the challenges linked to the role and authority of land notaries were presented. It has been revealed that they can prevent the landowners from reporting the changes. This section presents a new optimised workflow for LAIS updating, combining the one at the sector and district levels. As long as the sector is under the district, and the sector land notaries are the staff of the districts, no need for the workflow at the district level. Norman, (1996), explains that the requirements specification becomes input to the design of activities. The first subsection is about the requirements design of the new optimised workflow. They are defined based on the literature and suggestions from differents respondents as presented in section 4.4; and the knowledge from the results. The second subsection is about the proposed optimised workflow where the conditions for implementation are presented, and the description of the process.

5.4.1. Requirements design

Norman, (1996), stated that the aim of gathering requirements is to define exactly what the users want and what they do not want. Regarding this research, the requirements design for the proposed workflow is defined based on the suggestions given by landowners, land notaries, and districts officials. But also, the factors influencing LAIS updating and the challenges linked to the role and authority of sector land notaries presented in the previous chapter. Table 5.1 below presents the defined requirements for an optimised workflow.

Table 5.1: Requirements design for optimised workflow

Characteristics	Challenges	Requirements
Concerning landowners	- Long time for preliminaries duties	- Some documents like identity copy, marriage certificate, proof of tax payment, should be seen through the integrated systems to minimise the number of documents to be submitted;
	- Visiting the sector many times	- Landowners should visit the sector two times or three times if he/she needs the printed land certificate;
Concerning Sector land notaries services delivery	- Lack of access to LAIS	- SLN should have access to LAIS to permit a suitable check before signing the agreements of transfer and submitting the application online by booking and attaching the triggering documents; - The application at the district level should be removed; the application can only be done at the sector level.
	- Long process for LAIS updating and - Lack of the transport to the SLN	- Many services should be located at the sector level to allow the SLN to be aware of all processes and provide the landowners with all necessary information at any time; - The number of actors involved should be reduced (only SLN-LAIS processor-Registrar); - The sector land notaries should submit the application files online, and store the hard copy; - Printing on request should be done to the sector level; - SLN should go to the district when he/she is needed,
	- Overloaded duties	-Other responsibilities allocated to the SLN should be removed
Concerning sharing information	- User access to LAIS	- Landowner should have access to view the information through the LAIS website, not by using short message service by phone; - The level of access to LAIS should be different for different users to protect the data.
Concerning IREMBO and Banks services	- Declaration purpose	- Each sector should have Irembo's agent at the office, and the services should be free;
	-Payments	- Banks should have agents at the office of each sector.

5.4.2. Proposed optimised workflow for LAIS updating

The proposed optimised workflow involves both existing workflows for the application at the sector level and the district level. It is proposed based on the requirements design which was defined in a way that they will remove the challenges presented. It has been explained that the services of LAIS updating are decentralised. Again in the rural area, some sector do not have electricity, and some sectors in urban and rural areas do not have internet. For that, some work is requested to be done by RLMUA in cooperation with other concerned government institutions before implementing the new optimised workflow.

1) **Conditions for the implementation of the optimised workflow**

- All sectors should be connected to electricity in the whole country;
- All sectors should be connected to internet in the whole country;
- Decentralisation of LAIS to the sector level;
- Bring printers and other needed materials to be able to print the certificate on demand at the Sector level;
- After approval of the transfer of rights, online notification to the new landowner, without printing the hardcopy land certificate unless to those on request. This will minimise the budget of printing.
- Further inter-connection of LAIS with other systems. In this regard, Biraro (2014) proposed the interconnection of the system, some have been connected, but improvement is needed on the following:

I.   **NIDA (National Identification Agency):** refers to the data of identity cards of all Rwandans from 16 years and older. The ID number is needed when registering the land. Its copy should not be part of requirements to be brought by the landowners. The ID number should be written on the transfer agreements. For confirmation, the land notaries and professionals should have to check with NIDA. Furthermore, NIDA should provide other information about marital status so that marital certificates would no longer be required to the landowners;

II. **Rwanda Revenue Authority(RRA):** is using the LAIS database for taxation purposes, but landowners claim that the information of RRA is not up-to-date. Again RLMUA, Districts, sectors cannot access the RRA database; this should be done to help in checking if the taxes are paid or not.

III. **Irembo (e-governments):** this platform is used for many government services, including land services. However, it still needs some improvements vis-à-vis how the landowners and the sector land notaries how to use it. It is creating some confusion when sending the message that the application is approved while it is not even submitted to the district.

IV. **Banks:** can access LAIS information through RDB but, in delivering land services, but still customers are required to bling bank slip! E-payment should help land notaries to check if the transaction is paid.

After the condition for the implementation of the proposed workflow, the following are the description of steps by which the transfer of rights will pass by, to be registered into LAIS.

2) **Description of the process**

Application: landowner has to check information about the requirements online through RLMUA or IREMBO website, or in case he/she can not access the internet, visit the sector for information. He/she has to apply for appointment through IREMBO and go to the sector for application where he/she has to start by declaration and payment of transfer fees at the same place (from one official to another). After which they will go to the sector land notary for signing the transfer agreements.

Agreement of transfer: the sector land notary will have to receive the landowners (buyer/seller), check the identification and other requirements and if everything is ok, prepare the transfer agreement, after which the parties will sign in his/her presence. After the signature of parties, the sector land notary will have to sign the transfer agreement; and receive the application file.

Book the application: After receiving the application file, the sector land notary will book the application file on the parcel and attach all triggering documents under LAIS(online submission of application). The sector land notary will have to archive the hard copy of the application file;

Processing: once the application file is booked and attached, the LAIS processor will check electronically if all requirements are complete, then accept and process the application file. If any documents are missing the LAIS processor will inform the sector land notary for completion.

Approval: after processing the application, the registrar of land titles will check if it has to be approved or if there is a need for refinement. If refinement is required, it will be returned to the sector land notary.

Issuance: After approval, the buyer and seller will be informed of the registered transfer. Only on request of the buyer, the land certificate will be printed and issued at the sector level.

3) Proposed optimised workflow for LAIS updating
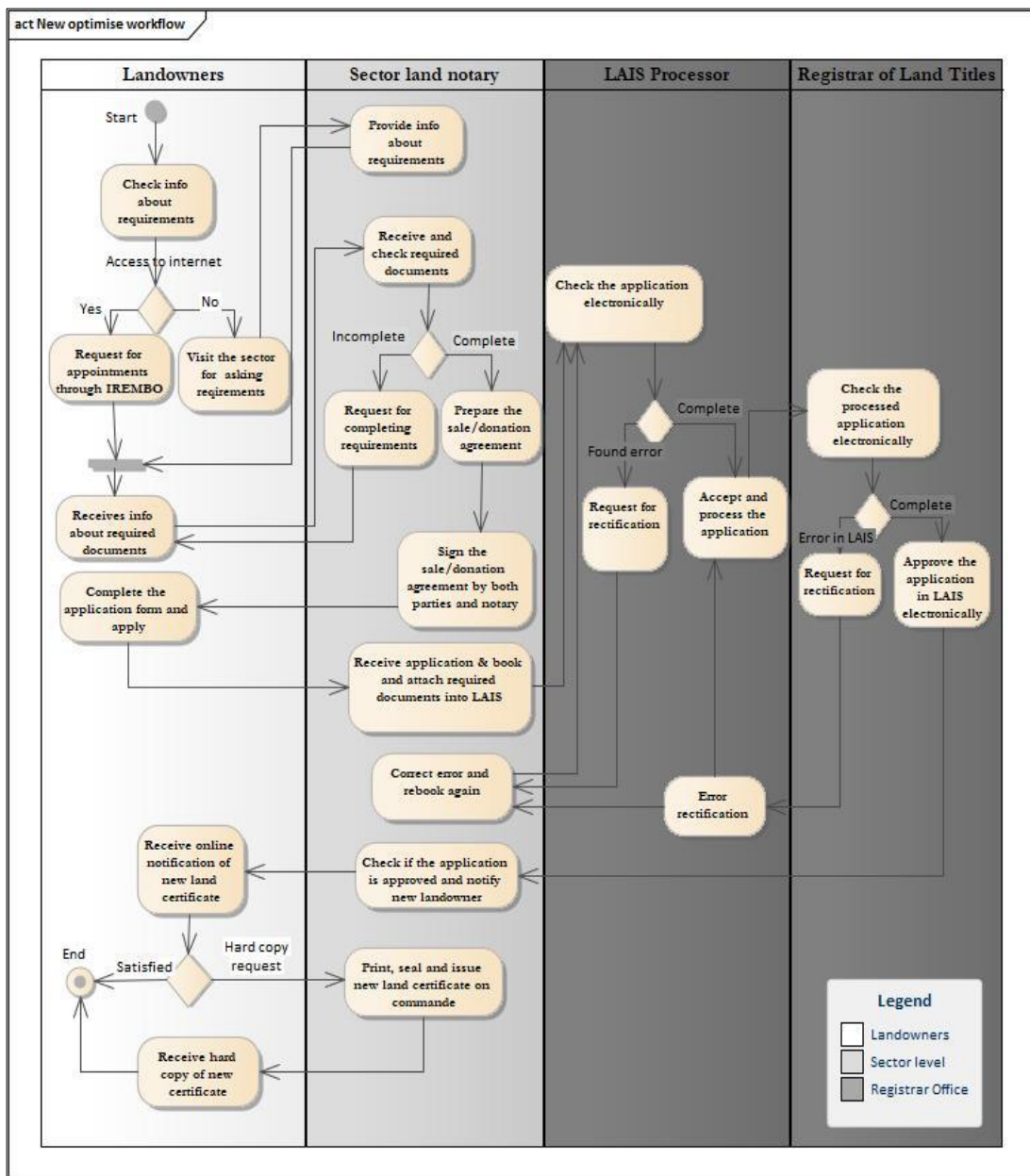
Figure 5.2: Proposed optimised workflow for LAIS updating

4) Benefits of proposed optimised workflow for LAIS updating

The proposed optimised workflow for applications at the sector level will bring some benefits to the landowners, sector land notaries and the state. Table 7 below present the benefits of proposed workflow compare to the current workflow:

Table 5.2: Benefits of proposed optimised workflow

Current workflow	Proposed optimised workflow
- Complex (long process and many actors)	- Simple (short process and fewer actors)
- Three institutions and landowners involved	- Two institutions and landowners involved
- Seven actors involved	- Four actors involved
- Physical submission to the district by the land notary	- Online submission
- Transport problem for submission to the land notary	- No need to travel
- Risk to be involved in the court as there is no link to LAIS	- Access to the LAIS and booking the parcel
- Preliminaries duties for the landowners at different offices	- All services in the same place
- Dispute between buyer and seller from transaction	- No dispute from the transaction
- Landowners visit the sector many times(five)	- Landowners visit the sector fewer times (two)
- Cost to the state for printing	- Printing only on request
- Transport to the LAIS processor to the RLMUA for printing	- Printing on demand at the sector office

5.5.   Conclusion remarks

This chapter discussed the results of the data evaluated about the existing literature. The discussion specified that there is a broken chain of command between RLMUA, districts and sectors. Also, the number of staff is inadequate. The current workflow for application at the sector and district levels is more complex compared to what is identified in the literature. From these challenges identified and the suggestions given by different respondents, the requirements for an optimised workflow were defined, and the optimised workflow is proposed. The optimised workflow is combining the workflow of the application at the sector and district levels. The conditions for implementation of the proposed workflow were discussed. Among others, the connection of the electricity and internet in the whole country, and the decentralisation of LAIS at the sector level. Also, the benefits which the proposed workflow will bring were discussed. For instance, the simplicity of the workflow due to the short process and fewer actors, to get the services at the same place by landowners. The next chapter will present the conclusion and recommendations based on this research.

6.   CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions of this research by describing the findings on the main objective and three specific objectives presented in Table 1.1. Furthermore, it presents the recommendations on how the proposed optimised workflow for LAIS updating can be implemented and recommendations for further research on this matter.

6.1.   Conclusions

The main objective of this research aimed to explore the challenges in the process of LAIS updating vis-à-vis the role and authority of land notaries and to conceptualise a new optimised workflow in Rwanda. The findings allow us to conclude that the process of land registration for LAIS updating in Rwanda is implemented. However, some challenges remain, which presents a hurdle for the landowners to report the changes happened on their lands. These include challenges linked to the role and authority of land notaries. The conclusions are given below, through three specific objectives used to achieve the main objective.

Specific-objective 1: ***To review the current workflows and actors involved in LAIS updating in Rwanda***

The first question here was: "*what are the actors and their roles in LAIS updating process?*" Based on different secondary data analysed, as presented in section 4.2.1, different institutions and actors involved in LAIS updating and their tasks in that process were identified. It is shown that RLMUA is responsible for the process of LAIS updating, which includes actors from the districts under the unit of OSC and the sector (SLN) who are not controlled by RLMUA. This broken chain of command is one of the challenges which is a hurdle to the process of LAIS updating, and the recommendation on this challenge is given in section 6.2.1. Also, the landowners (buyer/seller and donor/receiver) were identified as the centre of activity for LAIS updating, as without them to apply for the transaction, there is no LAIS updating.

The second question was: "*what are the processes of LAIS updating in Rwanda?*" To answer this question, three workflows of LAIS updating are presented. These are the current workflow for application at the sector level (Figure 4.4); current workflow for application at the district level (Figure4.3); and the current workflow for application at the office of registrar of land titles (Figure 4.5). Each workflow is constructed based on the information given by different respondents. The current workflow of applying at the office of the registrar of land titles is straightforward. However, it is not favourable to all applicants. Only for the commercial and industrial purpose to facilitate doing business. The workflow from sector level is long, which is not optimal. It is applicable for many applicants for the simple reason that the sector is located near the landowners. The workflow from district level resembles the one from sector level. For both application levels, there are many actors who make the workflows more complex. The long process and complexity in the current workflows are one of the main challenges for LAIS updating.

The last question for this specific-objective was: "*What are the factors (positive or negative) influencing LAIS updating?*" The results revealed organisational, technical, cultural, and economic factors. It is observed that all factors can influence LAIS updating on both sides (landowners or state) either positively or negatively. For organisational factors, much has been done by the government of Rwanda in the process of maintaining the LAIS. This is justified by the land policy and different land related laws, rules and

regulations which have been adopted. However, as shown in the first question the answerability of the actors from the district, and sector level to the RLMUA in the process of LAIS updating, need to be improved. Not that there is no distinction between the urban and rural area for organisational factors. Regarding technical factors, the problem of electricity and internet connection remain in some sectors especially in rural areas. On the other hand, the establishment of LAIS itself by the government of Rwanda, is a big achievement. However, for its effective the remains challenges discussed in section 5.2.3 and 5.3 need to be resolved. Among others, the lack of access to the LAIS by land notaries. Another positive achievement is that the land notaries were claiming the help of the government to have their transport now 120 between 416, have been given motorcycles. This will continue for the rest of the land notaries in next two years. For economic factors, the remain challenges are about the transaction and taxation fees which shown to be high. For cultural factors, the challenges are about the perception of the respondents about the land administration in its component of land registration. It has been shown that it is a change of behaviour of the citizen of Rwanda which requires awareness campaign to continue. However, it has been shown also that it will not be very difficult as long as landowners are using their land titles for a mortgage to have the loan from the Bank. To end this question, different suggestions for resolving these challenges are given in section 6.2.

Specific-objective 2: To identify the role and authority of land notary in LAIS updating

The first question was: *"what are the roles and authority of land notary in the process of LAIS updating?"* To answer this question, the primary data from interviews and focus groups and the secondary data were used. The results show that the sector land notaries have a crucial role in the process of LAIS updating. Also by law, the land notaries have certain authority. However, the findings revealed that the ability to exercise such authority depends on what is inside the LAIS. It means that when there is a dispute (annotation) in the database (LAIS), even though the land notary has approved the transfer agreement, no change can be registered in LAIS unless there is a court decision. To resolve this problem, e-Government (IREMBO) has been given the authority to do not allow any declaration on the parcel under dispute or mortgage. The result is that when there is no declaration of the transaction the payment is not possible. Moreover, without payment, no transfer agreement can be signed as the payment slip is one of the required documents for the transfer of rights. However, this is not a complete solution, as the day of declaration can differ with the day of transfer agreement approval. Within this interval, other change may happen into the LAIS, and the sector land notary will not be aware of that, which means a transfer agreement will be signed. The solution suggested in this regard is to provide the sector land notaries with access to the LAIS.

The second question was *"what are the challenges linked to the role and Authority of a land notary?"* The results revealed that there are different challenges linked to the role and authority of land notary. The first one is the hierarchy of institutions in the process of LAIS updating. Land notaries should be under RLMUA, not under local authority (districts and sectors). Many challenges linked to the role and authority of land notaries are discussed in section 5.3. However, the lack of access to the LAIS, the use of had copy in the process of transfer of rights, and overloaded of duties are the most important ones. Many of these challenges are known by RLMUA, but they lack financial means to resolve them. Investments and collaboration with other institutions to resolve them are recommended.

The last question for this objective was: *Are all changes reported and registered into LAIS on time? If not, why?"* The results revealed that the answer is no. Different reasons have been given as presented in section 4.2.3, 4.3.3, and 4.3.4. It is observed that not only the transaction and taxation fees are high, the way the verification of tax payment is done after the transfer agreement signed is not optimal as well. In order to facilitate the reporting of the changes happening on the field, RRA should take the measures to push the

taxpayers to pay on time. This will help the taxpayers as the taxation fees will not have to be cumulative which become difficult to pay especialy when they need to transfer their land.

Specific-objective 3: To propose an optimised workflow based on role and authority of land notary in LAIS updating

To attend this objective, two questions were to be answered: "*what are the suggestions on the role and authority of land notaries from the point of view of the landowners, land notaries themselves, district official and the registrars for accelerated LAIS updating?*" and "*what is the new simplified workflow based on the suggestions from the actors identified (landowners, land notaries themselves, district official and the registrars)?*" Based on the suggestions from different respondents, and the knowledge acquired from section 4.3.2 and 4.3.3, the requirements for the simplified workflow are defined. Finally, an optimised workflow combining the workflow application to the sector and district level has been designed. The new optimised workflow will bring many profits compared to others. The proposed workflow will be simple as it will involve fewer actors and shorter processes. For the sector land notaries, the submission will be done online; there is no longer a need to go to the district for submission. The printing will be done only on demand. Otherwise the online notification to the landowners will be sufficient. This will encourage the landowners to report the changes happening on their land without being scared of the long process. However, for the proposed optimised workflow to be implemented, there are some conditions listed in section 5.4.2 and discussed as recommendations in the next section.

6.2. Recommendations

In observation of the conclusion above, this section presents some recommendations for the implementation of the proposed optimised workflow. These recommendations are listed under different factors, and they are given to the government of Rwanda. However, other countries in transition can adapt these recommendations to their context. It is the responsibility of RLMUA to follow the implementation of the recommendations given to different concerned institutions. This recommandation are as follow:

6.2.1. Regarding organisational factors
➢ To establish one institution subdivided into different offices and units located throughout the country to perform the activity of land information system updating. This will resolve the problem of the broken chain of command discussed in section 5.2.1;
➢ Release sector land notaries from other responsibilities regarding infrastructure and community settlements.

6.2.2. Regarding technical factors
➢ The recommendations on this factors were given on the condition for implementation of the optimised workflow in section 5.4.1. They mainly relate to connection to electricity and internet, and the LAIS access to the land notaries.

6.2.3. Regarding economic factors
➢ Establish taxation fees, based on the capacity of the taxpayers, and put in place the measures to encourage them to pay on time.

➢ Transaction fees have to be based on the value and location of the land parcel and should be different between urban and rural areas;

➢ For the RLMUA to be financial sufficient, and to be able to maintain the system and resolve other problems presented in the process of LAIS updating, RLMUA needs to invest more in updating.

6.2.4. Regarding cultural factors

➢ Continue the awareness campaigns, to let all Rwandans understand the land administration procedures and the benefits of updating the land information system. This can be done through meetings, TV and Radio among other publicity media.

6.2.5. Recommendations for further research

➢ This study focuses only on the process of LAIS updating regarding transfers of rights by sale and donation. There are many transactions in the process of LAIS updating. Further research can be conducted on the transfer of rights by succession. Also, another transaction which merits a study is to investigate about adding annotations in LAIS, and its impact on any third party.

➢ Regarding the land notaries, in Rwanda, all land notaries now are public employees. However, the law allows for private notaries. Therefore, further research can study how the private land notaries can help to improve the process of LAIS updating;

➢ As it is now, only the land parcels are registered in Rwanda; another research is needed to see if this has led to the improvement of the registration of land and buildings which can also be registered as it is the case in the Netherlands. In the Rwandese case, it is difficult to differentiate between the land itself and the buildings on it, like in case of registering condominium.

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LIST OF APPENDICES

Appendix 1: Institutions and actors involved in LAIS updating and their duties

Institution/actors	Duties for different transactions including transfer of rights
RLMUA	To implement national policies, laws, strategies, regulations and Government resolutions related to the management and use of land; To register land, issue and keep authentic land deeds and any other information relating to land of Rwanda; To issue technical instructions related to land management and use to district land bureaux (One-Stop-Centre) and follow up their implementation; To resolve conflicts relating to land use and management which were not resolved at the District or City of Kigali levels.
RDB	To register mortgage; To deregister mortgage.
RRA	To inform the landowners about fixed asset taxes and land lease fees To prepare the landowners for fixed asset taxes To help landowners for fixed asset taxes and land lease fees declaration To notify the landowners regarding fixed asset taxes or land lease fees after payment To recover the taxes if necessary
IREMBO	Transfer fees are declared through Irembo website Other required documents are declared through Irembo Application online and get the appointments to the Land Notary
DISTRICTS	Landowners can take their applications at the district The agreement of sale/donation can be signed at this stage also A big part of processing of the LAIS updating is done from district Make the population aware of different transactions and asset taxes or land lease fees in different meetings To resolve conflicts relating to the land use and management
Sector land notary (Land infrastructure, habitat and community settlement)	Provide land-related notary services to service seekers as per the competencies set forth by the law; Implement District's strategies and programs on land and infrastructure in conformity with existing national policy, rules and regulations; Avail necessary data for the issuance of land titles and constitute a database of used and unused land in the sector; Identify infrastructure facilities needs at the Sector level and report them to competent authorities; Follow up on activities related to infrastructure works in the sector; Implement the district habitat and community settlement plan in conformity with existing rules and regulations; Advise on settlement programmes, development and implementation in the sector in conformity with the district' strategy and national policies; Receive and examine application files for construction and deliver authorization for the rehabilitation of infrastructure; Prepare to build rehabilitation permits to be issued by the sector and closely inspect the implementation of the settlement plan Supervise the implementation of strategies and mobilisation mechanisms of local population for domestic national biogas and improved cookstoves Program at sector level; Organise, in collaboration with relevant stakeholders, rescue and social assistance of

	victims of disasters at sector level; Provide necessary data for the functioning of National Eary Warning and disaster Monitoring Information systems; Work with specialized organisations to organize session of disaster simulation and rescue of people; Organize and conduct campaigns meant to raise local population awareness on preparedness for disaster and its management.
CELLS	At this level, there are five (5) cell land committees who help in different transactions: To confirm holders of land rights during the first land registration and provide information during the issuance of land certificate; To sensitize population to register any change on the already recorded information in land registry; To register and to list escheat land and vacant land; To provide information on non-registered State land or State land registered on an individual basis; To send to the land committee at Sector level any issue relating to conflict of interest between some committee members to the extent that the remaining members cannot reach the required quorum.
LANDOWNERS	Reporting the legal changes relating to their land Pay the fixed asset taxes and land lease fees

Appendix 2: Dutch Kadaster System

Introduction

Dutch System started in 1800 by Napoleon, and it is a deed system. In 1830 the Dutch cadastre employees started to copy all the deeds by hand in one book called "Legger". From 1950, the notaries were in charge of preparing the deeds, and offer the copy to the Kadaster. It is only from 1986-1988; they have registration system which is the result of the conversion of information which was written in Leggers. The Registrar revealed that the Dutch system is Semi-Title, which means that it can deviate from the legal status of a property. However, the registered person is recognised as legally entitled. Dutch Kadaster registrar is reliable because it is mandatory to register the deeds for the transfer.

Actors in Kadaster updating system

The Kadaster updating system involves different actors including Notaries, Registrars, Buyer, Seller, and Banks just to list some. The Registrars are 9 in total, and all of them are based at the head office. There is also 500 Staff who is in charge of updating the Kadaster, based in 15 different offices of the Kadaster. The notaries are around 1300. All actors have as their territorial competence the whole country.

Kadaster updating process

The update can concern different transaction, but this sub-section is discussing the transfer of property as mentioned in subsection 2.2.2, from 2005 Dutch Kadaster has integrated workflow management, which made the process efficient and flexible. All deeds are entered with the related data into the Cadastre registration. The database is integrated into one central land register, and all deeds are stored in it (Lemmen et al., 2017). From the interview with the notary she revealed that, when someone needs to sell his/her property, he/she will visit the real estate company to meet the interested person to buy the property. Once they meet (seller and buyer), they agree on the transfer of the property and make the first draft with the real estate. However, some transaction can happen without Real Estate Company. After this stage, they will visit the notary who has to make his/her investigation on the seller. Once the notary is sure that the seller is the proprietor and everything is ok with the person and parcel, he/she will prepare the deed, and send it to the Kadaster where they will check the deed on registration terms. When all requirements are complete, the deed will be registered, and the notary receives a confirmation. It is only after registering the deed where the notary will pay the money to the seller which was deposit on his/ her account by the buyer. In many cases, the buyer looks for the loan at the Bank to buy the house, and many houses subject to the transfer are under Mortgage. That is the reason why the Notary will have to check the mortgage before preparing the deed. The transfer money is buyer's responsibility, and it is paid in advance to the notary. Once the deed is registered the buyer and seller will receive the notification from Kadaster. Note that the Notaries do not need to submit the hard copy documents; they apply through the special software on their computers and a digital signature which they sign the deeds. Automatically the application is seen in the central register and can be seen and done by each Registrar's staff within 15 offices of Kadaster. The figure below shows the summary of the transfer process.
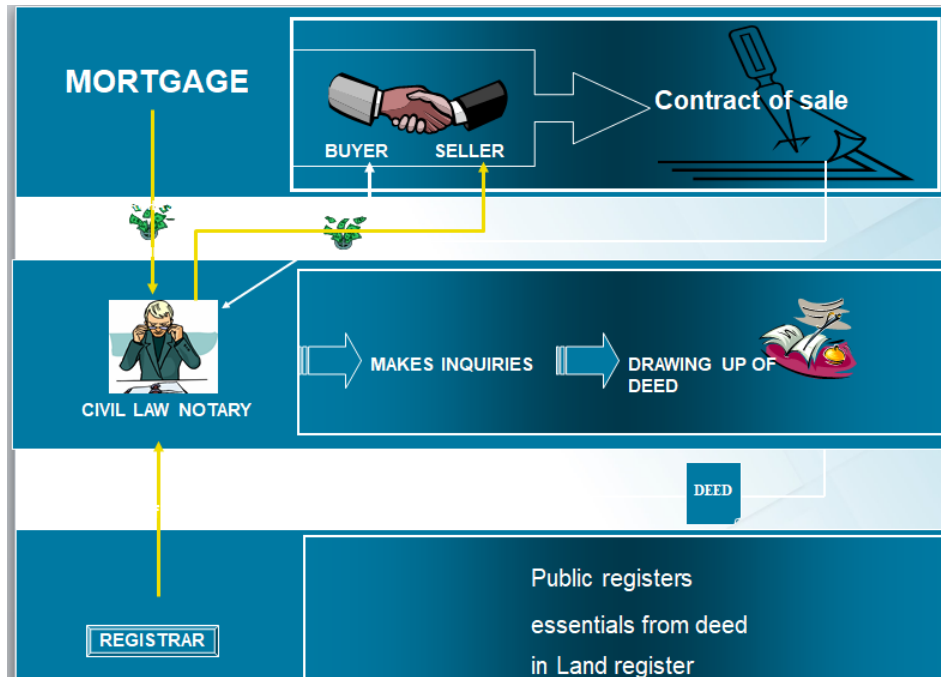
Process updating Dutch Kadaster on transfer of property

Role and authority of notary in the process of Kadaster updating

The King appoints the notaries in the Netherlands, and they are the independent Lawyers. The notaries in the Netherlands play essential roles in the process of transfer of property as described above. They are active, and they are working for both parties(buyer, seller and the banks) in the process. They are working closely with Dutch Kadaster, and the Banks as 90% of transactions are under the mortgage in the Netherlands. About the authority, the fact that they are independent lawyers gives them the authority on what they do. On an interview with the notary, she said that the notaries in the Netherlands have authority as they are working with the Kadaster hand in hand, and they are accountable for what they do. That is why they have to make an investigation before signing any deed which is the reason why the Kadaster does not reject the signed deeds except in case there is a typo. If the notary has a problem during the investigation, he/she can call at the Kadaster looking for the advice on the issue. The notary revealed that the only problem they have when excessing their responsibility is the problem of price competition between them, as there is no standard price, each one sets the price of his/her choice. Lemmen, Vos, & Beentjes,(2017), agree with the notary Zomer, they mentioned that from 2005 Dutch Kadaster receives ninety-eight percent of the deeds electronically, and the templates are drafted in close cooperation with the notaries. They also mentioned the resistance of the notaries on that regards in the first time and the way that they are asking more possibilities within the existing templates.

Appendix 3: Semi-structured interview guide (RLMUA)

Specific-objective	Research questions	Key words	Interview questions
To review the current workflow and actors involved in updating LAIS in Rwanda	What are the factors (positive or negative) influencing the updating of LAIS?	Factors	1. What are the factors influencing the LAIS updating from your point of view?
To identify the role and authority of land notary in LAIS updating	What are the role and authority of land notary in the process of updating LAIS? What are issues linked with land notary authority in LAIS updating? Are all changes reported and registered in LAIS on time? if not, why?	Land notary role and authority	2. From your point of view what is the role of land notary in the process of LAIS updating? 3. What are the specific tasks that land notaries are responsible for? 4. What are land notaries held accountable for mostly? 5. What are the main challenges land notaries faces in fulfilling their responsibilities?
To propose an optimized workflow based on authority and role of land notary in LAIS updating	What are suggestions on role and authority of land notaries from the point of views of the landowners, land notaries themselves, the Registrars for accelerated LAIS updating? What is the new simplified workflow based on suggestions	Suggestion for optimised workflow	6. How the LAIS updating workflow look like? 7. What are your suggestions for ameliorating the situation and for optimised workflow? 8. Is there any plan to do so? 9. Do you have any additional information which you need to share with me?

Appendix 4: Semi-structured interview guide (districts officials)

Specific-objective	Research questions	Key words	Interview questions
To review the current workflow and actors involved in updating LAIS in Rwanda	What are the factors (positive or negative) influencing the updating of LAIS?	Factors influencing LAIS	1. What are the factors influencing the LAIS updating from your point of view?
To identify the role and authority of land notary in LAIS updating	What are the role and authority of land notary in the process of updating LAIS? What are issues linked with land notary authority in LAIS updating? Are all changes reported and registered in LAIS on time? if not, why?	Land notary role and authority	1. From your point of view what is the role of land notary in the process of LAIS updating? 2. Tell me about the complementarity between land notary and district level in the process of LAIS updating? 3. Can you tell me about the issues do you face in fulfilling your duties related to the role of land notary in the process of LAIS updating and their causes? 4. Are all application submitted by land notary to the district effected into LAIS?
To propose an optimized workflow based on authority and role of land notary in LAIS updating	What are suggestions on role and authority of land notaries from the point of views of the landowners, land notaries themselves, the Registrars for accelerated LAIS updating? What is the new simplified workflow based on suggestions	Suggestion for optimised workflow	1. What are your suggestions as solutions to the issues we discussed? 2. Let us discuss about the workflow for LAIS updating, how do you see it? 3. Do you have any additional information which you need to share with me?

Appendix 5: Semi-structured interview guide (Sector land notaries)

Specific-objective	Research questions	Key words	Interview questions
To review the current workflow and actors involved in updating LAIS in Rwanda	What are the factors (positive or negative) influencing the updating of LAIS?	Factors influencing LAIS	1. What are the factors influencing the LAIS updating from your point of view?
To identify the role and authority of land notary in LAIS updating	What are the role and authority of land notary in the process of updating LAIS? What are issues linked with land notary authority in LAIS updating? Are all changes reported and registered in LAIS on time? if not, why?	Land notary role and authority	2. What are the problems do you face when exercising your responsibility related to your quality of being land notary? 3. Can you please tell me about all process of receiving the application from landowners till the production of a new land title? 4. Can you give me the number of applications you submitted at the district and the number of those affected into LAIS?
To propose an optimized workflow based on authority and role of land notary in LAIS updating	What are suggestions on role and authority of land notaries from the point of views of the landowners, land notaries themselves, the Registrars for accelerated LAIS updating? What is the new simplified workflow based on suggestions	Suggestion for optimised workflow	5. What can you tell me about the institutions you are working together in the process of LAIS updating? 6. How do you manage to be intermediate between landowners and the district? 7. Do you have any suggestions to the process of LAIS updating link to your responsibility? 8. Do you have any additional information which you need to share with me related to your responsibilities and authority?

Appendix 6: Focus groups guide (sector land notary)

Specific-objective	Research questions	Key words	Interview questions
To review the current workflow and actors involved in updating LAIS in Rwanda	What are the factors (positive or negative) influencing the updating of LAIS?	Factors influencing LAIS	1. Discuss about the factors(positives or negatives) which can influence the LAIS updating
To identify the role and authority of land notary in LAIS updating	What are the role and authority of land notary in the process of updating LAIS? What are issues linked with land notary authority in LAIS updating? Are all changes reported and registered in LAIS on time? if not, why?	Land notary role and authority	2. Can you discuss about your working experience in general as a land notary? 3. What can you say about you're your responsibility of being a land notary, especially in exercising the transfer of ownership? 4. Discuss about the problems you face when exercising your responsibility in the process of LAIS updating
To propose an optimized workflow based on authority and role of land notary in LAIS updating	What are suggestions on role and authority of land notaries from the point of views of the landowners, land notaries themselves, the Registrars for accelerated LAIS updating? What is the new simplified workflow based on suggestions	Suggestion for optimised workflow	5. Discuss about the complementarity of institutions you are working together in the process of LAIS updating? 6. From all your discussion about the process of LAIS updating and the problems which you face when exercising your responsibility, can you discuss about the possible solutions to the problems you identified? 7. This your time to discuss any other additional information you judge necessary to optimize the workflow for LAIS updating

Appendix 7: Semi-structured interview guide (landowners)

Specific-objective	Research questions	Key words	Interview questions
To review the current workflow and actors involved in updating LAIS in Rwanda	What are the factors (positive or negative) influencing the updating of LAIS?	Factors	1. What are the requirement do you have to fulfil in order to get to the sector land notary for your application? 2. From your neighbours experiences how long it take to get a new land title after applying?
To identify the role and authority of land notary in LAIS updating	What are the role and authority of land notary in the process of updating LAIS? What are issues linked with land notary authority in LAIS updating? Are all changes reported and registered in LAIS on time? If not, why?	Land notary role and authority	3. What do you think about the service delivery in the process of reporting the change happened in your land? 4. What are the problems do you face during the process of application? 5. Can you tell me about the procedure of payment and total cost for transfer of ownership?
To propose an optimized workflow based on authority and role of land notary in LAIS updating	What are suggestions on role and authority of land notaries from the point of views of the landowners, land notaries themselves, the Registrars for accelerated LAIS updating? What is the new simplified workflow based on suggestions	Suggestion for optimised workflow	6. Do you think all change happened in your neighbourhood are all reported? Explain your answer. 7. What can you suggest as solutions to all the issues discussed above in order to deliver you the good services? 8. Do you have any other information which you need to share with me?

LAND TRANSFER CONTRACT

I, (we) …………………………………………………..

Identification Number:

Legally married[1] to: …………………………………

Identification Number:

Registered at Physical Address:
- District: …………………..
- Sector: ……………………
- Cell: ………………………
- Village: ……………………

In consideration of the payment of transfer fees equivalent to twenty thousand Rwandan Francs (20,000 RWF), as shown on attached receipt number ………….., and payment of service fees equivalent to ten thousand Rwanda Francs (10,000Rwf), as shown on attached receipt number ………….

I (we) have sold to

Mr ……………………………………………………

Identification Number:

Legally married[2] to: ………………………………………..

Identification Number:

Registered at Physical Address:
- District: ………………….
- Sector:…………………………
- Cell: ……………………..
- Village: ……………………

---

[1] *This depends on marital status or marriage contract*
[2] *This depends on marital status or marriage contract*

Details of the land in Question:

- UPI**: ..../......./......./........**
- Land Use:
- Location of the Land: The City of Kigali, District:..............., Sector: ....,
  Cell: ...., Village: ....

The Seller(s) agree(s) that the land and development over land being sold is (are) hers/theirs and that it is being sold for the total amount of ...., which include .... As value of the land and ....as the value of the development over land (building, crops, others).

Attached to this contract are all the identification papers of the land which are also proof of ownership.

Signed on: **........./........./............**

Seller(s):

1.   .... Signature:...............................

2.   .... Signature: ....

Buyer(s):

1.   .... Signature:...............................

2.   .... Signature: ....

FOR OFFICIAL USE ONLY

We, (name of the notary and the institution under which is working) certifies that the contract written above was brought to us on; **Year ...., Day,**.......... **Month of ....** and that this contract fulfils all conditions required by the sellers and the buyer for the transfer of land and that transfer fees and service fees equivalent thirty thousand Rwandan Francs (30,000Rwf) has been paid.

We also acknowledge their above identities and signatures.

Number: **..........**, Dated on **Year 2015, day ....; ....**

_____

Name of the notary

Appendix 8(b): Application form for transfer of rights on a parcel by sale

FORM 4

APPLICATION FORM FOR TRANSFER OF RIGHTS ON A PARCEL BY SALE
Person information
I/We:………………………………………………………………………………………………………

Status:………………………………………………………………………………………………........
ID/Passport:…………………………………………………………………………………………………
……………………………………
Address:……………..…District……...………………Sector……………......……Cell…………........…Village
Telephone number: …………………………………………... E-mail: ………………………………………

OR
Company/NGO/Professional
association/Church/Cooperative/Other:………………………………………………………..
I   (authorised
representative): …………………………………………………………………….................................
....
ID/Passport:…………………………………………………………………………………………………
…………………………………………
Address:……………..…District……...……………Sector……………......…Cell…………….........…Village
Telephone number: …………………………………………... E-mail: ………………………………………

Kindly request for transfer of rights on a parcel by sale
Parcel information
UPI: ……………………………………..
City of Kigali/Province:……………………………………..
District: ……………………………………..
Sector: ……………………………………….
Cell: ……………………………………….
Buyer (Transferee) information:
Names: ……………………………………………………………………………………………………
……...
ID/Passport: ……………………………………………………………………………………………….
Address:………………………………………………………………………………………………………
Postal address: ……………………………………………………………………………………………...
Telephone number: …………………………….. E-mail: ………………………………………………...

Additional information on the request for transfer of rights by sale:
……
Required documents for the transaction

Proof of identity of the Buyer (Transferee)	
Notarised sale agreement, signed by registered parties	
Land documents for the parcel to be sold[3]	
Notarised Memorandum of Association indicating shares of every shareholder, in case among persons to be registered there are foreigners and Rwandans co-owning land or a company business company, an organisation or association with legal personality in which foreigners are shareholders	

…………………………..   ……………………………………………………………………………

Date of Application   Signature of the applicant(s)

Received and verified by: ……………………………………………
Date: ……………………………………………………………
Signature: ………………………… Stamp

Questionnaires guide to the sector land notary

I'm Marie Chantal MUKAGASHUGI, a student at University of Twente, Faculty of Geo-Information Science and Earth Observation. I'm doing a research on Improvement of LAIS maintenance workflow towards a synergy between land notary and Registrar. In this regard I would like to request your participation for answering the questions below, in order to help me to understand the role and power of land notary in the process of LAIS updating. The education is the purpose of this research, and the information which you will provide will be treated anonymously. The instructions are below.

Instruction guide

➢ Participation is not obligatory, is voluntary to answer the questionnaire, perhaps it is very important to me if you really like to answer;

➢ Take a small time and read carefully the questions and proposed answers before ticking in the box;

➢ For each question you need to fill in the box where you judge the statement feet;

➢ For one answer only one box is allowed to tick,

➢ You can use the sign X to tick into the boxes;

➢ The form can be downloaded and fulfil trough Microsoft word or you can print and fulfil it with the pen and scan it in order to have its soft copy;

➢ After fulfilling the form (answering the questions) you can attach and sent it to my email (m.c.mukagashugi@student.utwente.nl);

➢ During answering the questionnaires if you have any problem you can bip me on the phone number+250788483837 and then I can call back, or send a message by WhatsApp on phone number +31687119637.

➢ Thank you in advance for your help

Questions

1. On one working day, how often do you use the following types of information in your work related to the quality of being land notary in the process of LAIS updating?

	Very often	only sometimes	rarely
• Digital	☐	☐	☐
• Paper based	☐	☐	☐

   • Others, explain ……………………………………………………………………………

2. What are the most important sources of information that you use in the process of LAIS updating for transfer of ownership?

	Very important	important	not important
• Access to the LAIS	☐	☐	☐
• Online application	☐	☐	☐
• Phone call	☐	☐	☐
• Application letter to the District or to RLMUA	☐	☐	☐
• Information given by landowner(land title)	☐	☐	☐
• Others, explain ……………………………………………………………………			

3. What are the obstacles to access the necessary information in order to perform well your responsibility of notification of transfers in the process of LAIS updating?

	Highly agree	Agree	Disagree
• Lack updated information from LAIS	☐	☐	☐
• Use of hard copy of land title	☐	☐	☐
• Others, explain ……………………………………………………………………			

4. Please indicate in how far you agree or disagree with the following statements

	Highly agree	agree	disagree
• The big number of customers requests hinders me in doing my works	☐	☐	☐
• Customers with incomplete documents requests hinder me in doing my works	☐	☐	☐
• Customers who are not aware of where and how to pay hinder the process	☐	☐	☐
• Customer came only for advices in land related matter took me additional time	☐	☐	☐
• Service delivery delay from district and RLMUA delay me to deliver service	☐	☐	☐
• Others, explain ……………………………………………………………			

5. How important are the following problems that you face during the submission of the customer applications files to the district in the process of LAIS updating?

	Very important	important	important
• Delay to submit the application to the district	☐	☐	☐
• Return of unprocessed applications	☐	☐	☐
• Lack of transportation	☐	☐	☐
• Lack of time to go to the district	☐	☐	☐
• Others, explain ……………………………………………………………………			

6. What are the main problems that you face in your daily work related to the process of LAIS updating?

	Highly agree	Agree	Disagree
• Overloaded duties and responsibilities	☐	☐	☐
• choice to report to the different institution	☐	☐	☐
• Delays caused by land disputes	☐	☐	☐

- Being invoked in the courts ☐ ☐ ☐

Others, explain ………………………………………………………………………………….

7. What are the main problems do you face in your daily work related to the technical factors in the process of LAIS updating?

	Highly agree	Agree	Disagree
• Lack of internet at the office	☐	☐	☐
• Paper-based service delivery	☐	☐	☐
• The gap between land notary and LAIS (no link)	☐	☐	☐
• Shared office	☐	☐	☐

- Other, explain …………………………………………………………………………

8. From your experience in your daily work in the process of LAIS updating what are the most important aspects that positively enable your work?

………………………………………………………………………………………………

………………………………………………………………………………………..…

………………………………………………………………………………………………

9. Please describe at least three things that you would like to see changed to improve service delivery in the process of transfer of ownership for LAIS updating.

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

Appendix 10 (a): application process for the file introduced at the district adapted from RNRA,2016

Applicant	One-Stop-Centre	Registrar office

Request for information

Information

Rejection request for rectification

Notification

Compile documents for transaction and

Submit application

Inform notarise documents book and accept application

Transaction data

Rejection request for rectification

Process transaction

Request for approval

Approval refusal

Approve transaction

LAIS data

Generate signed certificate &store original certificate

Certificate data

Duplicate of certificate

Issue certificate

Copy of certificate

Print and seal certificate

Appendix 10 (b): application process for the file introduced at the office of the registrar of land titles RNRA, 2016