

MEASURING LAND TENURE SECURITY: A PRO-
POOR PERSPECTIVE

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MEASURING LAND TENURE SECURITY: A PRO- POOR PERSPECTIVE

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Chapter 1: Introduction

Background and problem definition

Providing land tenure security to all remains the ultimate goal of any well designed Land Administration system (Enemark et al., 2014). Improvement of land tenure security is found as a main priority of many national land policies of developing countries. Recently, the international donor community and relevant financial institutions demonstrated a renewed interest in supporting land tenure reforms with the central objective to enhance land tenure security. There are drivers behind the increasing interest, not the least being recognition that land tenure security is a prerequisite of poverty reduction in general (Deininger, 2003, FAO, 2002). It is believed that securing the land rights of the poor majority in rural areas, who rely on land as a primary source of generating their livelihood (World Bank, 2003b), would increase the wealth of poor people. Beyond poverty reduction, land tenure security improvement is regarded as a central building block of other global development agenda.

Despite widespread consensus on the importance of improving land tenure security, there is limited agreement within the international community agreement on how it should be measured. The lack of a commonly agreed set of indicators is acknowledged as a major impediment to monitoring efforts at global, national, and local level (Durand-Lasserve and Selod, 2009). The controversy over the meaning of the concept of land tenure security constitutes the main source of misunderstanding on what should be measured and monitored. The literature provides a number of attempts to bridge the knowledge gap (Ali et al., 2013, Burns et al., 2006, Deininger et al., 2011, Steudler et al., 2004). Furthermore, in 2012, a Global Land Indicators Initiative was established with the aim of developing land indicators to measure tenure security. While these efforts tend to focus on tools, and or, indicators to measure land tenure security at global or national level; little has been done to tackle more context specific indicators. Indeed it was pointed out that 'context matters', especially when it comes to understand and measure land tenure security in Sub-Saharan Africa (Laksa and El-Mikawy, 2009, Anafo, 2013).

The problem this study intends to investigate concerns difficulties in measuring the land tenure security of the poor. Linked to this problem, is the absence of a pro-poor land tenure security evaluation framework, one that can assist land administration agencies, and other actors, to evaluate the contribution of a land administration intervention. The lack of such a pro-poor framework equally hinders efforts to monitor improvements on land tenure

security. Indeed this study draws inspiration from the premise that “...*you can't improve what you can't measure...*”(Kaplan and Norton, 1996). Overall, this study places special attention on the land tenure security of the rural poor in the context of Sub-Saharan Africa. The choice of Sub-Saharan Africa is not an accident. Indeed this sub-continent is known to be home of the majority of rural poor whose livelihood mainly depends on land (World Bank, 2003a). Furthermore, existing literature and empirical evidence on what is known as land tenure security in other parts of the world remains controversial and inconclusive in Sub-Saharan Africa.

As a first focus, this study attempts to revisit the theoretical basis underpinning the concept of land tenure security for the rural poor. Conceptualization of tenure security remains problematic and there is no agreement on what security of tenure means. Much controversy resides on the meaning of tenure security for either the rural or urban poor in developing countries. The western inspired notion of tenure security tends to dominate the literature. However, it is argued that this notion is too reductionist to portray different tenure systems (customary, communal, pastoralist, among others) under which the majority of the poor falls (Lavigne-Delville, 2006, Kabubo-Mariara, 2007). Efforts to contribute to a better understanding of land tenure security (Arnot et al., 2011, de Souza, 2004, Lavigne-Delville, 2006, Maxwell and Wiebe, 1998, Van Gelder, 2010, FAO, 2002), are acknowledged, but remain less than holistic. The novelty of this study is the use of the systems approach or ‘holism’ (Laszlo and Krippner, 1998) to conceptualize land tenure security in order to fill in the limitations of the reductionist approaches used in the past.

The second and central focus of this study is the development of an indicator based framework to measure land tenure security of the rural poor. Recent developments in land administration highlight a clear shift towards pro-poor approaches for land management activities (Lemmen, 2010a, Payne et al., 2009, Tuladhar, 2005, UN-Habitat, 2007, Zevenbergen et al., 2013). Despite the pro-poor movement, it is acknowledged that commonly used land tenure security indicators are biased against the poor (Bromley, 2009, Whittal, 2014). Land Administration agencies in Sub-Saharan Africa lack the pro-poor indicators of land tenure security that would enable them to evaluate the effectiveness of land policies. As previously mentioned, present attempts to avail land tenure security indicators tend to focus on globally comparable indicators. In this regard, the contribution of this study is to develop pro-poor indicators of land tenure security that are more local and context sensitive.

The last focus of this study is an empirical validation and evaluation of the framework and pro-poor land tenure security indicators. Though the developed indicators offer a wide range of applications, this study explores

two applications. Firstly, the framework is used as an evaluation tool for measuring land tenure security after a land administration intervention. Secondly, the framework is placed in the context with other emerging pro-poor tools, to assess pro-poor land administration with regards to land tenure security provision. The Rwandan Land Tenure Regularisation (LTR) program is used as a case study. The LTR is a nationwide program that aimed to systematically register land and issue land titles, or land certificates, to all Rwandan land holders. Calls for holistic and context specific approaches to evaluate land administration intervention, are indeed increasingly gaining a momentum (Anaafo, 2013, Mitchell et al., 2008). This study is a contribution in this regards.

Research objectives and questions

The ultimate goal of this study is to investigate how to measure land tenure security from a pro-poor perspective. The overall objective of this study is to develop a framework based on pro-poor indicators to measure improvements or changes on land tenure security of the rural poor, in the Sub-Saharan Africa context. Linked to this objective, is an overall research question: How can improvements or changes in the land tenure security of the rural poor in Sub-Saharan Africa, be holistically measured? To achieve the above stated objective, specific objectives and associated research questions were formulated as follow:

1. To conceptualise the concept of land tenure security specifically for rural poor in the Sub-Saharan Africa context
 - a. What does a holistic conceptual framework of land tenure security for the rural poor in Sub-Saharan Africa entail?
2. To develop an indicator based framework to measure the land tenure security of the rural poor
 - a. What pro-poor indicators can be used to holistically measure the land tenure security of the rural poor in a Sub-Saharan African context
3. To empirically validate the framework and to evaluate pro-poor land tenure security indicators using the case of the Rwandan Land Tenure Regularisation (LTR) intervention
 - a. What is the contribution of a land administration intervention such as the Rwandan LTR on land tenure security of the rural poor?
 - b. Do pro-poor land administration principles and tools, when applied, lead to improved land tenure security of rural poor?

Research design, methods, and approach

Research Design

Research designs are regarded as models for doing research (Creswell, 2003). Models involve procedures for collecting, analysing, interpreting and reporting data in research studies (Kumar, 2005). Overall, this research can be considered to fit under the design paradigm: it fundamentally aims to conceptualize, develop, apply, and test a methodology for assessing the land tenure security of the rural poor. To support this aim, in relation to data acquisition and analysis, we opted to use an exploratory mixed method design (Creswell, 2003). The approach integrates a sequential and concurrent mix of methods. That is, the study begins with a qualitative phase (revisiting the concept of land tenure) culminating into the development of an indicator based framework, followed by two concurrent phases of qualitative and quantitative data collection and a consequent analysis phase, for evaluation and validation purposes. The use of this approach has proved to be highly appropriate for design oriented research. Furthermore, when utilizing a mixed methods approach, weaknesses of any single method is compensated by the counter-balance of another (Creswell, 2003).

Research Methods

Methods used for the execution of this study draw mainly on the above described research design. The development of the indicator based framework followed the basic steps of design research methodology (McNaughton et al., 2010): (1) problem identification, (2) definition of objectives, (3) design and development, (4) evaluation, and finally (5) communication. Design science uses previous scientific knowledge (Gregor and Jones, 2007) to bring solutions to unsolved scientific problems (Pirainen et al., 2012). The end result of design research is the creation or development of an artefact (Çağdaş and Stubkjær, 2011, McNaughton et al., 2010, Cross, 2007). This may be a software tool, an algorithm, a user interface, a methodology or a framework. In this case, the end result is expected to be a multi-aspects framework to measure tenure security of rural poor

The design process started at the conception stages of this research project (Step 1&2). Using an extensive literature review, the problem this research intends to solve was highlighted, and the design objectives were defined (Chapter 1). The development of the intended framework (Step 3), commenced by establishing the theoretical basis for indicators development. To achieve this, a systematic literature review (Cooper, 1998) known also as

a research synthesis was used. A detailed description of this methodology is provided in Chapter 2. For the selection of indicators the following methods were used: literature review, the systems approach for indicator development, and the pyramid of indicators approach (see detailed description in Chapter 3). The evaluation and validation of the developed framework (Step 4) was made using the Rwandan Land Tenure Regularization program as a case. The field work involved a mixture of qualitative and quantitative methods: desktop study, household survey, semi-structured interview, case study methods (Yin, 2003), and comparative work (for detailed description of each method see Chapter 4&5).

Research approach: Systems thinking

This study is a response to a growing need to approach issues regarding land tenure security through a more holistic lens. Overtime, there have been concerns over reductionist approaches that have dominated the understandings of land tenure security. Therefore, the aim of this study, which is to holistically measure the land tenure security of the poor in Sub-Saharan Africa, dictates the use of a research approach that enables to see the “whole elephant”. Systems thinking or holism is used as an overarching research philosophy to support the design activities. In contrast to traditional approaches that focus on isolating small parts of the system being studied, systems approaches take into account the systems as a whole, and the larger number of interactions taking place (Georgiou, 2003) The systems approach and its core concepts are applied in order to understand the complexity and the dynamism of land tenure systems in the Sub-Saharan Africa context. The use of the systems approach is not new. In the past, a number of studies have made use of this approach to tackle complex issues similar to land tenure security (Crompvoets et al., 2008, Zevenbergen, 2002, Anafo, 2013).

Thesis outline

The structure of this thesis consists of six chapters. Besides the first and the last chapter that are dedicated respectively to Introduction and the Synthesis, the other four chapters address the above research objectives and questions. In the following paragraphs, the summary of each chapter is provided.

Chapter 1: Introduction

This Chapter provides an overview of the research. The chapter sets the scene by providing the research background and problem definition. The

chapter proceeds by describing and justifying the research objectives, associated questions and methods. The Chapter ends by outlining the structure of the thesis and providing the summary of each chapter.

Chapter 2: Land Tenure Security: Revisiting and Refining the Concept for Sub-Saharan Africa's Rural Poor

This Chapter provides a research synthesis on the theoretical basis and existing conceptualisations of land tenure security using Sub-Saharan Africa literature. The three schools of thought that dominate contemporary literature are covered: the market oriented view, the legally oriented standpoint and the adaptation paradigm are reviewed. The synthesis points out the limitations behind different constructs advanced by each school of thought. As a remedy, the systems approach is used to build an inclusive and context sensitive conceptual model of land tenure security. The chapter ends by outlining potential applications of the newly introduced conceptual model.

Chapter 3: Indicators for measuring the land tenure security of the rural poor in Sub Saharan Africa

Chapter 3 is dedicated to translating the new conceptual model of land tenure security, introduced in Chapter 2, into an operational tool. The chapter presents an indicator based framework that can assist in practical measurement of the land tenure security of the rural poor. Selected indicators are grouped into six baskets, each basket reflecting key interactions that define land tenure security. A pre-empirical evaluation of selected indicators is performed by comparing these indicators with those used in prior evaluations undertaken relating to Land Administration interventions in Rwanda, Ghana and Ethiopia.

Chapter 4: Beyond economic outcomes. A pro-poor assessment of land tenure security after regularization in Rwanda

This Chapter explores the first axis of validation for the developed framework and pro-poor indicators. This is done by measuring the improvements or changes of land tenure security of the rural poor after a land administration intervention. The Rwandan Land Tenure Regularisation is used as the specific case. Findings provide evidence on improvements on some aspects of land tenure security and the effects of LTR in this regard. The Chapter highlights also the contribution of LTR in actually weakening the existing land tenure security of some of the rural poor.

Chapter 5: Pro-Poor Land Administration

This Chapter provides the second axis of empirical validation of this study's outputs: evaluating pro-poor Land Administration. The central inquiry in this chapter is placing the developed assessment framework, and case results, into the broader context of pro-poor land administration. The aim is to seek clarity on whether the pro-poor philosophy, and the tools designed to support it, as advanced by the contemporary literature, lead to land tenure security of the rural poor. Three frameworks (fit-for-purpose land administration approach, the pro-poor land recordation requirements, and the conceptual model developed in this work), all claiming to be pro-poor, are used to assess the same case: the Rwandan Land Tenure Regularisation. The Chapter concludes that pro-poor requirements and tools can indeed be successfully implemented. However, it is reiterated that successful implementation does not guarantee immediate improved land tenure security for the poor.

Chapter 6: Concluding remarks and Recommendations

This Chapter provides a synthesis of this research work and a reflection on further research as a way forward to this research. It outlines key findings of this study, out of which a set of recommendations is drawn

Chapter 2: Land tenure security: revisiting and refining the concept for Sub-Saharan Africa's rural poor¹

Abstract

In more developed societies the concept of land tenure security is implicit and backed by long standing institutions. In contrast, the concept is less recognized and carries divergent meanings in developing contexts. In these contexts past conceptualisation efforts have favoured reductionist approaches: the concept is narrowed to one aspect or another, but, no shared agreement on a definition prevails. The absence of this basic theoretical knowledge impedes discourse on land policy formulation, implementation, and evaluation. This chapter contributes to this issue by revisiting and refining the concept of tenure security in the context of Sub-Saharan Africa's rural poor. Using a systematic review, scientific evidence on the conceptualization issue is provided. A typology of different schools of thought is developed: land tenure security is shown to be understood through 1) economic, 2) legal or 3) adaptation lenses. Generic constructs from these viewpoints tend to dominate the notion of tenure security and subsequent land policy formulation; however, it is argued that none adequately describe the totality of the concept. A new inclusive concept of tenure security for rural poor in Sub-Saharan Africa is developed from the review results using a systems approach. The revised concept of security is defined as an emergent property of a land tenure system. The content of such security is explained by interactions between all elements of a land tenure system as a whole. It is concluded that rural poor in Sub-Saharan Africa can enjoy the total security when interactions between all elements occur in a dynamic equilibrium.

Key words: land tenure security; Sub-Saharan Africa; rural poor; system approach; conceptualization

¹ This Chapter is based on a published paper: Simbizi, M. C. D., Bennett, R. M., & Zevenbergen, J. (2014). Land tenure security: Revisiting and refining the concept for Sub-Saharan Africa's rural poor. *Land use policy*, 36(0), 231-238

Introduction

Much controversy accompanies the meaning of land tenure security for both the rural and urban poor in developing countries. In more developed societies the concept of land tenure security is well established, however, its meaning in developing countries entertains far more uncertainty. This is promoted by arguments that there is no one-size-fit-all definition of land tenure security (Maxwell and Wiebe, 1998). However, this notion impedes the growing body of research focused on land tenure security in developing contexts: a great variety of definitions prevail, many of them narrow, western oriented, and reduced to legal or economic aspects (Arnot et al., 2011, Hagos and Holden, 2006, Van Gelder, 2010). These approaches do not adequately align with many of the tenure systems used in developing contexts. Whilst they might illustrate high levels of land tenure security from one perspective, other important perspectives might be ignored. The narrow approaches impede more complete analyses and discourses of land tenure security being undertaken in developing contexts. More specifically: (1) it affects land policy formulation; (2) designing and evaluating land tenure security improvement interventions is likely to be flawed; and (3) it prevents scholars from empirically investigating the content of the total security to be enjoyed by a land holder.

Contemporary literature illustrates awareness of the above theoretical limitation (FAO, 2009a, Kabubo-Mariara, 2007, Lavigne-Delville, 2006, Place, 2009), as do the Global Land Tool Network; however, few attempts are made to fill the gap. Revised versions of the land tenure security concept are proposed by (Arnot et al., 2011, Lavigne-Delville, 2010, de Souza, 2004). Other pro-poor models such as the Land Administration Domain Model and its specialisation (Social Tenure Domain Model) are also developed (Lemmen, 2010b, Lemmen et al., 2012). Whilst useful starting points, the efforts are arguably also reductionist: they are driven by economic or technical motivations. Van Gelder's (2010) study on the law and psychology of land tenure security resulted in the tripartite model incorporating three different conceptions of tenure security: 1) tenure security as perceived, 2) legal tenure security, and 3) *de facto* tenure security (Van Gelder, 2010). The generalized approach emphasises how the three forms of tenure security are elements of one composite concept. However, the three elements may not generate a full picture of security for any land tenure system: they don't reflect all interactions that explain security.

This chapter aims to supplement these efforts towards a more integrated concept of land tenure security. However, it does so with a specific focus on the rural poor of Sub Saharan Africa, especially those who rely on land as a primary source of generating their livelihood. This category is the context

where the concept of land tenure security appears most controversial and a refined conceptualization would be of most use. Additionally, it constitutes the majority of rural poor² (World Bank, 2003a). The underlying premise for the novel contribution is that land tenure security is an emergent property of a land tenure system. Consequently, systems thinking or holism underpins the conceptualization efforts (Laszlo and Krippner, 1998). The systems approach suggests that properties of a complex system can be fully understood through dynamics of a whole (Laszlo and Krippner, 1998). Systems have emergent properties that can only be examined at the level of a whole, but not at component level or parts in isolation. Though such attributes may be derived from system components, they cannot be reduced to them (Zevenbergen, 2002). Therefore conceptualising tenure security requires modelling a land tenure system as a whole.

The conceptual framework developed by FAO is used as the basis for the analysis and subsequent conceptualization. To be able to apply a systems approach, land tenure must be understood as a system. Analysis of land tenure components (or elements), attributes, functions of each element, relationships and interaction between elements, and the environment of the system, must be undertaken. According to FAO (2002), land tenure is recognised as a system that regulates relationships among people, as individuals or groups with respect to land. The later elaborates on the components of the system. Land tenure refers to a set of rules that define how access is granted to rights to use, control, and transfer land as well as associated responsibilities and restraints. In other words, the system of land tenure involves people (individuals or groups); a broad set of formally or customary defined rules; the relationship to land also known as land rights; and the whole framework that regulates and enforce land rights and responsibilities. It is argued that such systems bring into play social, technical, economic, institutional, legal and political aspects: these should be taken into consideration (FAO, 2002). Whenever 'land tenure system' is referred to in this chapter, it is meant within this broad definition. Additionally, the terms 'inclusive' and 'holistic' are used interchangeably in this chapter and refer to the concept of tenure security derived from the land tenure system as a whole.

The rest of the chapter proceeds as follows. Following a brief overview of the methodology, the chapter scientifically explains the fragmented set of reductionist approaches that result in narrow definitions of land tenure

² Global poverty is predominantly a rural phenomenon. Seventy per cent of extremely poor people (those living on 1.25 dollar per day or less) live in rural areas
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT 2010. Rural poverty report 2011. Rome: International Fund for Agricultural Development (IFAD).. According to the later source, the key areas of concern are Sub-Saharan Africa and South Asia.

security. This synthesis leads to the introduction of a more inclusive conceptual model of tenure security for rural poor in Sub Saharan Africa. The utility of the model is explained and the chapter concludes with a summary of key findings and proposed future research.

Material and methods

In order to develop the systems view of land tenure security for the rural poor of Sub Saharan Africa, the research synthesis methodology, also known as systematic review (Cooper, 1998), was utilized. The approach is built on the idea of making a new whole out of the parts to provide novel concepts, novel explanatory framework, enhanced theory, or new conclusions (Cruzes and Dybå, 2011). This aligns with the aim of this study. A systematic search of literature was conducted to explore current narrow conceptualisations of land tenure security. The same literature was subsequently used through a conceptual modelling process (Kotiadis, 2008) to build an inclusive conceptual model of land tenure security.

The five stages of research synthesis were rigorously followed (Cooper, 1998):

- (1) problem formulation,
- (2) literature search,
- (3) data quality evaluation,
- (4) analysis and interpretation, and
- (5) presentation of results.

A computer based search strategy was developed using selected key words and other advanced search options such as Boolean operations (and, or) and truncation. This resulted in a number of search queries that could be reused whenever search options availed by databases could allow. Both published and grey literature was targeted. Due to resource constraints however, only resources accessible through databases (Web of Science, Elsevier, SCOPUS, GEOBASE, Springer Link, African Journals Online, JSTOR) and libraries to which we are subscribed were used. In addition, resources freely available on the World Wide Web (WWW) were utilized. In all cases only available full-text documents were considered. Inclusion criteria were developed to delineate boundaries of this review. Four types of documents were considered for the review: (1) peer-reviewed journal articles, (2) books, (3) technical reports published by international organisations, and (4) national land policy documents. Only resources written in English, addressing the meaning of land tenure security in explicit or implicit ways, were selected for the review. The study area was limited to rural Sub-Saharan Africa. This was reflected through specific country case studies, sub-regions, Africa in general, or developing countries related studies. A priori methodological quality

judgment criteria (Cooper, 1998) were applied. Consequently, studies whose methodological quality was judged difficult to assess in a systematic way (thesis, conference papers) were excluded. To minimize publication bias, however, technical reports and national policy documents, that is grey literature, were also considered. Four international organizations were judged the most active in documenting land tenure security in the Sub-Saharan contexts: World Bank Group (WB), Food and Agriculture Organisation of the United Nations (FAO), the United Nations Human Settlement Programme (UN-HABITAT), and International Federation of Surveyors (FIG). The review period was set from 1980-2012, bearing in mind that the year 1980 roughly corresponds to the recent history regarding the development of the evolutionary theory of property rights: this year can be argued as the start of heated debates on land reform in Africa. A data extraction form was used to systematically fill in the following information: (1) type of document, (2) the title, (3) field of the study, (4) country/sub-region/region, (5) meaning, definition or views of land tenure security, (6) location of the document, (7) reference (8) search date. A critical descriptive analysis was conducted using the technique of topic mapping (Hart, 1998).

Results and discussion

Research synthesis

The systematic literature review was conducted in early 2012 over three weeks. The selected literature was identified through two screenings (Figure 1). First, only titles were searched. The selected documents were then subjected to abstract and full text analysis. Figure 1 gives details on number, type and location of included/excluded documents. A total of 62 journal articles, 9 technical reports, 5 books, and 15 national land policy documents were retained for the review.

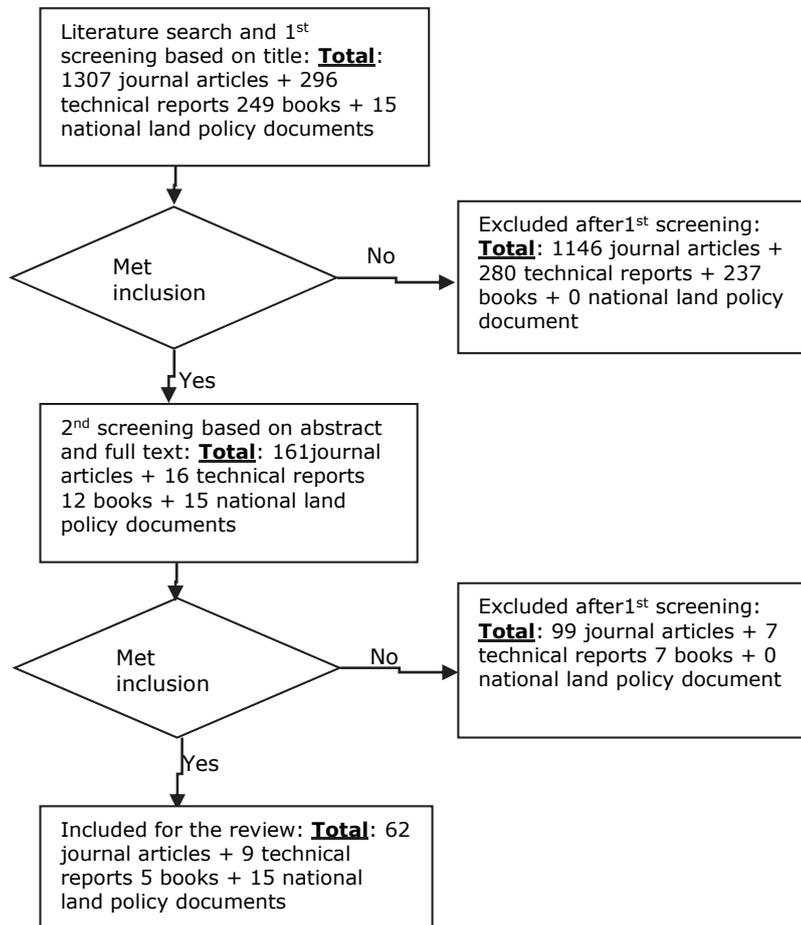


Figure 1: Flowchart of search process, results and studies inclusion and exclusion

Overall, the review identified three dominate schools of thought. These are described as: 1) the economic or market oriented school; 2) the legal based school; and 3) the adaptation paradigm oriented school. The definition of a school of thought was based on theories, views and/or understandings of land tenure, and security used in the document. The same criterion was used to classify a study, a technical report or a policy document in one school or another. What follows is a discussion of how land tenure security is conceptualised under each school. Different definitions, views and understandings advanced by these schools are critically analysed, to demonstrate the way they are too narrow to depict: 1) the system of land tenure in rural Sub Saharan Africa, and 2) the full image of security of rural poor in Sub Saharan Africa.

The economic oriented school

The review reveals that the notion of tenure security from economic perspective is the most documented and appears to dominate the whole understanding of the concept. Under this school, the recent theoretical basis of the concept of land tenure security is derived from the evolutionary theory of property rights since the 1970s by neoclassical economists. Following this theory, the maximum tenure security is regarded as the individual full ownership of land supported by written evidence commonly known as the land title. Part of the proof of ownership, was land information (boundaries, size, location), that was generated through land surveying. Recording land information, and having boundaries accurately surveyed was considered as part of security (McKenna and Urban-Karr, 2008).

Key features of the concept as described by Platteau (1996) include (1) ownership of land, (2) the degree of exclusivity to use land, (3) the transferability of land rights, (4) the duration of land rights, and (5) the proof of ownership . This conceptualisation was promoted by scholars like Feder Gershon (Feder and Nishio, 1998, Feder and Feeny, 1991), Jean Philippe Platteau (Platteau, 1996) and international funds organisations such as the World Bank and bilateral donors. Overall, since the 1980s, the meaning of tenure security under this school was mainly used as the basis of hypothetical economic models associating tenure security to economic outcomes such as incentives to invest or agricultural productivity.

The concept has continued to evolve over time. In the definition of Bruce and Migot, two new elements were added to the notion of tenure security: the perception of land rights holder and the breadth of land rights also known as the bundle of land rights. According to them:

“Land tenure security can be defined to exist when an individual perceives that he or she has rights to a piece of land on a continuous basis, free from imposition or interference from outside sources, as well as ability to reap the benefits of labor and capital invested in that land, either in use or upon transfer to another holder” (Bruce and Migot-Adholla, 1993).

Despite the integration of perceptions and the bundle of rights that opened up the scope of the concept to fit Sub Saharan Africa contexts, the above definition draws heavily on the evolutionary theory, and has been criticised to equate tenure security to private land ownership (Meinzen-Dick and Mwangi, 2009). Surprisingly however, this definition remains the most common and influential throughout land tenure related literature. For instance, the notion of bundle of land rights was used to define the maximum security (freehold)

and the minimum security (tenancy) (Brasselle et al., 2002). Holden and Yohannes (2002) adopted the following definition:

“Tenure insecurity is defined as the perceived probability or likelihood of losing ownership of a part or a whole of one’s land without her consent”.

Since the 2000s, the school was boosted by the publication of Hernando de Soto’s “the Mystery of Capital. Why capitalism triumphs in the West and fails everywhere else” (De Soto, 2000). His thesis was in line with the evolutionary theory with regard to the meaning of tenure security. An added value is that De Soto advocated the recognition of existing land rights by means of a formalising process. The same idea was promoted later under the World Bank report on Land Policies for Growth and Poverty Reduction (Deininger, 2003). The De Soto version of tenure security is also central to national land policies covered by this review. For some countries like Kenya (Republic of Kenya; Ministry of Lands, 2009), Madagascar and Mozambique (CLEAR, 2005), Rwanda (Government of Rwanda, 2004), Ghana (Government of Ghana, 1999), Uganda (Republic of Uganda; Ministry of lands housing and urban development, 2011), Tanzania (The United Republic of Tanzania; Ministry of lands and human settlement, 1997), Zambia (Republic of Zambia; Ministry of Lands, 2006), Burkina Faso (African Union Commission et al., 2011), and Ethiopia (Government of Federal Democratic Republic of Ethiopia, 2003), the objective of land policy to promote investment and economic development is explicitly stated. Moreover, the same understanding is used by other fields of study that were part of the review including deforestation (Damnyag et al., 2012) and water studies (Sjostedt, 2011).

Further development of the tenure security concept through the economic lens was marked by the separation of transferability of land rights from the notion of security of tenure with regards to security and investment incentive. In Ethiopia, it was demonstrated that both security and transferability provide incentive to invest, but that transferability has greater impact (Deininger and Jin, 2006). In Ghana, elements such as social identities, gender, individual income (Awanyo, 2009), or the powerful position of individuals within the political hierarchy (Goldstein and Udry, 2008), were found to be associated to the concept of security and its effect on investment. In other words the more powerful individuals become within a social group, the greater the security of their land rights.

Overall, tenure security under this school is equated to an individualised land tenure system and the fact of holding a title to land. Consequently, land tenure reform towards individual freehold programmes are considered as

means to provide security (Bezabih et al., 2011). Empirical evidences to validate this concept of security in Sub Saharan Africa remain however inconclusive and mixed. For instance Smith (2004) has demonstrated that in Zambia farmers with leases or titles had superior investments and productivity when compared to farmers who didn't have any document. In his review, Place provides some researches that have confirmed the relationship between land titling and investment in Uganda, Zambia and Ethiopia. However, other studies like the one conducted in Kenya, did not find any significant impact (Place, 2009). In Ethiopia, the overall assessment of the rural land certification process (first description as stressed by authors) was positive and giving impression that it would be sustainable and impacting positively on the productivity and land market (Deininger et al., 2008). However, it was found that the projected benefits may not be achieved due to the fact that poor people are not empowered enough and lack awareness of their rights (Ubink et al., 2009). It is argued that formalization of land rights may lead to reduction of security by concentrating rights to a parcel in hands of an individual and neglecting the claims of others particularly women and other vulnerable groups (FAO, 2002). The examination of Cameroon's 1974 Land Ordinance confirms the case of elites taking advantages of the state initiated formalization (Firmin-Sellers and Sellers, 1999).

The legal oriented school

Arguably, the school could be considered as part of the economic school, however, legal security is often investigated in isolation to the economic discourse for instance, in gender and tenure security related studies (Holden et al., 2011, Tsikata, 2003, McKenna and Urban-Karr, 2008, Daley et al., 2010). In the Bathurst declaration, a special recommendation was made for the provision of effective legal security (FIG, 1999).

From a legal perspective, land tenure security refers simply to protection and enforcement of someone's rights or interests in land. Indeed land rights are considered central to the whole notion of security. In some studies, "security of land tenure" is reduced to "security of land rights" (Meinzen-Dick and Mwangi, 2009, Sjaastad and Bromley, 1997, Bellemare, 2012, McKenna and Urban-Karr, 2008, Toulmin, 2009b, Bellemare, 2009). The basis of land tenure security is made by legal systems, mainly statutory systems, that manage how land rights are administered and enforced, and how rules that make land tenure secure are applied (Knight, 2010). The same legal system(s) should offer protection of those rights once challenged. It is argued that the core function of land law is to insure security of rights and interests in land (Mostert, 2011). This is another narrow construct of tenure security, this time made using the legal system as the lens. Aspects such as legal empowerment and awareness are associated to this form of security (Ubink et al., 2009, Cotula and Mathieu, 2008, FAO, 2009b).

The adaptation school

The adaptation paradigm school emerged out of inconclusive empirical evidences about the validation of the economic inspired concept of tenure security in Sub Saharan Africa. The school became active in the 1990s after the publication of the study of Bruce and Migot (1993) who concluded, amongst others things, that there was a need for adaptation of land tenure security to customary institutions. According to the review, two concepts of tenure security were identified.

On one hand proponents of this school claim that contrary to what is believed through evolutionary theory, customary land rights (or communal land rights) are not insecure. This was supported by some evidences demonstrating that customary individual use rights are secure because they are inheritable, and can stimulate investments (Jacoby and Minten, 2007, David, 1990, Fenske, 2011, Tzeuschler, 1999). It was however acknowledged that customary land rights need formal legal recognition (David, 1990). Land registration and the issuance of land certificates has been the approach promoted for customary land right legal recognition. Basically, security here refers to transferable and legally recognised customary land rights and this notion goes hand in hand with investment promotion.

On the other hand, a typical social oriented understanding of tenure security dissociated with economic outcomes could be read in (Van den Brink et al., 2006, Meinzen-Dick and Mwangi, 2009, Musembi, 2007). For them, tenure security is mainly seen as an assurance as perceived by land right(s) holder that his or her land rights are recognised and enforced within the community norms and values. From this construction, any type of rights held, regardless of scope and duration, is eligible to lead to such security. What matters is not land ownership, but rather any right in land. Furthermore, land rights should be legitimate or recognised by the community. Legitimacy of land right is found by many proponents of this school as central to tenure security. Nevertheless, it is stressed that legitimate land rights be validated by the state (Toulmin, 2009a). This is in other words, legal recognition of all forms of legitimate group and use land rights. Under this particular construct of tenure security, land registration and issuance of certificates is not regarded as the only remedy for legal backing of customary land rights. It is even argued that in some circumstances, the absence of proof of ownership may not necessarily mean that customary land rights are insecure (Bugri, 2007). Other practices for legal recognition of land rights (UN-Habitat, 2003, Deininger et al., 2010a, FAO, 2009b, Fitzpatrick, 2005) are also explored.

It is believed that the notion of tenure security under the adaptation school is the most appropriate to rural Sub Saharan Africa contexts. This is partly true,

but the concept is far to be inclusive. For instance, those who are against land rights registration (Ouedraogó et al., 1996, David, 1990, Tzeutschler, 1999, Bromley, 2009, Musembi, 2007, Meinzen-Dick and Mwangi, 2009) among others, tend to confine the whole notion of tenure security to customary institutions with the community acting as the main source of security. It is true that land rights in rural Sub Saharan Africa are mainly social relations, and the majority of rural poor fall under the customary tenure category. However, the literature proves that there is no absolute customary management of land that exists in Sub Saharan Africa, rather both customary and statutory land related institutions, do cohabit. Moreover, it should not be ignored that some customary practices or norms are not fair enough to insure equity to all land rights holders. For instance, some studies pointed out customary practices and rules that discriminate women (Cousins, 2005, Tsikata, 2003) or some minority groups (Mutangadura, 2007). From a geo-information management perspective, it is believed that by recording all types of land rights in a social tenure domain model, it would increase security (Lemmen, 2012).

Overall, the following lessons can be drawn from the above findings:

1. The western inspired concept of tenure security continues to dominate not only the literature but also land policy formulation of different countries in Sub Saharan Africa. Yet empirical evidences to support this understanding are far to be conclusive.
2. There has been failure to dissociate the meaning of tenure security, its effect or threats and how to achieve it.
3. If the target is to insure security for all, there is a need to shift from reductionist and discipline driven models of tenure security, towards a more holistic model.

Conceptual modelling

This section is dedicated to a conceptual model of tenure security that fits rural poor in SSA contexts (Figure 2). Two processes of conceptual modelling were followed as described in (Kotiadis and Robinson, 2008): knowledge acquisition and model abstract.

The first phase of the knowledge acquisition consists of problem definition, goal formulation, and selection of elements of the system relevant to the goal. In summary, the problem was identified as a narrow conceptualization of tenure security. The goal is to come up with a concept that portrays a full picture of tenure security to be enjoyed by rural poor in SSA contexts. Since tenure security is by nature an emergent property or attribute of any land tenure system, such an attribute is a function of an interaction of the system's elements as a whole. Thus, the elements of the system relevant to

our goal are five typical elements of any rural SSA land tenure system (represented by rounded rectangles in the model). These five elements are now described.

- 1) People: in rural SSA land tenure system, people may be individuals, households, groups, or even the whole community. Contrary to what is believed, the relationship of the above different categories to land is not necessarily collective.

Institutions in our model stand at the same time for both formal written and unwritten rules (North, 1990) regulating all relationships to land together with multiple authoritative structures (Toulmin, 2009b) that exercise those rules. It is important to highlight the multiplicity of structures in rural Sub Saharan Africa and different forms of power exercised by each structure. Toulmin provides a list of some of these: community councils, local government, traditional leadership, land agencies, among others. We have grouped existing structures and associated rules into two categories: social and public institutions.

- 2) Social institutions also known as customary institutions are made by socio-cultural norms, rules and associated authoritative structures that regulate land relationships through allocation, recognition, protection and enforcement.
- 3) Public institutions refer to statutory laws, policies, guidelines and related structures that regulate any relationship to land. Differently to western societies, the two institutions can hardly fully merge in rural Sub Saharan Africa. They either operate in parallel or overlap. In other words, there is no absolute regulatory framework.
- 4) The continuum of land rights and restrictions: the continuum of land rights is now accepted as a way forward to deliver security of tenure (Zevenbergen et al., 2013). In a more neutral term, it can be explained as a range of different relationships that exist over land (Lemmen, 2010b). The notion of continuum of land rights is promoted as a pro-poor land management approach (UN-Habitat, 2008). Following the later, each right within the continuum provides a certain degree of security and enables different degrees of enforcement. The notion of continuum used in our model, is slightly different. It serves to explore all co-existing relationships to land without establishing any hierarchy with regards to degree of security. We agree with Lavigne-Delville (2006) that each right should be secure regardless of the content or substance of the type of right. Furthermore, land restrictions are taken into account with respect

to responsible practice for use of land (FAO, 2012) and the principles of sustainability in general.

- 5) Land and information about land: land as a physical object or spatial unit is central to land tenure systems in rural Sub Saharan Africa. From a land administration perspective however, land as a physical object is always associated to information about land, commonly known as cadastral information, land registry information, or a land information system.

The second phase of conceptual modelling as described by Kotiadia and Robinson (2008) is the model abstract that is relationship and graphical modelling. The model is graphically represented in Figure. 2. The model is made by three elements. First the rounded rectangles representing elements of land tenure system. Second, arrows together with their description designate different relationships and interactions between elements with regards to security. Third, check boxes that show the state of security where a specific interaction materialised as an arrow is positive. The model illustrates the interactions between the elements, materialised by one or two ended arrows. These interactions are key aspects of the system that explain the content of security. The synthesis of reviewed literature was instrumental in defining relationships and interactions within elements. If we agree that tenure security is an emergent attribute, it is believed that the meaning of such an emergent property can be understood through interrelating elements, and more importantly by the types of interactions between the elements that lead to that new property (Georgiou, 2003).

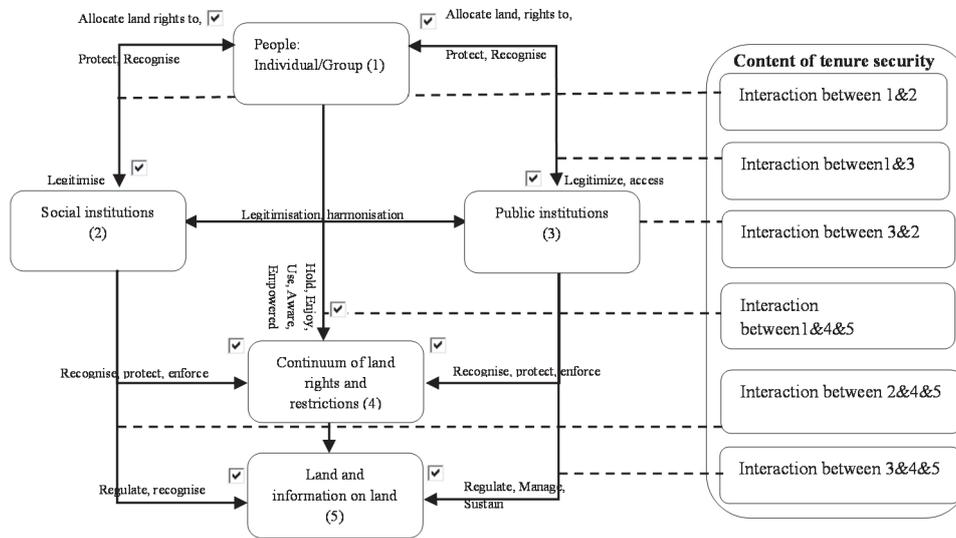


Figure 2: Land tenure security for rural poor in Sub Saharan Africa - A conceptual model

Legend

- Land tenure system element
- Interaction between elements of the system. The description is the content
- Check box to indicate positive interaction

Content of security

The content of security is explained by key interactions and the dynamism of the land tenure system elements as a whole. In the following paragraphs, a deeper description of those interactions is undertaken. Retained headings correspond to the description provided on Fig 2. Though the model is here presented in an idealized or positive fashion, the description will also use real cases that are likely to lead into a negative interaction or insecurity.

Institutions protect and recognise people and their land rights: security implies that both public and social institutions recognise land right(s) and the individual or group holding that right. The same institutions should be able to protect those people and enforce their rights once challenged. Insecurity may arise when the job is done by one institution. For instance, many African countries have revised their land legislation in favour of women. It was however found that in some countries insecurity may arise as a result of social institutions which don't recognise women land rights (Tsikata, 2003). Tenure insecurity of women or other vulnerable groups, rises as a result of some social institutions which don't recognise those categories of people as legitimate to hold a particular land right.

People legitimise and access institutions: the notion of legitimacy is often referred to while explaining tenure security (FAO, 2009a, Toulmin, 2009b, Lavigne-Delville, 2006). Following these sources, legitimacy is mainly confined to recognition of land right by social institutions. In the proposed concept, people should recognise and trust public and social institutions. When it is not the case, they can't seek for protection once their land rights are infringed. People should also be able to access public institutions. This can be in terms of time or cost. It is anticipated that in case of a conflict for instance, people may need to make use of public institution. Where these institutions are accessible and affordable, it is obvious that people will take advantage of them.

Institution mutual harmonisation and legitimisation: this simply means that both social and public institutions do not conflict or clash to one point or another. Cases where social and public institution conflict are common. Throughout Africa, there has been a lot of efforts for harmonising land related institutions, but these efforts are far to be holistic. For instance, there are cases where applied land laws were unable to cover the whole scope of land rights in practice such as occupation and use rights of women in South Africa (Cousins, 2005). Another area of concern regards the substance and consistency of land related regulations and other regulations that affect land indirectly. For

instance, security of tenure was assumed to increase in Botswana and Zambia if there were anti-eviction laws (Sjostedt, 2011). In Rwanda, the succession law in addition to the constitution, organic land law, and land policy were judged to enable tenure security of women (Daley et al., 2010). The Ghanaian land policy stipulates the need for adequate expropriation law. Other relevant laws include real property law, succession law, matrimony law, environmental law, expropriation law and related policies and guidelines among others.

People's perceptions: there is a consensus that people are secure if they perceive to be so. Sawadogo and Stamm (2000) consider people's perceptions as views or interpretations of their situations with regards to land rights held. Basically, perception concerns the whole situation of tenure security, since people interact with all other elements of land tenure system. Perceptions are however widely acknowledged as subjective and vulnerable to internal and external threats to security. For instance in Ethiopia, given past experience, people could still feel the threat of expropriation after land certification (Ubink et al., 2009).

People hold, use and enjoy their land rights: part of security is the ability to use and enjoy assigned land rights regardless their content or duration (Lavigne-Delville, 2006). Where rights and restrictions are not balanced, insecurity is likely to arise.

People are aware, and empowerment about their land rights: it was learnt from the literature, that for people to be secure, they need at least to be aware and empowered on their rights and responsibilities (Ubink et al., 2009). This is important when looking at the way land related public institutions operate. They are not service oriented, and leave it to people to show up whenever there is a problem and not the other way around.

Institutions recognise, protect and enforce the continuum of land rights and restriction: for this relationship, the notion of continuum of land rights and restrictions was previously explained. In terms of security, the description of this interaction is almost the same as the one between institutions and people. Despite efforts of harmonisation of the two institutions in different countries, land related restrictions are in some cases sources of insecurity.

Institutions regulate and recognise physical land: both social and public institutions are involved in land regulation. Here again security implies recognition of the physical land. In normal circumstances, this is

straight forwards. Nevertheless, some cases that involve land redistribution, or expropriation may result in serious cases of insecurity.

Public institutions manage and sustain land information systems: public institutions play an extra role of creating, maintaining and sustaining land information system. Security has been closely linked to land as a physical object but also to recorded land information (McKenna and Urban-Karr, 2008). Such information may contain owner identification, boundary survey, land size, the value, among others. The same information is very often part of the proof of land ownership which is used to enforce or to claim someone's land right. It may also be needed by financial institution while acquiring a loan. The link security-land information was not however that strong in Sub Saharan Africa, where the coverage of land information system was still limited. Recently however, many Sub Saharan Africa countries have introduced national land information systems covering rural land. At the same time, unconventional tools which are friendly to Sub Saharan Africa land tenure contexts are being availed and prototyped (Lemmen, 2012, Zevenbergen, 2013). Where land information is integrated into the land tenure system, public institutions should keep it up-to date. In other words, land information is supposed to reflect all on-going land transactions and any other possible changes on existing land relationships. At this end, people are also involved because they need to inform institutions on changes taking place. Cases of inconsistency between land-information and existing land related institutions are likely to harm security. For instance spatial details referred to for land related conflict resolution or financial institutions may not be met. Furthermore, land information is expected to be able to handle the continuum of land rights in order to serve the poor.

Conclusion

The aim of this chapter was to revisit and refine the concept of land tenure security for the case of rural poor in Sub Saharan Africa. The main underlying argument for refinement was that current conceptualisation efforts are too narrow and do not portray the full picture of security to be enjoyed by rural poor in Sub Saharan Africa. The results of the research synthesis reveal that the concept of tenure security is regarded through economic, legal, or social lenses. As a result, Sub Saharan African land tenure security literature seems to be divided into three schools of thoughts: economic oriented, legal oriented and adaptation schools. Different concepts advanced by the mentioned schools are more discipline oriented models that can be still useful when used to inform a specific economic behaviour, legal or social practitioners. Such models however have limitations: they cannot adjust to a contextual situation of Sub Saharan African land tenure systems. The

contribution of this chapter has been first an introduction of the systems approach as a framework for land tenure security conceptualisation. The use of this approach has reversed previous misconceptions following which tenure security is reduced to one element or another of the land tenure system. Security of tenure is rather an emergent property of a land tenure system. Defining such emergent properties requires an understanding of different elements of the whole system and their interactions. The proposed model offers a more inclusive understanding of land tenure security. We anticipate a number of applications of this model: (1) It constitutes a solid basis for designing interventions aiming at land tenure security reform or improvement; (2) It can inspire land related policy formulation; (3) The model can be used to develop tools for evaluation and monitoring land tenure security related interventions.;(4) For research purposes, the model offers a theoretical basis for operationalization and empirical investigation of the state of land tenure security. Though the concept was made to fit rural poor in Sub Saharan Africa contexts, the approach used offers a basis to replicate the exercise in different contexts. Furthermore, the systems approach reveals that one element of the system or a specific relationship can only explain partial or incomplete security and none of them can stand for the entire concept of tenure security. The model remains theoretical: further work must focus on assessing the utility of the model in a rural Sub Saharan Africa.

Chapter 3: Indicators for measuring the land tenure security of the rural poor in Sub Saharan Africa³

Abstract

Whilst pro-poor land administration approaches and tools receive much attention in land policy discourse, there remain limited context-specific indicators for measuring their effectiveness. Consequently, many Sub Saharan African countries lack baseline data on the state of land tenure security within their jurisdiction. Land administration agencies in those countries face difficulties in improving the tenure security of the poor: they lack pro-poor indicators. Previously, the absence of a holistic conceptual understanding of rural poor land tenure security was an undermining factor. Whilst models might now exist, they require operationalization. This chapter uses systems thinking, combined with a well-founded design methodology, to establish a multi-aspects assessment framework containing six baskets of indicators. Each basket reflects a key interaction that defines land tenure security for the rural poor. The value-add of the framework is demonstrated by comparing the proposed indicators with those used in evaluations of land related interventions in Ghana, Ethiopia and Rwanda. The framework comprises indicators on institutional harmony; legitimacy and trustworthiness; the balance of land restrictions and land rights; and the updating and maintenance of land registry and spatial information. Some of these aspects are found to be missing in the three case study evaluations. The anticipated applications of the proposed multi-aspects framework include but not limited to: 1) evaluation of the state of land tenure security (baseline and longitudinal data); 2) evaluation of pro-poor land administration and national land policies; and 3) assessment of the contribution of land administration interventions vis-à-vis land tenure security improvement.

Key words: land tenure security, indicators, rural poor, Sub-Saharan Africa, measuring

³ This Chapter is based on a peer reviewed conference paper: Simbizi, M. C. D., Zevenbergen, J. A., & Bennett, R. M. (2014). Measuring the land tenure security of Sub-Saharan Africa's rural poor. Paper presented at the In: Engaging the challenges, enhancing the relevance : proceedings of XXV FIG Congress, 16-21 June 2014, Kuala Lumpur, Malaysia. FIG, 2014. ISBN: 978-87-92853-21-9. 6 p.

Introduction

A search for land tenure security for all in developing countries has opened a new land administration paradigm based on pro-poor approaches. Land administration here is understood from its most commonly accepted definition:

“the process of recording and disseminating information about ownership, value and use of land and its associated resources. Such processes include the determination of rights and other attributes of the land, the survey and description of these, their detailed documentation and provision of relevant information in support of land markets”(UNECE, 1996)

International organisations and donors working on land issues have advocated the need for pro-poor land policies and tools to implement these policies. As a response, many sub Saharan Africa governments have embarked on implementing revised land policies and land administration tools and approaches claimed to be pro-poor. Recent efforts of this kind include land tenure regularisation in Rwanda, rural land certification in Ethiopia, land reform in South Africa, land administration reform in Ghana, the land tenure services project in Mozambique, among others.

To support these efforts, pro-poor land tenure security indicators are required. However, little is done to provide governments, land administration agencies, NGOs, and other interested stakeholder organizations with context specific tools for evaluation. Existing indicators are undeveloped, scattered and mainly designed to address one or another specific characteristic of land tenure security (Laksa and El-Mikawy, 2009). This may be at plot level, household level, or less frequently at community and regional levels. Commonly used tenure security indicators including ‘possession of title to land’, ‘the duration’, ‘the transferability’ and ‘the exclusivity of land rights’ are seen to be too narrow to depict the contextual aspects of the rural poor, especially in the context of sub Saharan Africa (Arko-Adjei et al., 2011, FAO, 2002, Lavigne-Delville, 2010, Place, 2009, Ubink et al., 2009, Van Gelder, 2009, Bromley, 2009, Toulmin and Quan, 2000, Meinzen-Dick and Mwangi, 2009, Simbizi et al., 2014a). Meanwhile, others argue that the variety of land tenure arrangements in sub Saharan Africa prevent having one universal operational definition (Laksa and El-Mikawy, 2009) and agreement on a set of indicators (Durand-Lasserve and Selod, 2009). Taken together, these points explain why many Sub Saharan African countries lack baseline data on the state of land tenure security.

Fundamentally, the above issues arise due to the lack of an agreed, inclusive and context-sensitive theoretical understanding of land tenure security, that is, one that captures its complexity and contextual aspects in an inclusive fashion. Referring to the well-known allegory of the blind men and the elephant, the measurement of land tenure security is primarily hindered by the failure to recognise 'the whole elephant'. Put simply, past efforts have been more about measuring trunks, legs, and tails, rather than describing the whole animal. However, a contemporary contribution fills the conceptual gap: a more holistic conceptual model of land tenure security for Sub Saharan Africa's rural poor is available (Simbizi et al., 2014a). Underpinned by a systems thinking approach, this model introduces a new understanding of the land tenure security of the rural poor. From this new perspective, land tenure security is defined as an emergent property of land tenure systems that is the object of study. Defining such an emergent property requires an understanding of different elements of the whole system and their interactions (Simbizi et al., 2014a). The model integrates five key elements, commonly found in rural sub Saharan Africa land tenure systems: 1) people, 2) social institutions, 3) public institutions, 4) the continuum of land rights and restrictions, and 5) land and information about land. In addition to the systems elements, the model describes key positive interactions that are believed to define land tenure security.

This chapter aims to describe how Simbizi's et al (2014) conceptual model might be translated into an operational tool. More specifically, the goal is to develop an indicator based framework that can be used to holistically measure the land tenure security of the rural poor, in the context of Sub Saharan Africa. The use of the above mentioned theoretical model is motivated by two main reasons. First, the model is recently developed and it is not yet operationalized into tangible indicators. Second, the model is inclusive: it provides a description of the "whole elephant" by integrating different aspects of land tenure security that were previously studied in isolation. Therefore, the model constitutes a solid basis for a pro-poor evaluation tool. Anticipated uses of the tool potentially include: 1) evaluation of the state of land tenure security (baseline and longitudinal data); 2) evaluation of pro-poor land administration and national land policies; and 3) assessment of the contribution of land administration interventions vis-à-vis land tenure security improvement.

The rest of this chapter is structured as follows. First, the background setting is established: contemporary developments in the measurement of land tenure security are synthesized, leading to a conceptual framework. A specific focus is given to indicator-based approaches and the potential utility in Simbizi's et al (2014) model. Second, the methodology used to design the multi-aspects framework is outlined. Third, building from the conceptual

framework, the derived indicators are revealed and explained. Fourth, a discussion of key issues emerging from the development process and potential application and implementation is undertaken. Finally, the conclusion encapsulates future research opportunities.

Background

Debating contemporary measurement of land tenure security

In the following paragraphs, existing measurements of land tenure security are outlined. The synthesis focuses on the efforts that are relevant to the rural poor of Sub Saharan Africa. The review provides an answer to the three questions:

- 1) How is land tenure security currently measured?
- 2) What is wrong with the existing measurement approaches?
- 3) What are the opportunities to improve existing efforts?

In the era of new public management, the low-trust society, and evidence based policy making, measurement becomes an essential elements in all societal sectors: "you can't improve what you can't measure" (Kaplan and Norton, 1996). With regards to the land sector, contemporary efforts to measure land tenure security mostly use indicators. According to Hales (2010) an indicator is considered a sign or a signal that something exists: it is used to show the presence or state of a situation. Indicators can be used at policy level: they enable decision-makers to assess progress towards the achievement of intended outputs, outcomes, goals and objectives (Horsh, 1997). An indicator makes perceptible a trend or phenomenon that is not immediately detectable (Hammond et al., 1995). Thus an indicator's significance extends beyond what is actually measured to a larger phenomenon of interest (Niemeijer and de Groot, 2008). The indicator approach is commonly used as a measurement tool not only in the field of land administration, but also in other areas such as economic development, environment, sustainable development, health science, and so on. However, the indicator approach does carry some limitations: indicators are necessarily simplified, manageable, gauges of reality that can create perverse incentives (c.f. Propper and Wilson, 2003)

The most commonly used indicators of land tenure security are developed by international organisations or NGOs involved directly or indirectly in the land sector: tenure security is usually translated into one to three indicators and packaged into evaluation tools or frameworks. Examples include: the United State Agency for International Development (USAID) Land Tenure and Property Right Assessment tool; the Millennium Challenge Corporation (MCC)

Land Right and Access Index; the World Bank Doing Business reports; the World Bank World Development Indicators; the World Economic Forum's Global Competitiveness Index; the Framework and Guideline on Land Policy in Africa (AUC (African Union Commission) et al., 2010); and Economic Freedom of the World Index. In addition, there are frameworks that include a subset of indicators for measuring land tenure security. Examples include: the World Bank Land Governance Assessment Framework (Deininger et al., 2011); Evaluation Framework for Land Administration Systems (Stuedler et al., 2004); Land Administration Reform Indicators of Success (Burns et al., 2006); and a Framework to Apply Total Quality Management Concepts to Land Administration (Ali et al., 2013). There also exists land tenure security indicators that are developed by individual researchers or scholars (Bruce and Migot-Adholla, 1993, Fenske, 2011, Kabubo-Mariara, 2007, Lindsay, 1998, Mitchell et al., 2008, Deininger and Jin, 2006, Feder and Nishio, 1998).

Until recently, limitations of land tenure security indicators were examined through individual indicators. The literature provides a number of controversial indicators such as the breadth of land rights (duration, exclusivity and transferability), or possession of individual land title. These are mainly criticized as favoring individual land ownership as the most secure tenure type (Ubink et al., 2009, Lavigne-Delville, 2010). Beyond these claims, it is equally important to point out limitations associated with approaches behind indicators development. Whilst the use of indicators as a measurement tool is not inherently problematic, approaches behind concept operationalization or indicator development can create issues. For instance, one of the limitations of indicators developed by international organisations, is that they are tailored to the organisation's understanding of land tenure security (Laksa and El-Mikawy, 2009). Such understandings might be dictated by an organisations philosophies, interests, agenda, or expertise (Stuedler et al., 2004). For instance, organisations such as UN-Habitat tend to narrow tenure security indicators to urbanisation issues that constitute the UN-Habitat's central agenda. Indicators based on expert opinion are criticised as being influenced by personal experience, discipline, intuition, heuristics and bias of relevant experts involved in the assessment (Kampichler et al., 2010). Furthermore, different organisations are known for using the Logical Framework Approach (LFA) as a framework for indicators development: LFA is argued to assume a linear progression of effects regardless of contextual conditions (Fujita, 2010). As a result, preference is always given to linear and quantitative indicators that do not capture the whole situation of the poor. Theory-driven approaches (Niemeijer, 2002) are another approach used to develop land tenure security indicators. With regards to land tenure security, the theory might be the 'evolutionary theory' (Platteau, 1996), 'the de Soto thesis' (De Soto, 2000), or 'Boserup's hypothesis' (Kabubo-Mariara, 2007), amongst others. Theory-driven approaches are regarded as more discipline

oriented and very useful when it comes to informing specific audience. However, such approaches fall short in taking into account different aspects of the concept being measured. For instance, indicators such as 'access to credit', 'increased land market activity', and 'increase in land value' do not adequately capture aspects such as 'equity in land allocation' or 'protection and enforcement of land rights'.

Overall, existing frameworks of land tenure security indicators are not holistic in scope: the conceptual understanding is often narrowed for one reason or another, and the methodological approaches currently in use offer little ability to tackle the total complexity of land tenure security in an integrated way. Existing indicators are fragmented and essentially discipline biased. Opportunities to improve existing efforts are clear, given the above outlined limitations. There is a need for an approach that enables the selection of indicators that not only reflect simple and linear relationships, but also non-linear and complex relationships. The same approach might also enable multiple perspectives to be combined as to avoid narrowing indicators to one lens or level of evaluation.

Conceptual framework

As previously introduced, the aim of this chapter is to operationalize a model that captures the land tenure security of rural poor in the context of sub Saharan Africa (Simbizi et al., 2014a). The model suggests that in this context land tenure security emerges as a result of positive interactions between key elements or components of land tenure systems as a whole. The model captures five elements (Simbizi et al., 2014a):

- 1) People: these may be individuals, households, groups or an entire community
- 2) Social institutions: social cultural norms and associated authoritative structure that regulates land relationships through allocation, recognition, protection and enforcement
- 3) Public institutions: statutory laws, policies, guidelines and related authoritative structures that regulate any relationship to land
- 4) The continuum of land rights and restriction's: all co-existing relationship to land, these may be land rights or restrictions
- 5) Land and information about land: land as a physical object and associated land information (land registry, cadastre)

Interactions between the above elements are below outlined (Simbizi et al., 2014a):

1. Interaction between People and Public Institutions: from this interaction, tenure security emerges, when public institutions insure the allocation of land rights to people with equity; recognise, protect people and their land

rights. People in turn trust and legitimize public institutions; and they should be able to physically and financially access public institutions.

2. Interaction between People and Social Institutions: similar to the first interaction, tenure security emerges when social institutions insure the allocation of land rights to people with equity; recognise, protect people and their land rights. To make this happen, people should legitimize social institutions; and access them.
3. Interaction between Social and Public Institutions: tenure security emerges when both social and public institutions are harmonized. Additionally, this interaction involves the reciprocal legitimization of both institutions.
4. Interaction between People and the Continuum of Land Rights and Restrictions: from this interaction, part of tenure security, is the ability for people to use and enjoy their land rights, regardless of their content and duration. Equally, tenure security emerges once people are aware and empowered with respect to their land rights and restrictions.
5. Interaction between Public Institution and the Continuum of Land Rights and Restrictions: tenure security will emerge when there is a balance between land rights and restrictions. Public institutions should be able to insure the sustainability of a land information system.
6. Interaction between Social Institutions and the Continuum of Land rights and Restrictions: tenure security will emerge if social institutions recognise the continuum of land rights and restrictions. Security of tenure is also subject to the ability of social institutions to report land transactions and any change to land relationships.

Methodology

This Chapter draws on the broader methodology of this study. As previously mentioned in Chapter 1, the basic steps of design research methodology (Figure 3) were followed for the development of the indicator based framework to measure land tenure security of the rural poor. This Chapter is mainly dedicated to the actual development of the framework (step 3). While the design process already started (Chapter 1&2), the present Chapter uses the outputs of those Chapters, as the inputs for the actual development of the framework. The Chapter provides also a pre-empirical evaluation of the framework.

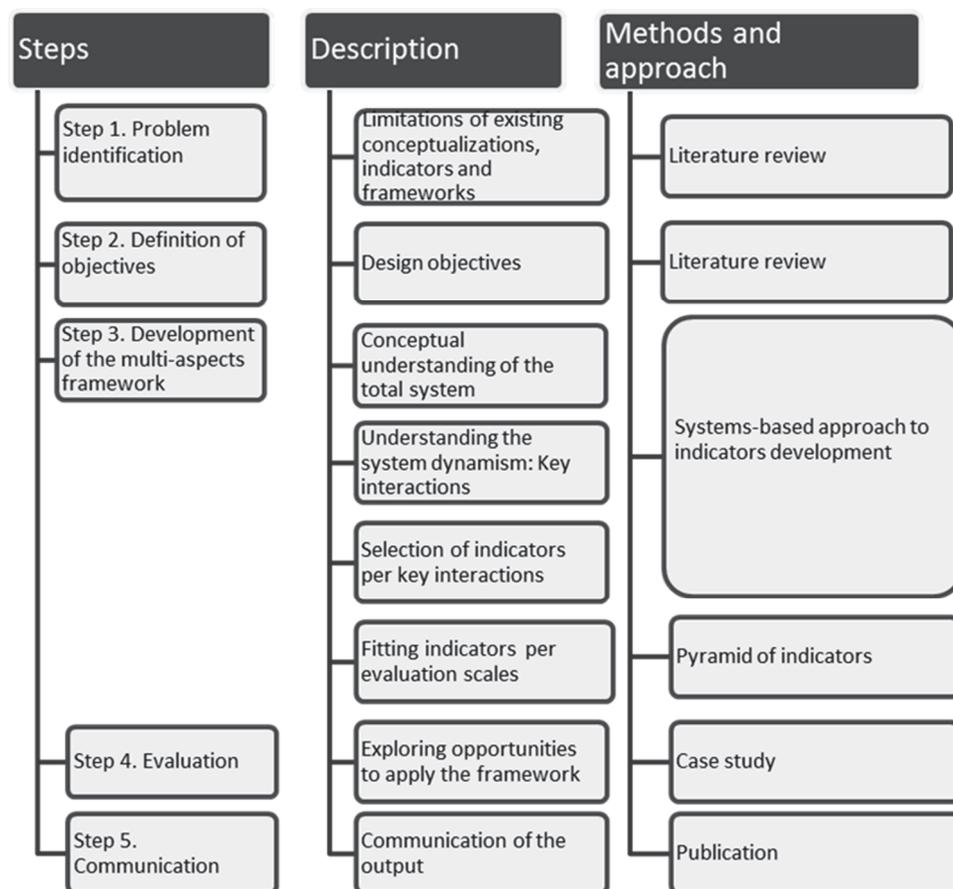


Figure 3: Methodological steps for designing a multi-aspects framework to measure the land tenure security of Sub Saharan Africa’s rural poo

As it appears in Figure 3, the design process involves different tools, methods and approaches.

Step 1 and 2 were mainly covered in Chapter 1 and 2. In addition to that, this Chapter provided a review of literature on existing efforts to measure land tenure security, in order to assess existing gaps and the need to improve existing efforts.

Step 3: the systems-based approach to indicator development borrowed from (Bossel, 2001) was used for the selection of indicators. This approach has proven to be the most holistic method for indicator development (Bossel, 2001) in the field of sustainability. It is argued that unlike many other approaches for indicator selection, the systems-based approach insures that indicators cover all important aspects of the system that is object of the

study (Reed et al., 2005). Secondly, the pyramid of indicators adapted from (Hales, 2010) is used to fit selected indicators into three scales of evaluation. The pyramid of indicators is recommended when dealing with a large number of indicators. Retained scales include: 1) micro level: individuals, households or plot level, 2) meso level made up of a community, and 3) the macro level that can be the entire country or a region. For each level, there may be specific indicators and others that can be aggregated for a higher level (Hales, 2010).

Step 4: the evaluation: opportunities to apply the framework are explored using country case studies.

Step 5: dissemination is realized through the publication of works and awareness raising activities

Results

Conceptual model

As previously disclosed, this chapter uses holistic conceptualization of land tenure security for the rural poor in sub Saharan Africa (Simbizi et al., 2014a), as the basis of an indicator based framework to measure tenure security of the rural poor. The original conceptual model is presented in the first two blocks on the left hand side of Figure 4. These explain the total land tenure security to be enjoyed by a rural poor in the context of sub Saharan Africa. This notion of land tenure security is explained by different interactions between five key elements, characteristic of rural land tenure systems in sub Saharan Africa, and its environment (Simbizi et al., 2014 and see the description of the model in the Background section). The two blocks on the right hand side of Figure 4 illustrate the process for operationalizing the conceptual model into baskets of indicators. This framework aims to provide a set of indicators for holistically measuring the total tenure security of the rural poor. The target of the framework is to derive indicators that capture all important aspects of land tenure security in the rural sub Saharan Africa context. In the following paragraphs, the components of that framework are explained. The two first blocks represent the conceptual model of land tenure security that is object of operationalization. The third block is made by six baskets of indicators. The fourth block contains three levels of evaluation and respective baskets of indicators.

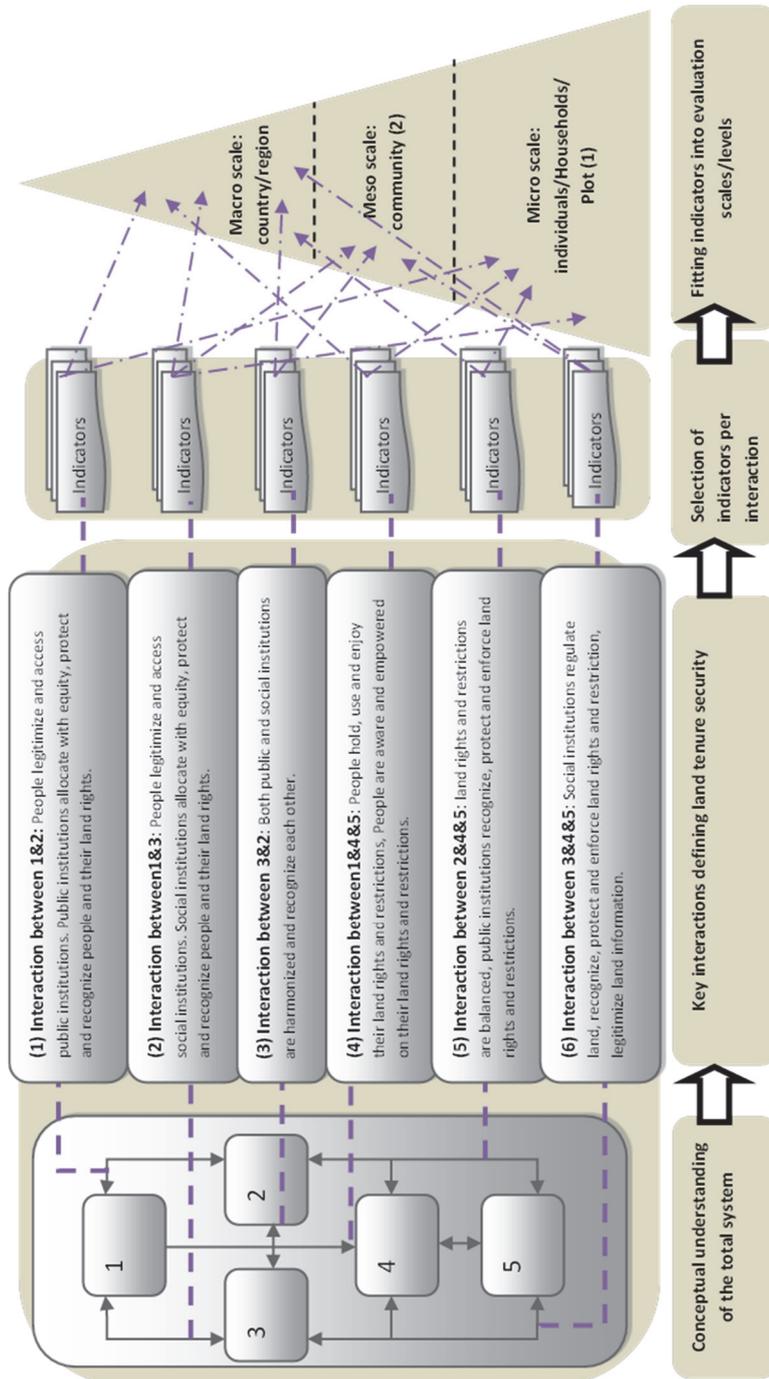


Figure 4: A multi-aspects framework for measuring tenure security of rural poor in Sub Saharan Africa context



Land tenure systems element.

For the case of rural sub Saharan Africa:

1. People: Group or individuals;
2. Public Institution
3. Social or customary institution
4. The continuum of land rights and restrictions
5. Physical land and land information



Interactions between system elements

Indicator catalogue, selection, and formulation

For the selection of indicators, the following methodological steps were undertaken:

- Obtaining a conceptual understanding of the total system: this consisted of the description of six interactions, that together define land tenure security to be enjoyed by a rural poor (c.f. Simbizi et al, 2014);
- Cataloguing existing indicators: using a cut-off date of no later than 1980, English literature, obtained from ISI scientific indexes (e.g. Web of Science, Elsevier, SCOPUS, GEOBASE, Springer Link, African Journals Online, JSTOR), prominent conference series (e.g. FIG, World Bank Conferences on Land and Poverty), and technical reports from prominent international agencies (e.g. World Bank), indicators relevant to rural sub Saharan Africa were identified (c.f. Simbizi et al 2014). Identification of existing available indicators. The inclusion criterion was that any indicator that matched the description of each interaction should be considered, it could be qualitative or quantitative, linear or nonlinear indicators.
- Selection of existing indicators: the minimum set of catalogued indicators that were seen to provide a complete description of each interaction, with reference back to the conceptual model, were selected;
- Formulation of missing indicators: where it was felt that existing indicators did not fully cover a particular interaction, new indicators were formulated, at the micro, meso, or macro level, in order to capture the missing elements of the relationship.

In the tables below, existing indicators and their sources are respectively provided in the second and the third column. The so-called missing indicators, developed through the research, are provided in the fourth column.

Indicators per evaluation scale

Scales of evaluation of land tenure security are captured by the fourth block of Figure 4. It is indicated within which scale of evaluation each indicator falls (see tables of indicators). The micro scale is the base and contains indicators on land tenure security at individual, household or plot level. It draws on data derived from four baskets of indicators. When taken together, micro scale indicators are enough to evaluate the state of land tenure security at individual, household and plot level. Most of these indicators can be aggregated for higher scales: community and national level. However, where social institutions are well established and operational (for instance in Ghana or South Africa), indicators at this level may partially describe tenure security at community level. The meso scale or community level includes specific indicators mainly associated to social institutions. The macro level gives an overall picture of land tenure security. It may be at national or sub-national level. Indicators at this level aggregate data from the micro and meso level.

Table 1: Indicators/Interaction1: People versus Public Institutions

Interaction 1: People and Public institutions			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Sources	Missing indicators (developed by the authors)
<ul style="list-style-type: none"> • allocation of land rights to people with equity, • protection and recognition of people and their land rights, • legitimization of public institutions, • access to public institutions 	1 The percentage of households affected by land conflict (1, 3)	<ul style="list-style-type: none"> • (Bruce and Migot-Adholla, 1993, Mitchell et al., 2008, Wilusz, 2010, Deininger et al., 2012, LEAP, 2007, Steudler et al., 2004, IFAD, 2009, Lindsay, 1998, AUC (African Union Commission) et al., 2010) • Millennium Challenge Corporation (MCC): land rights and access index • World Bank Doing Business 	1. The average time to reach the land related authority per the most used means of transport (1, 3)
	2 Average working days taken to resolve a land dispute (3)		2. Access to the office of the authority in charge of land (3)
	3 Perceived land dispute cost (1, 3)		3. Access to the office of land related conflict resolution instances (3)
	4 The proportion of land related cases pending in the public courts per year (3)		4. Perceived public protection (1, 3)
	5 Perceived population satisfaction on public institution service delivery (1, 3)		5. Perceived risk to land redistribution (1, 3)
	6 Perceived risk to government expropriation (1, 3)		
	7 Perception on fair compensation (1, 3)		
	8 Perceived public institution corruption (1, 3)		
	9 Perception on land transaction cost (1, 3)		
	10 Percentage of households that have a legally recognized proof of land rights (1, 3)		
	11 Legal provision insuring equal access to land between man and woman		

From Table 1, eleven indicators were adapted from existing sources, while another five indicators are introduced. For the existing indicators, it was found that some lack clarity. Adapted indicators have the ability to explicitly indicate a positive situation of security or to alert the existence of a problem (or insecurity). For instance indicators such as land disputes reduced or frequency of land dispute (Mitchell et al., 2008), were translated into the percentage of households affected by land conflict and the number of land related cases pending in the courts. The category of missing indicators tackles issues regarding access to the land and related institutions. Overall, proposed indicators mainly assess the outcome level of security through people’s perceptions. They can assess the situation of tenure security at micro and macro level.

Table 2: Indicators/Interactions2: People versus Social Institutions

Interactions 2 People and Social institutions			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Source	Missing indicators (developed by the authors)
<ul style="list-style-type: none"> • allocation of land rights to people with equity, • protection and recognition of people and their land rights, • people legitimize social institutions, • people can access social institution 	1. The percentage of households affected by land conflict (1,3)	(Mitchell et al., 2008, LEAP, 2007)	1. The percentage of landless households (1,3)
	2. Average working days taken to resolve a land dispute by social institutions (2)		2. The proportion of plots acquired through women inheritance compared to men inheritance (1, 3)
			3. Perception on girls and boys equal rights to inheritance (1, 3)
			4. Perceived population satisfaction on customary institution service delivery (2)
			5. Perceived eviction risk by community members (1, 2)
			6. Perceived customary institution corruption (1, 2, 3)
			7. The proportion of land related cases pending in customary courts (1, 2, 3)

The total of nine indicators are proposed to measure interaction between people and social institutions (Table 2). These indicators address mainly the issue of access to land, equity and protection given the majority of rural poor, acquire their land through social institutions. There is an overlap between Table 1 and Table 2 on the indicator of land conflict. For data collection, this overlap can be handled through disaggregation levels. Proposed indicators can feed the three evaluations scales.

Table 3: Indicators/Interactions3: Public institutions versus Social Institutions

Interactions 3 Public and Social institutions			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Source	Missing indicators (developed by the authors)
<ul style="list-style-type: none"> Both institutions are harmonized, Both institutions legitimize each other 	1. Type of customary land rights not recognized by statutory laws (2, 3)	(Deininger et al., 2012)	1. Area of inconsistency within statutory land related laws and policies (conflicting provisions) (3)
			2. Type of statutory land laws not recognized by social institutions (2, 3)
			3. Type of customary authority not recognized by public institution (2, 3)

Indicators to measure the level of harmonization and legitimization between public and social institutions are underdeveloped. Existing efforts mainly focus on measuring the level to which public institutions recognize social institutions, not the other way around. In Table 3, four qualitative indicators are introduced to measure the level of harmonization and legitimization between both public and social institution. These indicators can be assessed at community level with possibility to aggregate data at national scale.

Table 4: Indicators/Interactions 4: People-Continuum of land rights and restrictions-Land and land information

Interactions 4: People-Continuum of land rights and restrictions-Land and land information			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Source	Missing indicators (developed by the authors)
<ul style="list-style-type: none"> people use and enjoy their land rights, people are aware and empowered on their land rights and restrictions 	1. Type of land investment (1)	(Deininger and Jin, 2006, Mitchell et al., 2008, Bruce and Migot-Adholla, 1993)	1. The proportion of households who can lease (in and out) land (1, 3)
	2. Agriculture land rent price (1)		2. The proportions of land acquired through purchase compared to other mode of land acquisition (1, 3)
	3. Agriculture land sale price (1, 3)		3. Spatial Extent of physical land investment (1, 3)
	4. The proportion of land sales (1, 3)		4. Perceived awareness on land restrictions (1, 3)
	5. The proportion of households that have acquired loans using land as collateral (1, 3)		5. The proportion of household affected per type of restrictions (1, 3)

From Table 4, a total of ten indicators is evident. This category includes many indicators to be evaluated at plot level. A number of existing indicators traditionally attributed to tenure security (such as the duration, the content and exclusivity of land rights), were however not considered. Two main reasons inform the decision: 1) the conceptual framework explains security within a continuum of land rights and without any hierarchy between those rights; and 2) contextual consideration is important. For instance the majority of rural poor may own land but at the same time heavily depend on use rights (land lease, sharecropping, group rights). Therefore, assuming that security can be explained by individual land ownership would be misleading.

Table 5: Indicators/Interactions 5: Public institution-Continuum of land rights and restrictions-land and land information

Interaction 5: Public institution-Continuum of land rights and restrictions-land and land information			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Source	Missing indicators (developed by the authors)
<ul style="list-style-type: none"> ✓ Restrictions and land rights are balanced ✓ Rights to land are recognized, protected and enforced ✓ Land information is well managed and sustained 	<ol style="list-style-type: none"> 1. Coverage of the land recorded in land information system (3) 2. The proportion of registered land sale (1, 3) 3. Proportion of registered land (1, 3) 4. Proportion of registered land inheritance (1, 3) 5. Average time to complete land sale registration (3) 6. Average time to complete land inheritance registration (3) 	(Burns et al., 2006, Deininger et al., 2012)	<ol style="list-style-type: none"> 1. Type of public land restrictions affecting private land (3) 2. The proportion of household affected per type of public restriction (1, 3) 3. The proportion of plots affected by public restriction per household (1, 3) 4. The proportion of restricted land compared to private land (3) 5. Cases of land grabs (3) 6. Proportion of land grabbed compared to the total private land (3) 7. Type of land rights recorded in a LIS (3)

In Table 5, thirteen indicators that basically assess the micro scale (plot, individuals, household) and the macro scale are proposed. This table doesn't however contain indicators on recognition and protection of land rights, since they were covered in Table 1 and Table 2. It was found wise to make separate indicators on land restrictions instead of considering desegregation. The same applies to indicators on the extent of reporting tenure changes: land sale, land inheritance, and associated time.

Table 6: Indicators/Interactions 6: Social institution-Continuum of land rights and restrictions-land and land information

Interaction 6: Social institution-Continuum of land rights and restrictions-Land and land information			
Description of tenure security content	Selected indicators and respective evaluation scales (1: micro, 2: meso, 3: macro scales)		
	Existing indicators	Source	Missing indicators (developed by the authors)
✓ Restrictions and land rights are balanced	1. Extent of communal/group land rights recoded in Land Information System (2, 3)	(Deininger et al., 2012)	1. Type of customary restrictions and the proportion of affected households (1, 2)
✓ Rights to land are recognized, protected and enforced			2. Type of customary land rights not recorded in Land Information System (2, 3)

Table 6 includes one existing indicator, and two new ones. This table doesn't repeat some indicators on protection and recognition proposed in Table 1 and Table 2. Proposed indicators cover the three scales of evaluation.

In summary, the use of systems approach has enabled the selection of a comprehensive set of indicators that depict all key aspects of land tenure security of rural poor, in the context of sub Saharan Africa. The approach provides systematic guidance for a comprehensive indicator search, thus minimizing the danger of overlooking essential areas or overemphasizing others (Bossel, 2001). It is however reiterated that taking a systems approach to indicator development is not about looking at everything. It is about being aware of what to look at, what can be left behind, and what are the implications of leaving behind some aspects (Williams and Imam, 2006).

Discussion

From conceptual to operational

In many developing countries in Sub Saharan Africa, land tenure security is the central objective of the national land policy or a land administration related intervention: governments and land administration agencies need indicators of land tenure security that enable evaluation of the achievements on national land policy objectives. The applied methodology, coupled with the innovative model of land tenure security, enabled the development of a multi-aspects framework for more holistically measuring the land tenure security enjoyed by the rural poor in sub Saharan Africa. Consisting of six baskets of indicators, the model is intended to enable baseline and longitudinal assessment of tenure security, and the results can inform evidence based policy making: policy formulation can focus on those baskets, or elements therein, that are determined to be underperforming.

The completeness/applicability trade-off

This research further demonstrates the inevitable trade-off, when developing indicator based framework, between choosing few indicators or a comprehensive set of representative indicators that may involve expensive and time consuming data collection and analysis. Past efforts have gone for using a few quantitative and linear indicators of tenure security that are easy to monitor. This trend is however being revisited in some fields of study such as land administration or land governance. In these fields, there is an increasing agreement on the need for substantial numbers of indicators to be able to assess land issues. Recent efforts on indicators for the Land Administration Reform (Burns et al., 2006) and Land Governance Assessment Framework (Deininger et al., 2011) are good examples. New tools and techniques for data collection are enabling the approach. Given that the number of indicators appears to be now less of an issue, the challenge becomes how to come up with a set of representative indicators. The proposed indicators in this framework (55 indicators in total) give the impression they are too many. It is not intended here to seek agreement on the number of selected indicators: the number will necessarily vary depending on the level of disaggregation. At any rate, the proposed framework does not claim to measure every aspect of land tenure security: any operational tool cannot include indicators for every aspect of land tenure security. Subsequently, only those indicators relevant to the interactions, as determined by the original conceptual model, are captured in the framework: the framework is argued to capture all important aspects of land tenure security of rural poor in Sub Saharan Africa.

The missing indicators

Some aspects covered by selected indicators will be familiar to land practitioners, and they are often covered by different evaluation studies: equity in land right allocation; legal recognition and protection of land rights; access to land institution; use of land rights; and people's perceptions. Similarly, the three scales or levels of evaluation are recognised within the large land community, though quiet often those levels are studied separately. However, the proposed indicators go further to include other aspects that are so far given little attention when you look at existing evaluation tools and studies. These are: legitimisation of both social and public institutions; social protection and recognition of land rights; social enforcement of land rights; institutional harmonization; the substance and consistence of land related laws and policies; the balance between land rights and land restrictions; cases of land grabs, people's empowerment and awareness on their land rights, and the sustainability of land registries and land information.

Quantitative, qualitative, and multi-scaled

The integration of all the above aspects results inevitably in a mixture of qualitative and quantitative indicators, linear and non-linear indicators. Though it is often advised to choose quantitative and statistically sound indicators, it is equally important to insure that sensitive and context-specific indicators are taken into consideration. For instance, it is not enough to record the number of land conflict cases or households affected by land conflict (interaction 1 and 2). It is also important to have data on how a rural poor perceives the costs of a land conflict or the protection he or she receives from public or social institution. Having in mind that rural poor depend mainly on social tenure arrangements, relying on quantitative indicators would result in failing to capture data on the level of social land rights recognition, or institution harmonisation. For instance, the type of customary land rights or authorities that are not recognised by the statutory law, conflicting provisions within statutory land related laws and policies (Interaction 3). The proposed indicators cover, in a simultaneous fashion, households, communities as well as social and public institutions. There is also room for further disaggregation of household indicators into individual (single mother, unmarried people) indicators.

Towards application: insights from Ghana, Ethiopia and Rwanda

Opportunities to apply the proposed multi-aspects framework can now be explored. Here, cases of land related interventions evaluation are used to demonstrate where the multi-aspects framework can potentially fill gaps in assessment programs: discussions reveal limitations of the indicators currently in use, and how the multi-aspects framework might improve evaluation. Three country case studies are considered: Ghana, Ethiopia and Rwanda. Selection was based on the following criteria: 1) the country has set land tenure security as one objective of a national land policy; 2) the country has implemented a land related intervention aiming at improving land tenure security in the last three decades; 3) the intervention has included rural land holders; 4) the intervention was evaluated through one or more studies; and 5) the intervention is generally assessed as successful. It is important to highlight that these countries reflect contextual differences: the land tenure system in each country has its own particularities.

In 1999, Ghana inaugurated a comprehensive national land policy that provides for managing all land in Ghana, including customary lands (Arko-Adjei et al., 2011): approximately 80% of land is governed by customary tenure (USAID, 2013b). The national land policy was implemented through

the largest land related intervention the country has ever known: the Land Administration Project (USAID, 2013a). The project objective was to develop a sustainable and well-functioning land administration system: fair, efficient, cost effective, decentralized, and enhancement of land tenure security were its goals (Independent Evaluation Group (IEG), 2013). The assessment of the project evaluated the achievement of tenure security using six measures (Independent Evaluation Group (IEG), 2013). When compared to the multi-aspects framework, these measures can be classified as follows: substantive legal reform, land title certificate issued (interactions 1 and 5); harmonization of customary and statutory tenure (ruling the legitimacy of customary freehold), strengthened capacity of customary authority to administer land/Land Secretariats (interaction 3), customary boundary demarcation (interaction 5), and knowledge and awareness on customary rights (interaction 4). The relevance of measuring legitimacy and harmony between social and public institutions (i.e. interaction 3) is illustrated by the case. For instance, one of the project objectives with regards to tenure security was reconciling statutory and customary law by establishing a customary freehold. The assessment reveals that the Attorney General ruled that the customary freehold was a legitimate institution. However, it was also found that the National House of Chiefs refused the government ruling (Independent Evaluation Group (IEG), 2013). Many other aspects of tenure security such as equity in land rights allocation, protection and enforcement of land rights, people's perception (interaction 1), use and enjoyment of land rights (interaction 4), balance between land rights and restrictions (interaction 5); were however not measured. For instance, measurements on state of land restrictions and land grabs are missing. Nevertheless, a USAID report mentions a rise in large-scale commercial farming and related concerns that would affect the security of small holders (USAID, 2013a). Having measured the substantive legal reform, it would be worthy to know how the new laws and policies are enforced. In summary, the assessment of the Land Administration Project didn't include vital indicators (e.g. state of land grabs): the developed framework could assist in this regard.

The Ethiopian land tenure system is characterised by state control of rural arable land. Since 1998, the Ethiopian government has undertaken a programme of rural land certification. The program was implemented in four major regions of the country: Tigray, Amhara, Oromiya and the Southern Nations and Nationalities (SNNR) (Bezabih et al., 2011). The main objective of the programme was to address the issue of tenure insecurity and to establish an effective framework of land administration (Rahmato, 2009). Over a short period, the programme has issued certificate to more than 20 million plots (Deininger et al., 2008). The World Bank study conducted an assessment of the initial impact of the programme with regards to land tenure security using three indicators: perceived risk to lose land, possibility

to dispose of land to individuals other than offspring, and the extent to which mortgaging land is allowed (Deininger et al., 2008). Later, in 2011 the World Bank conducted another study and this time security was measured through perceived risk of land loss or gain, perceived land conflict, land rights documentation/certification, share of plots with investment, time spent, and rental market participation (Deininger et al., 2011a). Individual researchers have been more specific on the number of security indicators or variables to be investigated. For instance, individual and institutional trust (Bezabih et al., 2011), the duration of land rights (Gebremedhin and Swinton, 2003, Mekonnen, 2009), and awareness and empowerment on land rights (Rahmato, 2009). These different assessments illustrate how multiple aspects have been covered at different times by different studies. Moreover, over time the assessment has progressed from a focus on interaction 1 more towards interactions 4 and 5. Consequently, the Ethiopian case is informative when it comes to showing how people use and enjoy their land rights; the level of people empowerment and awareness (interaction 4); the level of legitimization of public institutions; and the level of protection and enforcement of people and their land rights (interactions 1 and 5). However little is known on interactions 2, 3 and 6. Even within each interaction that seems to be covered, the currently applied indicators don't fully capture all concerned aspects. For instance, there is no measure on land registry updates and sustainability, however it was noticed that the failure to keep certificates up-to date is likely to affect the level of security achieved (Deininger et al., 2008). In summary, though numerous land tenure security evaluations studies were carried out after rural land certification, key interactions between public institutions and people appear to be missing. The framework of indicators described in this chapter would assist in delivering a more complete perspective.

In Rwanda, the majority Rwandan households are smallholders who own customary acquired land under long-term leases. Rwanda introduced its first national land policy in 2004 with land tenure security clearly stated as an overall objective: "... the overall objective of the national land policy is to establish a land tenure system that guarantees tenure security for all Rwandans..." (Government of Rwanda, 2004). To operationalize the national land policy, Rwanda undertook a Land Tenure Reform. Central to this reform was a land tenure regularisation (LTR) programme for systematic land registration and issuance of land certificates. Implementation of the programme extended into two phases: a preparatory phase (2006-2008) and a full implementation phase (2009-2013). Other elements of the land tenure reform package included: 1) development of policy and legislation, 2) development of land administration and procedures, 3) developing land management organisation, and 4) national system for land planning and control (Government of Rwanda, 2007). Subsequent to the completion of

the project, there became the need to examine how security was measured and how the government, and in particular national land administration agencies, were informed on the achievements of their land policy objective. A growing body of studies is emerging.. In a World Bank study, security of tenure was measured using perceived risk to expropriation, women land ownership, women land inheritance, and soil conservation investment (Ali et al., 2011). These indicators partly address aspects of people perception, equity to land rights allocation and access (interaction 1 and 2) and use of land rights (interaction 4). The report of LANDESA and CARE International used perceived risk to loss of land, and the perceived tenure security in five years to come as indicators (Santos et al., 2012). The report provides also comprehensive measures on people's awareness and empowerment on their land rights (interaction 4), without linking them to tenure security. Another study investigated security of woman land rights using women land inheritance rights (Daley et al., 2010). Though the first two studies measure perceived tenure security, people's perceptions with regards to their security can't be oversimplified into one or two perception indicators. None of the studies provides a measure of institutional harmony and consistency of existing laws and policy (interaction 3). Yet, it was concluded that women who were not legally married saw diminished property rights (Ali et al., 2011). This is indeed a result of inconsistency between statutory laws and customary practice. Other missing indicators relate to institutional legitimacy and trustworthiness (interaction 2 and 3); balance of land restrictions; update and maintenance of land registry and associated spatial information (interaction 5 and 6); and use and enjoyment of land rights (interaction 4). In summary, none of the assessments of LTR adequately cover interaction 2 and 3. In this regard, the developed framework could be applied to reveal a clear picture of land tenure status.

Limitations and potential linkages

The systems approach behind the selection of these indicators, requires taking into consideration the environment and sub-systems of any particular system in focus (Williams and Imam, 2006). Indeed, the approach recognizes that a system cannot be assessed in isolation from the systems upon which it depends, and which in turn depends on it (Reed et al., 2005). This means that the proposed framework can serve as an input of other existing frameworks such as LGAF that focus on much bigger systems such as land governance. The framework is flexible enough to accommodate emergence of new issues, creation of new indicators, and revision of existing ones. The framework displays however a number of limitations. For instance,

due to the complexity of land tenure systems in Sub-Saharan Africa, some of the proposed indicators may not allow international comparison and benchmarking. However, those indicators can still be useful at national and sub-national level. It is also acknowledged that people's perception indicators can be in some cases subjective. To minimise the level of subjectivity, the information derived from people's perception should be cross-checked using other indicators such as the level of awareness, empowerment or institutions harmonisation. Though the framework provides a comprehensive set of indicators that has never been covered by a single assessment before, the complex nature of land tenure security necessarily means it remains challenging with regards to data collection and assessment.

Conclusion

This chapter commenced by arguing the need for pro-poor land tenure security indicators to assist land administration agencies in Sub Saharan African countries: current indicators are fragmented, discipline biased, and less sensitive to the local context of the rural poor of sub Saharan Africa. In response, this chapter aimed to develop an indicator based framework using the novel conceptual model of land tenure security of rural poor in Sub Saharan Africa (Simbizi et al., 2014a) as the basis. The goal was to provide governments and land administration agencies with an operational pro-poor tool, indicators included, to perform baseline and longitudinal studies in order to assess the achievement, and further inform, national land policy objectives.

The operationalization process made use of a systems approach for indicator selection and development. The application of a systems approach for indicators development requires two steps: 1) the identification of key components of the total system and its interactions; and 2) identification of a set of representative indicators that reflect all components of the system and their contribution to the interactions. This resulted in six baskets of indicators derived from six main interactions that together define land tenure security of rural poor. By applying the systems approach to indicator development and the notion of the indicators pyramid, this chapter came to a multi-aspects framework. To evaluate the added value of the framework, the proposed indicators were compared to the ones used in current evaluation of land related interventions in Ghana, Ethiopia and Rwanda. It was found that land administration offices may fail to improve land tenure security of the poor, since they lack key indicators that are relevant to the poor. The proposed framework provides indicators on institution harmony, legitimacy

and trustworthiness, balance of land restrictions and land rights, update and maintenance of land registry and associated spatial information. These aspects were found to be missing in all three case studies.

In conclusion, it will take some time before the global land community agrees on the number of indicators needed to measure land tenure security. In any case, a comprehensive set of indicators is required whenever the target is to provide a holistic and inclusive assessment. It is not claimed that the strength of the proposed indicators lies in their number. Instead, what matters more is the scope of aspects covered by the selected indicators and the level of sensitivity to the context of the rural poor in sub Saharan Africa. In this chapter it was proven that the systems approach to indicator development can insure a satisfying level of inclusiveness.

Chapter 4: Beyond economic outcomes. A pro-poor assessment of land tenure security after regularization in Rwanda⁴.

Abstract

In this Chapter, an indicator based framework to measure land tenure security of the poor, developed in Chapter 3 is empirically validated. This Chapter explores one area of application of the framework: evaluation of land administration intervention contribution, to the land tenure security of the poor. Thus, the framework is used as the basis for evaluating the state of land tenure security of the poor after the Rwandan Land Tenure Regularization (LTR) and the effect the later had. While existing evaluation tools and indicators tend to measure the success of land administration intervention through economic outcomes, such evaluation may not adequately inform policy makers on the situation of the poor, since such evaluations are argued to be reductionist and biased against the poor. The present framework to be validated goes beyond mere economic dimensions and attempts to capture the integrated social, legal, and technical aspects of the land tenure system. Findings suggest that although some positive economic outcomes are evident, the benefits are undermined by several new threats. These included the emergence of new state land use restrictions: the state is becoming a major source of tenure insecurity for the rural poor. The study highlights the contribution of LTR and associated legal and policy reform, in weakening existing tenure security of the rural poor.

Key words: land tenure security; rural poor; assessment; Rwanda; land tenure regularization.

⁴ This Chapter is based on a paper currently under review under Development Policy Review journal

Introduction

Land tenure security is a policy priority for the central governments of many Sub-Saharan countries, including Rwanda. In 2007, Rwanda embarked on a nation-wide Land Tenure Regularization (LTR) program with the objective of enhancing land tenure security. The program was part of broader legal and institutional reforms relating to land. LTR was designed as a set of procedures that systematically invites landowners to register their land for the first time (Deininger et al., 2010b). The process involved eight tasks: (1) Demarcation of land using aerial photographs and orthophoto to produce index map; (2) Adjudication and recording details; (3) Issuing claims receipts; (4) Recording objections and disputes; (5) Publication and review of recorded land claim, (6) Mediation period; (7) Final registration; and (8) Freehold title/land certificate issuance (Gillingham and Buckle, 2014). An estimated ten million parcels were expected to be registered nationwide. The implementation of the program was divided into two phases. The first phase (2005-2008) was mainly a preparatory phase. Starting from 2007 to 2008, field trials were carried out in three diverse rural districts (Musanze, Karongi, Kirehe) and one urban district in Kigali city (Gasabo). The second phase (2009-2013) was dedicated to the full implementation of the program. By June 2012, demarcation and adjudication of landholdings were completed. The issue of land certificate or leasehold titles was declared complete by December 2013. It was however found that a proportion of these land certificates were still to be collected, for various reasons (Gillingham and Buckle, 2014).

Similar to many other land administration programs that took place in African countries, LTR has been object of different studies that were carried out by various actors ranging from donors, through international organizations, academic researchers, and members of civil society. This has resulted into a reasonable amount of both published and unpublished reports, books, dissertations, scientific papers, among others. While existing literature on LTR focus on the overall program process (Gillingham and Buckle, 2014, Terra Firma, 2011, Santos et al., 2014) and the program early impact or effects (Ali et al., 2014, Pritchard, 2013, Daley et al., 2010); little has been done to examine the extent LTR has improved land tenure security of the rural poor. This is critical in a country like Rwanda, where 67% of the extremely poor people and 71.4% of the poor people live in rural areas and are engaged in small scale farming (Gouvernement of Rwanda, 2011).

Until recently, studies on the success of land administration programs with regards to land tenure security improvement remain dominated by the evaluation of the achievement of economic outcomes, as key indicators of land tenure security. This study doesn't claim that such studies are flawed at

any rate. We however acknowledge that evaluations focusing on economic performance may not adequately inform policy makers on the situation of the poor, since such evaluations are argued to be reductionist and biased against the poor (Mitchell et al., 2008, Hoeks et al., 2014, Smith, 2003). The international land administration community is increasingly advocating for more holistic and contextualized approaches, and methodologies, to assess land administration interventions (Anafo, 2013, Mitchell et al., 2008). This study is a contribution in that regards. It builds on recent pro-poor theoretical developments that suggest a holistic understanding of land tenure security of the rural poor (Simbizi et al., 2014a). That is the one that not only takes into account economic outcomes, but also other context specific aspects, characteristic of the land tenure systems, that are object of the study. The study seeks to investigate the status of the tenure security of the rural poor after the Rwandan LTR and the effect the latter might have had. The rest of the chapter is structured as follows: Section 2 provides the study's conceptual framework. Section 3 describes the study area and methods used. Section 4 is dedicated to results and discussion. Section 5 summarizes concluding remarks.

Conceptual framework

The global land community is yet to reach any agreement on what land tenure security means, although convergent thinking is now more prevalent. What is regarded as land tenure security in developed and emerging economies, is much controversial in Sub-Saharan Africa (see Chapter 2). The main axis of controversy is the notion of land tenure security (mainly regarded as registered individual land rights) and its anticipated economic outcomes (land market, land investment, agriculture productivity, access to credit). While supporting empirical evidences of the above economic outcomes were found in Asia and Latina America, those evidences remain inconclusive in Sub-Saharan Africa (Bruce and Migot-Adholla, 1993, Firmin-Sellers and Sellers, 1999, Smith, 2004, Deininger and Jin, 2006, Deininger and Ali, 2008).

With the emergence of pro-poor land administration movement, theoretical research is increasingly shifting from a discipline based conceptualization, towards a more inclusive understanding of land tenure security (Anafo, 2013, Simbizi et al., 2014a, Van Gelder, 2010). This aligns with the recent calls for a broader land administration vision, one that takes a more integrated approach rather than the fragmented approach (Williamson and Ting, 2001). At any rate, it seems to be agreed on that there is no one-fit-all definition of land tenure security. As a result, the available body of knowledge still provides different definitions. Therefore, before any assessment of land tenure security and effects of a land administration

program, it is worthy to decide on the definition to be used. This is crucial, since the achievements of the program will depend on adopted definition and ways to measure it. Given the focus of this study is on the rural poor, this chapter adopts the most recent conceptualization of land tenure security of the rural poor (Simbizi et al., 2014a). According to the later source, land tenure security is explained by a dynamic framework summarized in Figure 5.

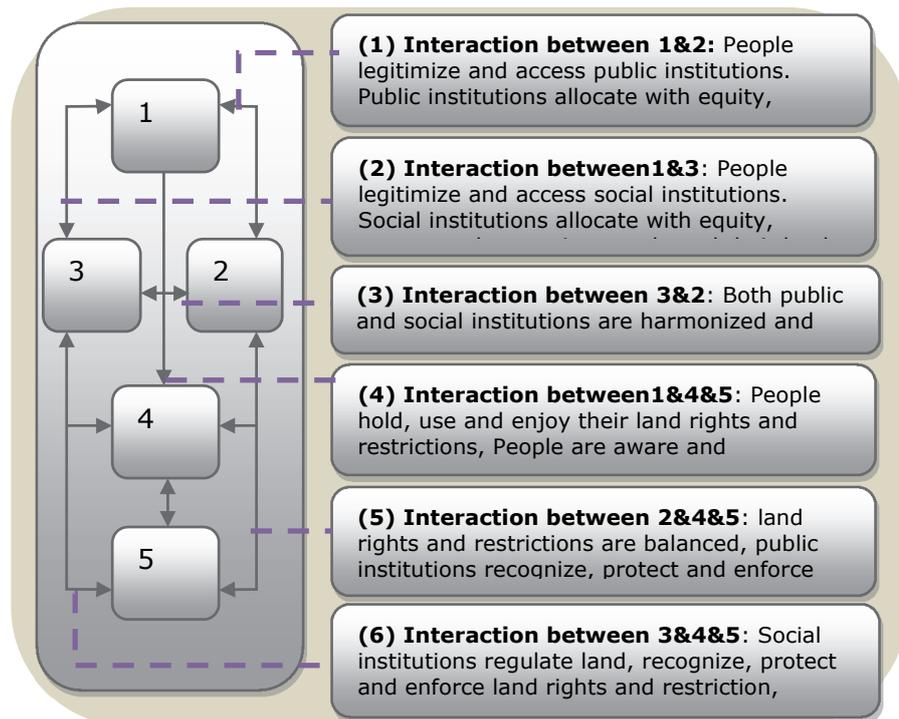


Figure 5: Land tenure security of rural poor in SSA. A conceptual framework (Adapted from (Simbizi et al., 2014a))

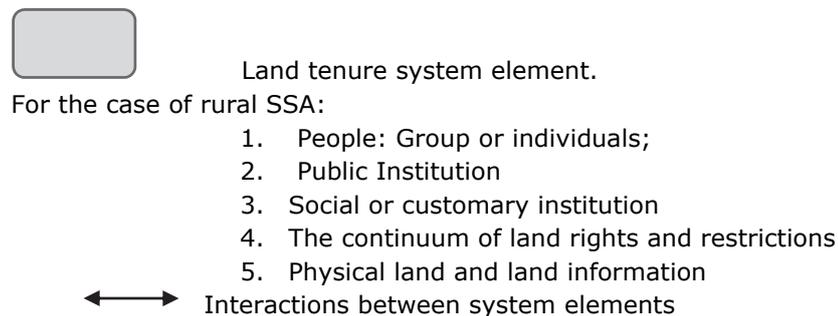


Figure 5 portrays a new conceptualization of land tenure security from systems thinking perspective; whereby land tenure security is regarded as an emergent property of land tenure systems as a whole (Simbizi et al., 2014a). It is argued that such an emergent property cannot be predicted by the examination of the systems individual parts (Georgiou, 2003). Instead, it can only be predicted by understanding the systems parts or elements and their interactions. The conceptual model includes five elements that are believed to be characteristic of most rural land tenure systems in Sub-Saharan context: people, public institutions, social or customary institutions, the continuum of land rights and restrictions, and the physical land and information about land. Land tenure security to be enjoyed by a rural poor is defined by the six positive interactions as described in Figure 2. Below, the content of each interaction is summarized. Readers of this chapter are referred to (Simbizi et al., 2014a) for a more detailed description of each interaction.

From the first and the second interaction, the sense of tenure security emerges when people's (individuals, households or community) legitimate land rights are recognized and protected by both social and public institutions. Protection of people's land rights involves firstly legal recognition of all people and their land rights. Equally, social institutions are expected to insure gender equity in terms of land rights allocation and recognition. Secondary, people should be able to access (physically and financially), trust and give legitimacy to land related institutions and related land services. Tenure security is also linked to people's perceptions on potential and actual threats that may challenge or lead to loss of their land rights. At the level of the third interaction, tenure security emerges when social and public institutions regulating land do not conflict. Though the power of each institution over land relatively varies from country to country, land tenure systems of the rural poor in Sub-Saharan Africa, always involves the two institutions. The fourth interaction concerns people and the continuum of land rights and land restrictions. At this level, tenure security means that people can make use of the whole spectrum of land rights at hand whenever they wish to do so. The model highlights the fact that security of tenure doesn't have anything to do with the substance or the duration of the land rights (Simbizi et al., 2014a). Use and enjoyment of land rights may involve cultivation, fallow, physical improvement, lease, mortgage, transfer through sale, inheritance, donation, among others. Furthermore, tenure security involves a balance between existing land rights and restrictions. At the fifth and the sixth interaction, tenure security emerges when both social and public institutions recognize, protect and enforce the continuum of land rights and restrictions. More importantly, public institutions should insure a balance between land rights and land restrictions. Tenure security equally results from the ability of public institution to manage and sustain land information

system. Social institutions should also contribute to the sustainability of land information system by reporting changes on land tenure.

The operationalization of the above concept is made at the interaction level (Simbizi et al., 2014b). For each interaction, a set of what Bossel (2001) qualifies as essential indicators; is selected (Simbizi et al., 2014b). According to Bossel (2001), essential indicators refer to the minimum set of indicators that provide a complete description of the viability and performance of the system. Viability means the ability to survive and develop, while performance refers to functions extending beyond viability requirements. Selected indicators cover qualitative or quantitative aspects and linear or nonlinear aspects. For instance, regarding the first interaction, the way people are protected can be measured using cases of land conflicts. Cases of land conflicts per se signal tenure insecurity since they are inevitable in real life, but they are also indicative when measuring the protection and enforcement of people's land rights. Other selected indicators include 1) possession of legally recognized proof of land rights, 2) walking time to reach land administration office, 3) peoples' perceptions on public service delivery, 4) peoples' perceptions on fair compensation, and 5) peoples' perceptions on public protection, 6) perceived risk to public expropriation, 7) peoples' perceptions to land redistribution, and 9) perceived affordability of land transactions. The list of all variables derived from the six interactions is presented in Chapter 3. The empirical measurement of all selected variables involves the use of multiple analysis units. In other words, tenure security can be measured at plot level (interaction 4), at household or individuals level (interaction 1, 2), at group or community level (interaction 2, 3, 6) and land administration jurisdiction level (interaction 1, 3, 5). The four analysis units are the hierarchical sub-systems embedded in the notion of land tenure security described in Figure 5.

Study area and methods

The study was conducted in Rwanda, in one of the four field trial areas located in Rwaza Sector, Musanze District, the Northern Province (see Figure 6). As previously mentioned, starting from 2007 to 2008, field trials were carried out in three diverse rural districts (Musanze, Karongi, Kirehe) and one urban district in Kigali city (Gasabo). The aim of the study was to holistically assess the state of land tenure security of the rural poor after the Rwanda's Land Tenure Regularisation Program. Indeed one of the major objectives of LTR, was to improve land tenure security through delivery of transparent and equitable systems of land administration (Government of Rwanda, 2009).

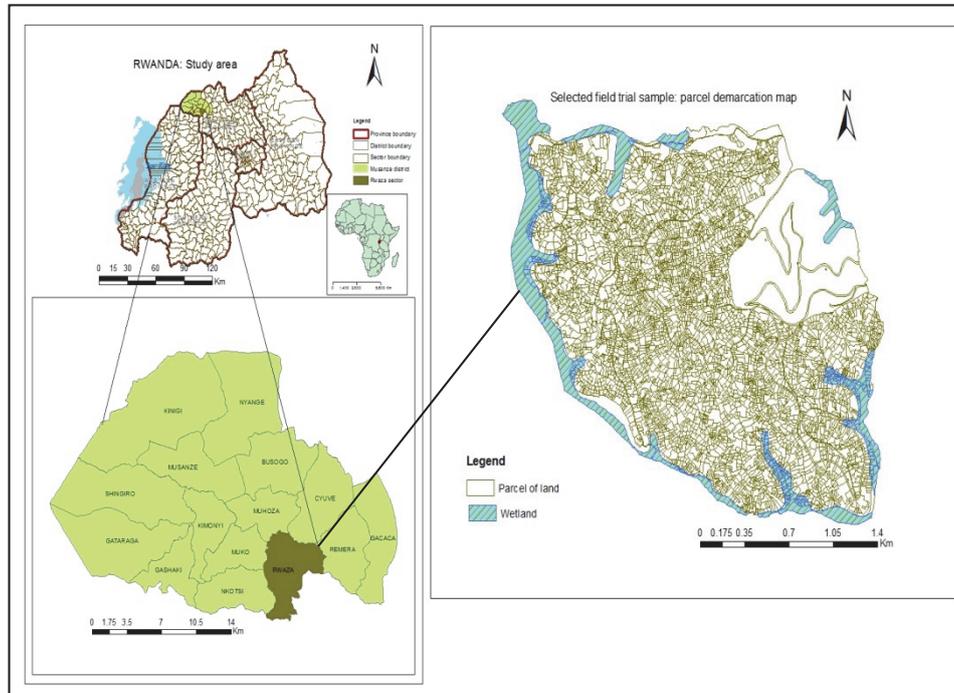


Figure 6 Study area

The choice of the above mentioned study area is mainly justified by the focus of this study which is land tenure security of the rural poor. Indeed Musanze field trial sample (Kabushinge Cell) is rural and predominantly made up of poor small holders with the mean land holding size of 0.08 hectares, compared to the national mean of 0.35 hectares (Government of Rwanda, 2011). The latter source indicates that the large proportion of the poor (more than 70%) is engaged in small farming. Countrywide, this field trial area, was selected as representative of small holdings land tenure systems. It is believed that the study area constitutes a good choice to assess the state of tenure security of rural poor, five years later after an intervention.

Study design: The triangulation design

Since the adopted conceptual framework involves investigating different analysis levels, triangulation is found to be the most appropriate study design. Triangulation design is the most common and well known approach to mixed research methods (Creswell, 2003). The choice of a mixed methods approach is not a hazard. The nature of this study clearly shows that no

single method can fully address the central inquiry. The use of the approach has proven to be highly appropriate, especially when performing assessment of multi-aspects concepts such as Spatial Data Infrastructure (Crompvoets et al., 2008, McDougall, 2006). The study was designed as a multi-level model of triangulation (Figure 7). In a multi-level model according to (Creswell, 2003), qualitative and quantitative methods are used to address different levels within the system. The findings from each level are merged together into one overall interpretation.

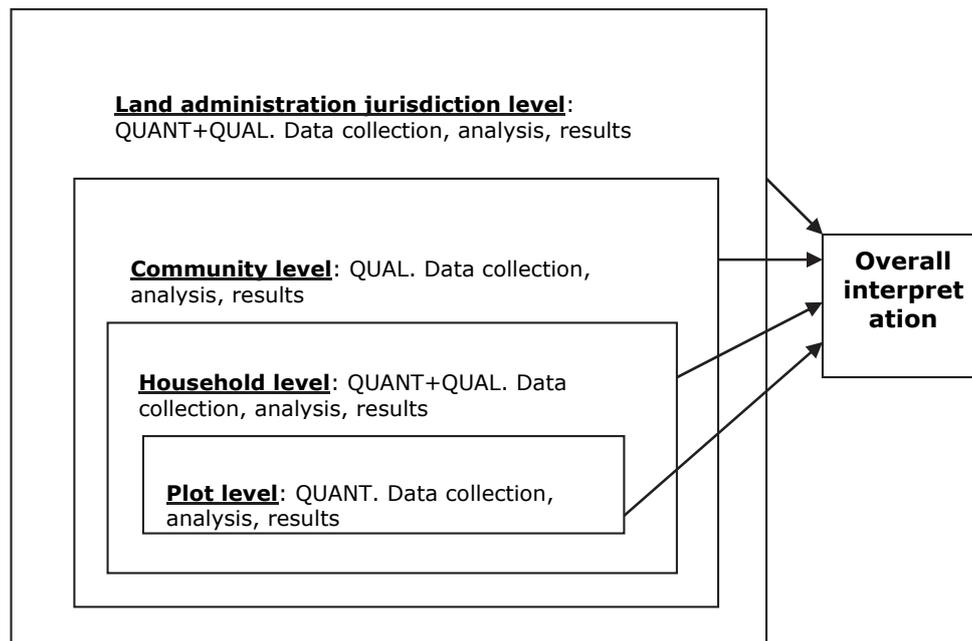


Figure 7 Study design: a multi-level triangulation design (adapted from (Creswell, 2003))

From Figure 7, four levels of analysis involving a mixture of qualitative and quantitative data collection and analysis are considered. A survey was carried out to obtain information at household and plot level. Semi-structured interviews and documentation analysis were used to collect data at community and land administration jurisdiction levels: district and country.

Data collection and analysis

Data collection took place in the Northern Province between February and March 2013. Methods used to collect data range from household survey, document review and analysis, and semi-structured interview. Household survey randomly targeted rural poor households of Kabushinge Cell, in Rwaza

Sector, Musanze District, Northern Province. The definition of 'poor' was based on poverty categories as defined by the "Ubudehe" (meaning in local Rwandan language a collective effort employed to solve social problems) program. This program was initiated in 2001 by the Government of Rwanda, through the Common Development Fund (CDF) as part of the Poverty Reduction Strategy Paper. The program categorized Rwandans into six categories based on economic status of each household. The four first categories include from the poorest to the resourceful poor households. The fifth and the sixth categories comprise households qualified as relatively rich: owning big land, cattle, cars, among others. Our sample was drawn on the four categories of the poor. A stratified and proportional random sampling was applied (Table 7). The first stratum was made by the poor households distributed per eight villages. The second stratum was based on the gender of household head for each village. In total 416 households were selected out of the entire population made out by 1137 households. The household survey was made by means of a questionnaire administered through a face-to-face mode. The questionnaire consisted of a mixture of closed, semi-closed and 5-points Likert scale questions. In the end, 411 questionnaires equivalent to 98.7% of administered questionnaires were successfully completed. Data entry was made using IBM SPSS 22. Using the same software, statistical analyses including, descriptive statistics, cross tabulation, and logistic regression model were performed.

Documents review and analysis was performed in order to have an understanding of the issues linked to this chapter research questions. First of all, written reports were examined to collect statistics and to understand the trend of land disputes cases at cell, sector and district level. Secondly, available manuals, land related legal and policy documents were reviewed in order to understand processes involved in land transactions, land information collection and updating. The same documents were also used for the analysis of land related public institutions with regards to the existence, substance and harmony of existing land regulations and policies. Semi-structured interviews were conducted to supplement information obtained from reviewed documents. The researcher performed a purposive sampling (Kumar, 2005) to select, in total, eight interviewees. These consisted on one hand with four professionals working in centralized and decentralized public land governance institutions. On the other hand there were four ordinary rural peasants with preferably advanced age.

Results

In this section, combined results from the household's survey, the interviews and documentation analysis are outlined. Results provide a full description of the state of land tenure security after the LTR with respect to the theoretical

framework. Whenever possible, results on how LTR has contributed to the general state of land tenure security are also provided. Descriptive results are first provided, followed by regression results on the effects of LTR. Prior to the overview of the findings, Table 7 provides a description of this study sample.

Table 7 Descriptive statistics of sampled households

	N	Mean	Std. Deviation
Age of the respondent		49.25	16.200
Size of HH		4.60	2.246
Male HH members		2.26	1.506
Female HH members		2.36	1.357
Male HH members below 15 years		.91	1.047
Female HH members below 15 years		.83	1.015
Male HH members above 65 years		.08	.268
Size of the total plot holding in Hectare		0.274	0.252
	N	Frequencies (%)	
Heads with or no primary education		64.1	
Female headed households		21.1	
Heads aged between 21-65 years		84	
Heads above 65 years		15.8	
Legally married couples		92	
	421		

Source: Authors' survey February-March, 2013

From Table 7 the mean size of sampled households is 4.6 (compared to 4.3 national wide). The share of households headed by female is 22.1% compared to 28.7 %at national level (Gouvernement of Rwanda, 2014). Generally households are headed by a legally married couple (92%). The sample includes also households headed by illegally married couples (2.9%), and single mothers (1.9%). In total, 64.1% of the sampled household heads have no or incomplete primary education.

Interaction 1: People vs Public institution: Land rights protection, recognition and public institutions legitimization

At this level, land tenure security emerges when on one hand, public institutions allocate land with equity, protect and recognize people and their land. On the other hand, people should be able to access and legitimize those

public institutions. Data related to this interaction were all obtained from the household survey and the documentation review and analysis.

Table 8: Tenure security resulting from the interaction between people and public institution

	Percent	Mean	Std Deviation
Households whose plots are affected by land conflict	5.3		
Perceive that public institutions recognize and can protect his/her land right whenever challenged	98.6		
Perceive corruption in public institutions in charge of land	14.8		
Have land certificate (for at least one plot)	95.4		
Have land certificate of 100% of plot holding	51.9		
Is satisfied on public service provision	98.3		
Perceive that the fee charged for land transaction is high	81.3		
Perceive the risk of public expropriation	50.9		
Perceive that compensation is fair	11.2		
Perceive the risk of government land redistribution	13.8		
Walking time (in minutes) to the district		148.9	33.540

Source: Authors' survey February-March, 2013

From Table 8, people's rights in land are legally recognized and registered as a result of LTR. However, 4.6 percent of survey households still don't have the associated land certificates, even though the study area was covered by a systematic land demarcation and titling five years prior. A closer look at plot level shows that even within the 95.4 percent that have declared having a land certificate; the rate of certified plots varies. For instance only 51.9 percent of the sample population hold land certificates for all plot holdings. The main reasons for not having certificates was the failure to pay required fee, plots being declared wetlands, mistakes in certificates, a disputed plot, and missing spouse identification card. Perceptions on public protection, recognition and the level to which people legitimize public institutions are mixed. On the one hand it is perceived that public institutions recognize and protect land rights whenever challenged. Moreover, 98.3 percent of surveyed households claim satisfaction with public service delivery, and more than 70 percent didn't perceive corruption of land-related public institutions. On the other hand, findings indicate a number of threats to land tenure security: perceived fair compensation, perceived risk to government expropriation, and the perceived affordability of the fee required for land transactions, were all

evident. Physical access to the public institutions in charge of land remains a problem. The mean walking time to reach the district office or district court is 148 minutes, nearly to 2 and half hours. With regards to land conflicts, only 5.3 percent of surveyed households reported having plots affected by conflict. In the same vein, a decrease in the number of land conflict cases was reported at Cell level between 2007 and 2013 (Figure 8).

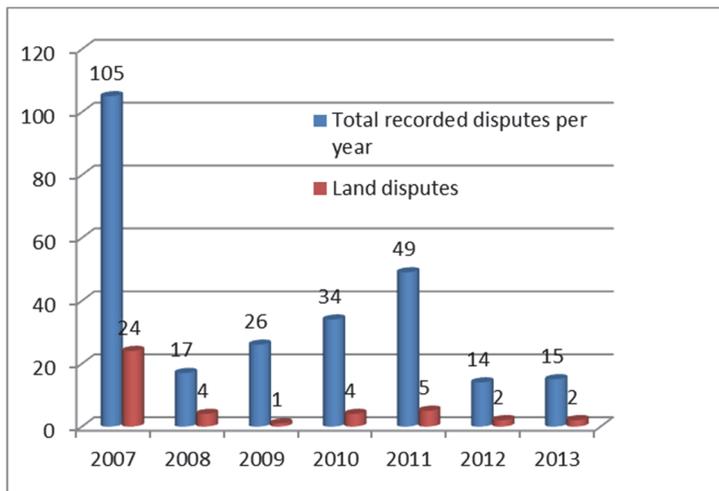


Figure 8 Land disputes recorded from 2007-2013 at Cell level (Source: Kabushinge Cell reports 2007-2013)

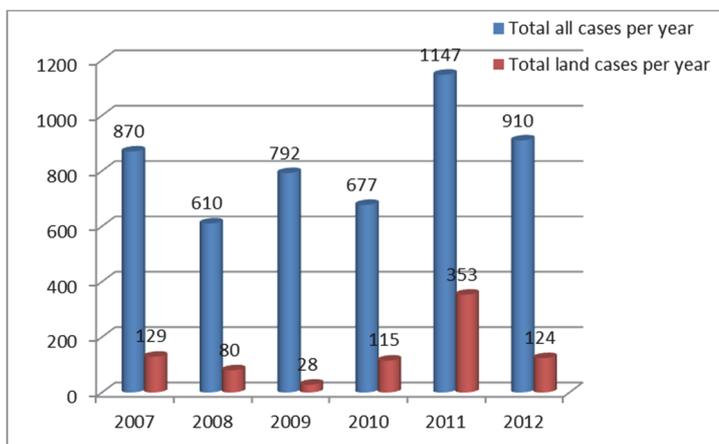


Figure 9 Land disputes cases recorded by the district court from 2007-2012 (Source: Musanze District Court Archives 2007-2012)

The evolution of land disputes cases reported to the district court (Figure 9) didn't however follow the same trend. This can be explained by the fact that the rest of the district wasn't yet covered by the LTR until the end of 2013.

Therefore, the ongoing adjudication process might have contributed to the fluctuations of unresolved land disputes reported.

Interaction 2: People vs social institutions

The following indicators were used to assess land tenure security resulting from this interaction: 1) the proportion of landless households; 2) land conflict cases; 3) women inheritance; 4) perception on equal right to inheritance between boys and girls; 5) perceived eviction risk; 6) perceived customary institution service delivery; and 7) corruption. It was found that the mean size of the total plot holding is 0.274 hectares. The majority of surveyed household may be considered as landless following the FAO criteria that considers that a farming unit should be at least 0.90 hectares to be economically viable. Regarding land conflict cases, it wasn't possible to collect data on land conflicts reported to social institutions: there were no records. Contrary to other African countries where a traditional authority may be source of insecurity (Ubink, 2007), more than 80 percent of surveyed households perceive that social institutions are faster and do not involve corruption when it comes to the process of land conflict resolution. Results confirmed the inequity in terms of land allocation that is characteristic to social or customary institutions in many Sub-Saharan countries. Land inheritance, which is the main mode of land acquisition, is essentially done through male inheritance. Only 11 percent of surveyed households reported having acquired their land through female inheritance. Furthermore, the mean plots acquired through women inheritance remains smaller (0.23) compared to the mean plots acquired through husband inheritance (2.9). Results however give hope that future generations of men and women may enjoy equal rights to inheritance: perceptions on boys and girls equal right to land inheritance are positive. Perceived risk to eviction by community members is relatively low (26.5 percent feel the risk).

Interaction 3: Institutions harmonization and legitimization

For this interaction, the aim was to assess the level of harmonization between the two institutions and the way they recognize another. The following indicators were used: 1) the type of customary land rights not recognized by statutory law; 2) the type of customary authority not recognized by public institutions; 3) the type of statutory land laws not recognized by social institutions; and 4) the areas of inconsistency within statutory land related laws and policies (conflicting provisions). Data used were obtained from documentation analysis and the semi-structured interviews (Table 9).

Table 9 Areas of inconsistency within statutory land related laws and policies

Reference 1: law/policy	Reference 2: law/policy	Description: Inconsistencies/conflicting provisions
Organic Land Law (OLLL)(Law n° 08/2005 of 14/07/2005): Article 4	Law regarding Matrimonial Regimes, Family Donations and Succession (Law No 22/99 of 12/11/1999 Article 38, 39, 45, 70	Article 4 of the OLL stipulates equal right to land and prohibits any form of discrimination based on sex in relation to access to land and enjoyment of rights. This article is inconsistent with the Law on succession (Article 38, 39, 45, 70) Provision of article 38 prohibits any form of discrimination when it comes to right to inheritance, but doesn't prescribe equal treatment between male and female children. Further Article 39 stipulates that ascending partition is given voluntarily by parents. Article 45 stipulates equal succession of legitimate children. Article 70 stipulates succession models that basically protect only the legal children and wife
Organic Land Law (Law n° 08/2005 of 14/07/2005): Article 14, 17&19	Organic Land Law (Law n° 08/2005 of 14/07/2005): Art 10	<ul style="list-style-type: none"> • Art 14 of OLL defining the state land in the private domain as land that doesn't belong to public institutions or individuals. This category includes unprotected swamp/marshlands which were acquired and owned by individual through customary channels. As results, those owning marshland didn't receive land certificate, which means they don't have right to that land according to Article 17. • Article 19 defining swamp land tenure • Both Article 14, 17 and 19 are inconsistent with Article 10 defining individual land
Organic Land Law (Law n° 08/2005 of 14/07/2005): Art 10	Law on Prevention and Punishment of Gender Based Violence (Law 59/2008 of 10/09/2008 (Article 6)	<ul style="list-style-type: none"> • Article 10 stipulates equal protection to rights over land acquired from both customary and statutory law. But in practice this law and other supporting laws protect legal wife and children For instance, Art 6 of Gender prevention law stipulates that in case of divorce rights of children from the spouse shall be taken into account
Law regarding Matrimonial Regimes, Family Donations and Succession (Law No 22/99 of 12/11/1999) Article 39	Law regarding Matrimonial Regimes, Family Donations and Succession (Law No 22/99 of 12/11/1999) Article 45	<ul style="list-style-type: none"> • Article 39: the ascending partition is given by parents voluntary

Source: Government of Rwanda archives

It was found that the statutory law recognizes customary land rights mainly individual land ownership. However, there are a number of customary land

rights and practices that are not integrated into the statutory land law. For instance,

- The right to land subdivision, a common customary practice when it comes to land transfer (inheritance, selling), is not recognized by the statutory law.
- The statutory law doesn't protect rights to land of illegal wives or those in polygamous relationships.

In addition to the above, land rights not recognized by the statutory land law, that is, existing customary land rights, have been weakened or restricted. For instance, customary individual land ownership is reduced to lease rights. Individual ownership of marshland is abolished and reduced to use rights. Use rights of land are restricted through land consolidation and crop intensification. The formal recognition of traditional authorities are not made explicit in the statutory laws. However, the interviews revealed that family/clan leaders are still used to resolve land conflicts, though their power or decisions may be revoked by public instances. On the side of public institutions, there are a number of laws that are not yet integrated into social practices. For instance, statutory procedures for land transfer as prescribed by the revised organic land law (prior consent to transfer of land, consent in an authentic document signed, and before the notary), equal land succession/inheritance between male and female children, land subdivision, to name few. Within public institutions, inconsistencies and areas of conflict were identified between land related laws and policies.

Interaction 4: Use, enjoyment of land rights and awareness on land restrictions

For this interaction, the study examined how people use and enjoy their land rights on the one hand, and how people are aware and empowered about land rights and existing restrictions on the other. Table 10 summarizes some descriptive results of used indicators.

Table 10 Use, enjoyment and restriction of land rights

	Percent	Mean	Std Deviation
Number of plots leased		1.17	1.732
Number of plots acquired through purchase		2.44	2.694
Households that lease in land	48.5		
Has purchased land in the past five years	18		
Has acquired land through purchase	69.7		
Has acquired loan using land as a collateral	11.4		
Have sold land in the last 5 years	6.3		
Perceived awareness on land restrictions	98.6		
Has invested in cash crop	1.7		
Has invested in terracing	32.5		
Has invested in forest	54.4		
Has invested in anti-erosion structure	85.2		
Are aware on land restrictions affecting their land	98.6		

Source: Authors' survey February-March, 2013

From Table 10, almost half of the surveyed households (48.5%) are 'leasing-in' land. Surveyed households are more involved in land purchase (18 %) than land sales (6.3%). Land purchase is the main mode of land acquisition and holds almost the same share (mean plots acquired through purchase 2.4) as inheritance. It was difficult to determine the exact agriculture land rental price and sale price given that there was no information on the size of leased or purchased plots of land. The prices presented here were calculated using the mean size of the plot in the study area, which is 0.078 hectare. The land rent price per year is estimated at 141 USD per hectare. The sale price is estimated to 6347 USD per hectare. The use of land as a collateral to acquire loan was reported by 11.4% of surveyed households. Different levels of involvement in land investment were observed with the big proportion of surveyed households in anti-erosion structure building (85.2%). This can be partly explained by the fact that the study area is extremely hilly with steep slopes, but also by the government efforts in soil protection. Households were asked whether they are aware of existing land restrictions affecting their land. Though all surveyed households answered positively, their knowledge is limited to restrictions regarding soil protection.

Interaction 5: Land restrictions, land information management

Land tenure security was assessed looking at how land rights and land restrictions are balanced, cases of land grabs, the land information management, and its sustainability. To assess the management of land information and its sustainability, the following indicators were used: 1) the proportion of land registered; 2) the coverage of the land recorded in land information system; 3) the proportion of registered land sale; 4) the proportion of registered land inheritance; 5) the average time to complete land sale registration/land inheritance registration; and 6) the type of land rights recorded in a land information system.

It was found all land in the study area is registered and recorded in a land information system managed at provincial level. Registered land rights include individual land ownership (joint ownership in case of legally married couples), and group land rights. The average time to complete land transaction registration (including the update of land information system) is officially set on 15 to 30 business days, starting from the day the request is submitted to the district and officer. Before reaching the district level, land transactions involve another process downstream (cell and sector level), that may take up to 10 business days. The review of the district land transaction registry demonstrates that there was no single rural land sale, land inheritance or land succession (at least the ones from the study area) that was reported at the district land bureau. The household survey revealed however that 18 percent of the households had bought land within the last five years, while 6.3 percent have sold land (see Table 10).

With regards to land restrictions, three indicators were used: 7) the type of public land restrictions affecting private land and the proportion of; 8) the affected households; and 9) the plots. The major land restrictions affecting the study population include land use related restrictions, land subdivision, and ownership of wetland/marshland. Land use restrictions relate to rights to land grazing and land consolidation. It was found that 73.3 percent of surveyed households are affected by land consolidation. That is, joining adjacent fields and consolidating agricultural production by planting the same crop approved by the local government. At plot level, the mean of plots affected by land consolidation was calculated at 1.84. In this study area, like in the rest of the country, people are banned from pastoralist land grazing and restricted on the ownership of wetland (27.4 of surveyed households have at least one plot of land declared as wetland). Restrictions on land subdivision, though found not yet effective, concern plot sizes less than one hectare, meaning that the whole study population is affected.

Interaction 6: Social land rights and restrictions and land information management

Land tenure security at this interaction was assessed looking at social land rights and restrictions and how these are integrated in the land information system. Three indicators were used: 1) the type of communal or group rights recorded in the land information system; 2) the type of customary land restrictions and affected households; and 3) the type of customary land rights not recorded in a land information system.

It was found that the established land information system accommodates both individual and group land rights. Individual land rights include also land rights of single women, and illegal wives who owned land during the time of the first time land registration. In the study area however, typical communal land holdings (mainly kept for grazing and regulated by the tribal/clan leaders) do not exist anymore. The remaining forms of customary group rights in the study area are mainly relate to family land waiting for succession. Customary land restrictions are not felt. From the interviews however, it was learnt that family leaders seem to determine and enforce who can buy land. In most of the cases, preference is given to members of the family or any other person known to the family. This is likely to happen when a female widow needs to sell land. The same occurs when married girls have to share land with their brothers at the time of land succession.

Effects of LTR

LTR was undertaken as a remedy to land tenure security issues in Rwanda. This study has examined the influence of the fact of having a land certificate to a number of outcome indicators. Selected indicators are mainly those that were anticipated by the government. Given the nature of our data, a Chi-square test for independence (Table 11) was used for categorical outcome variables. This is followed by the empirical assessment of the magnitude of the effect of LTR on some outcome indicators using logistic regression analysis (Table 12, Table 13, Table 14).

Table 11: Chi-square test of independence

Variables	Results Chi-square test for independence	Description
Plot affected with land conflict and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .116, p = .041, \phi = -.11$)	significant relationship (with a small effect ⁵)
Perceived risk to expropriation and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .000, p = 1.00, \phi = -.006$)	No significant relationship found
Perceived risk to community eviction and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .26, p = .60, \phi = .033$)	No significant relationship found
Perceived fair compensation and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .28, p = .59, \phi = .037$)	No significant relationship found
Purchase of land in the past 5 years and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .68, p = .40, \phi = .050$)	No significant relationship found
Investing in terracing and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = .86, p = .76, \phi = -.022$)	No significant relationship was found
Investing in forest and Household with certificate of more than 50% of plot holding	($\chi^2 (1, n=412) = 13.5, p = .000, \phi = .18$)	Significant relationship

⁵ Cohen's (1988) criteria: .10 small effect, .30 medium effect, .50 large effect

Table 12: Logistic regression predicting the likelihood for a household to invest in forest

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1a HH has certificate of more 50% of plots	1.118	.302	13.736	1	.000	3.058	1.693	5.523
HH is headed by a male	.144	.245	.343	1	.558	1.154	.714	1.867
HH has primary education and higher	.575	.216	7.106	1	.008	1.777	1.164	2.711
Constant	-1.097	.355	9.532	1	.002	.334		

a. Variable(s) entered on step 1: Certification_dummy, GenderHHH_dummy, HHH_Full_prim_ed_dummy.

Source: Authors' survey February-March, 2013

Table 13: Logistic regression predicting the likelihood to acquire loan using land as a collateral

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1a HH has certificate of more 50% of plots	.501	.640	.611	1	.434	1.650	.470	5.789
HH is headed by a male	-.557	.435	1.639	1	.200	.573	.244	1.344
HH has primary education and higher	.874	.331	6.978	1	.008	2.395	1.253	4.580
SizeHH	.154	.077	4.003	1	.045	1.167	1.003	1.357
Number of Plots	.149	.054	7.472	1	.006	1.160	1.043	1.291
HH has invested in Forest	.471	.411	1.310	1	.252	1.601	.715	3.584
Constant	-4.404	.762	33.436	1	.000	.012		

a. Variable(s) entered on step 1: Certification_dummy, GenderHHH_dummy, HHH_Full_prim_ed_dummy, SizeHH, NberPlot, Forest.

Source: Authors' survey February-March, 2013

Table 14: Logistic regression predicting the likelihood of for a household to report a land conflict

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1a								
Certification_dummy	-1.135	.504	5.080	1	.024	.321	.120	.862
GenderHHH_dummy	.206	.605	.116	1	.734	1.229	.375	4.021
HHH_Full_prim_ed_dummy	.001	.466	.000	1	.998	1.001	.402	2.494
SizeHH	-.085	.114	.564	1	.453	.918	.735	1.147
NberPlot	.097	.077	1.609	1	.205	1.102	.948	1.281
LandConsol	-.047	.572	.007	1	.934	.954	.311	2.927
Constant	-2.246	.797	7.935	1	.005	.106		

a. Variable(s) entered on step 1: Certification_dummy, GenderHHH_dummy, HHH_Full_prim_ed_dummy, SizeHH, NberPlot, LandConsol.

Source: Authors' survey February-March, 2013

From the above tables it was found that having certified plots doesn't remove the fear of being expropriated, or evicted by community members. Equally, having land certificate doesn't guarantee the perception on fair compensation or buying land.

Discussion

The central inquiries to this study that were previously introduced can be simplified as follow: given the primary objective of the Rwandan LTR was to provide land tenure security: (1) what is the state of tenure security of rural poor after LTR, (2) what is the actual or potential contribution of LTR on the observed state of tenure security. In the following paragraphs, the state of land tenure security is first discussed. Results are grouped into two categories consisting on one hand with acquired positive aspects of tenure security and on the other hand with actual or potential threats to the existing positive aspects. Actual threats to tenure security here refer to what didn't work or very serious issues that are likely to undermine the positive aspects. Potential threats represent minor issues that may evolve into actual threats if not addressed. Second, the effects of LTR on selected outcome indicators are discussed to reveal the contribution of the program to the achievement of Rwanda's central land policy objective.

What is the state of land tenure security of rural poor after LTR?

Findings highlight a number of positive aspects with regards to land tenure security that rural poor are currently enjoying as a result of LTR. Existing social or customary land rights (individual and group land ownership) are

now legally recognized. Legal recognition is made concrete by registration of existing land rights and issue of proof of land ownership (land certificate) to all land holders. In the same line of legal recognition, land holdings boundaries have been demarcated and recorded in a spatial land information system. Furthermore, some prerequisites for land rights protection are established. A number of laws, decrees, policies, manuals have been enacted and land governance institutions set in place at central and local level. The observed positive perceptions of rural poor towards both social and public land governance institutions are good indicators on the level of trust and legitimization of those institutions. This suggests that rural poor are confident that their land rights can be protected whenever challenged and therefore they can make use of existing institutions. The notion of trustworthiness (Zevenbergen, 2002) and legitimacy of land rights and associated institutions (FAO, 2002) are regarded as ingredients of land tenure security. The decrease in number of land conflicts is a confirmation of effective land right protection, though the same trend doesn't tell much on the efficiency of the process of land conflict resolution. The decrease of land conflicts is also a good indicator on the certainty over land rights. Results show that land conflicts decreased over a period of past five years, since the issuance of the land certificates. Land rights of legally married wives have been strengthened and are protected by the newly established legal framework. This finding is consistent with results from previous studies (Ali et al., 2014, Santos et al., 2012). This is very significant for the security of women, considering that the same women risk losing land in the case of their husband's death, divorce or their husband taking another wife (Santos et al., 2014). Findings on the ability to use and enjoy land rights, and how land rights are balanced with existing land restrictions reveal positive news. Surveyed households are involved in land market activities (sale, purchase, rental, use land as collateral to acquire loans); and land improvements including cultivation or physical land investment (buildings, forest, soil protection structures, terraces, cash crop). Furthermore, land rights can be transferred through inheritance, succession or donation. From the market based approach, the observed level of land rights transferability is considered as a strong aspect of tenure security.

The study results reveal serious issues (or threats to tenure security of rural poor) that directly undermine the above outlined positive aspects. Firstly, land itself and access to it, is an issue and is under continuous pressure. The majority of the rural poor that were object of this study would be qualified as landless considering the threshold below which a farmer can no longer meet his family's basic nutritional requirements from agricultural activity alone. According to FAO, a farming unit should have at least 0.90 ha to be economically viable. The scarcity of land combined with existing land restrictions on land subdivision, is likely to contribute to land conflict at the

time of land inheritance or succession. Secondly, gender based inequity in terms of land inheritance is still evident and characteristic of social institutions that dominate land allocation among rural poor. These inequities are likely to continue at least for the current generation, since they have been endorsed through the new succession law. Article 39 of Law No 22/99 of 12/11/1999 stipulates that ascending partition is given voluntarily by parents. This is the existing social practice that basically favors male children over female. However, perceptions on equal right to inheritance between boys and girls indicate that in the future, young generations may enjoy equal treatment to land access. Third, the perceived certainty over land rights is undermined by the fear of public expropriation and unfair compensation. The public expropriation is likely to happen anytime looking at different development programs going on in the country. To illustrate this, one may think about the new resettlement policy that aims at relocating rural dwellers and grouping them in villages. Fourth, efforts to harmonize social and public land governance institutions have contributed to the vulnerability of the land rights of so-called 'illegal wives', which were in some cases protected by social institutions. Although existing land rights of illegal wives in a polygamous marriage were recognized and registered, those illegal wives don't have rights to land inheritance.

Furthermore land rights of wives under polygamous marriage are not protected by the statutory framework in place. Still talking about the harmony between social and public land institutions, there still exists conflicting practices such as land ownership transfer procedures. For instance findings show that the study population hasn't yet adopted statutory procedures for land sales. Instead, a new practice has emerged out of land sale whereby a land seller hands over the land certificate to the land buyer. Such practices imply that the land registry and the spatial land information system are already getting outdated, making it therefore difficult for district land offices to catch up. Fifth, while a high proportion of the study population is clearly depending on land use rights (land rental, group rights), those land use rights are weakened by existing land restrictions through land consolidation. Sixth, the rural poor are constrained by the long distance they have to undertake in order to reach districts land offices. Accessibility of these institutions is equally threatened by the affordability of the fee charged for land transaction or land conflict resolution process, perceived to be too high. These issues are likely to undermine the trust and the willingness of people to make use of existing land institutions: findings show that land transactions are not reported to the district land offices. Seventh, the organic land law and other supporting legal tools contain conflicting and inconsistent provisions that may undermine their role ensuring legal protection and enforcement of rural poor's land rights. For instance, the organic land law stipulates equal protection to rights over land, without any gender

discrimination; however, in practice this law and other supporting laws protect legal wife and children. For instance, Art 6 of Law on Prevention and Punishment of Gender Based Violence (Law 59/2008 of 10/09/2008) stipulates that in case of divorce rights of children from the spouse shall be taken into account.

The aspects of land tenure security here grouped into the potential threats category are minor issues since they affect a small proportion of the study population. However, some of these issues may fall into the actual threat category if not dealt with in the short to medium term. The perceived risk of land redistribution was not found as a threat. Since past experiences are likely to shape present perception, this may suggest that, contrary to the other parts of the country, the study area didn't experience cases of land redistribution. Though LTR is believed to be implemented at low cost and made affordable to the poor, results reveal that was not the case. The study area still has a small proportion of household that haven't yet certified the whole plot holding due to the failure to pay the required fee: 1000 Rwandan Francs (approximately 1.44 USD) per plot. This occurred even while the land registration fee was waved for the study area because it was selected for field trial: only those who had plots of land outside the study area had to pay. Existing social land rights such as ownership of wetland have been weakened by the new land regulation framework and reduced to use rights. The level of awareness on land restrictions is still low and this may give rise to the perceived insecurity. For instance when asked the reason why they didn't have the certificate (for the case of plots defined as wetlands); surveyed households appeared to suggest their land was grabbed by the government: "I don't have a certificate of that plot because they said it is a wetland, while plots of my neighbours next to my plot were not defined as wetland".

What is the contribution of LTR to the state of land tenure security?

LTR was used as a tool to implement the national land policy. It should be remembered that the central objective of the national land policy was providing land tenure security. In this regard, the main objective of LTR was to provide tenure security of land ownership through land registration and issue of land certificates. The acquired land tenure security was expected to materialize through the reduction of land conflict, certainty in land ownership, stimulation of land market, promotion in land investment and security of credit. Using plot level data, the relationship between plot certification and a number of outcome indicators was analysed. Given that it was not possible to have a treatment and control group, we use differences in the proportion of

certified plot holdings. For this, two categories are created: a category who have at least more than 50 percent of their plots certified, and the one who have none or less that 50 percent of certified plot.

LTR has significantly contributed to the observed reduction of land conflicts in the study area, however, with small effect. That is, households who have more than 50 percent of certified plots, are 0.321 times less chance to report a land conflict compared to households who have none or less than 50 percent of plots is certified. In other words, the likelihood of reporting a land conflict is likely to drop by 1.135 with an increase in the proportion of certified plots. Due to limitation of this study data, it wasn't possible to know which type of conflict was most affected by LTR. Following the program expectations, one would expect a considerable drop of cases of land ownership dispute as a result of acquired certainty over land after the issue of land certificate. However, this may not be the case, since this study didn't find any evidence to prove that LTR has strengthened the certainty over land ownership. Results suggest that having a land certificate doesn't remove the perceived fear of being expropriated by the public instances or evicted by community members. This is consistent with what was found in Ethiopia (Rahmato, 2009). Though registering land and the possession of land certificate is believed to improve land compensation in case of expropriation, it was found that having a land certificate doesn't give confidence of gaining fair compensation.

Results of this study are consistent with the findings of the baseline study (Sagashya and English, 2010) that predicted more involvement in rental market than in land sales after land registration. However, having a land certificate was not found to significantly influence the land rental market or land purchase. This indicates that in absence of land title to land, rural land market can still be active. While our results suggest that LTR didn't affect land market, it might have affected the value of land. Unfortunately, with the data in hand, it is quite difficult to assess how land values have been affected in absence of baseline data. The contribution of LTR on land investment was found little compared to the program expectations. While significant effects of LTR were found on investment in forests, the effect of LTR on other types of land investments (cash crop, terracing, anti-erosion structure) remain insignificant. Furthermore, the study reveals that the possession of land title is not the only predictor of the likelihood to invest in forest. The level of education of the household head (those with primary education or higher) appears to significantly affect the investment in forest as well. Though a reasonable proportion of surveyed households were involved in land terracing, this wasn't an individual initiative, it was a district project sponsored by local non-government organizations. This study didn't find evidence to support the fact that having land certificate would increase

access to credit. The contribution of LTR in this regards, was not significant. Instead, land size and the level of education of the household head were found to be the good predictors. Finally, findings on the contribution of LTR to the land tenure security of the rural poor suggest that LTR expectations were exaggerated: the major criticism towards land interventions of this kind appears to have been realized.

Concluding remarks

While so far a series of studies and reports were conducted to examine the processes, effects, potential and early impacts of the Rwandan LTR, this study aimed to add another layer of data with special focus on land tenure security of rural poor. Having in mind that land interventions of this kind are reputed to be biased against the poor, the main motivation was to investigate the overall state of land tenure security of rural poor and how this have been affected by LTR: What has worked out? What didn't and why? What lessons can be taken away from the LTR process? In other words, the study investigated the extent to which LTR contributed to the achievement of the central objective of Rwandan national land policy: improving land tenure security. Accordingly, a pro-poor perspective was applied in order to empirically assess the state of land tenure security of the rural poor, in one of the areas that were covered by LTR (five years prior). The study applied a theoretical model of tenure security that goes beyond economic outcomes to capture other important contextual aspects of the land tenure system as a whole.

Though results highlight challenges surrounding land tenure security of rural poor after LTR, the study acknowledges the successful efforts accomplished by the Government of Rwanda while implementing such an ambitious program. Looking first at how the rural poor have benefited from LTR, given the program pre-defined benefits, this study adds evidences to the broader debate on the effect of land interventions such as LTR. Our results support the assumption that land registration and issue of title contributes to a decreasing number of land conflicts; the possession of a land certificate was found to be a predictor for investment in forests. Though findings prove the existence of an active land market and the use of land certificate to acquire different forms of loans, the possession of a land certificate was not statistically significant in influencing such outcome, as was anticipated. Equally, the study didn't find evidence to support the idea that possession of a land certificate increased certainty over land ownership. Findings strongly suggest that perceived tenure insecurity persist, despite the possession of a land certificate.

Examination of more contextual aspects reveals that the benefits of LTR are overcrowded by an existing cluster of threats to land tenure security. The study takes a step further to show the contribution of LTR in actually weakening land tenure security of rural poor. On one hand, LTR has enabled legal recognition of existing land rights, especially the land rights of women, the establishment of gender sensitive land policies and legal framework, the reduction of land conflict, the boundary demarcation of land holdings, the issuance of proof of land ownership, and the setting up of a national land information system. However, on the other hand, LTR has increased the vulnerability of single women, women in polygamous relationships or illegal marriage and the interests of any children involved. Indeed, the new land legal framework has not only weakened the land rights of those women, but, also the ability of social institutions to protect them. The cost recovery options put in place to insure the sustainability of the newly introduced land administration system have instead rendered land services inaccessible to those rural poor because they cannot afford the required fee. Indeed the introduction of land administration procedures and associated fees clash with existing social practices on land transactions. This has resulted in new informal practices (e.g. exchanging land certificate in case of land sale), therefore collapsing a relatively big proportion of the rural poor into a new situation of informality. Land use restrictions were found imbalanced with the land rights of the rural poor, who mainly depend on land use rights. The weight of existing land restrictions, combined with resulting perceived tenure insecurity, explain how, after LTR the state is increasingly becoming the major source of tenure insecurity for rural poor. Overall, improvements to land tenure security for the rural poor, post-LTR, appear very little. Moreover, LTR and associated legal and policy reforms, appear to have contributed to reducing and weakening the level of existing land tenure security of rural poor.

Chapter 5: Pro-Poor Land Administration⁶

Abstract

It is increasingly acknowledged that conventional Land Administration Systems have often worked against the needs and aspirations of the poor. There have been concerns over the fact that current procedures and requirements for mapping and boundary delineation are cumbersome and expensive and did not comply with the actual needs for most citizens for achieving security of tenure. The desire to insure that land administration systems provides land tenure security to the poor, has led to a new era of pro-poor land administration. The central inquiry to this paper was to examine whether pro-poor approaches to land administration as prescribed by contemporary literature provide tenure security to the poor. A well-known pro-poor inspired case: the Rwandan Land Tenure Regularization (LTR) program was used to examine how pro-poor land administration works in practice. To do so, LTR was assessed against the recent three frameworks all claimed to be pro-poor: the Fit for Purpose approach of Enemark (2014), the design requirements of a Pro-poor Land Recordation System (Zevenbergen et al., 2013) and the Conceptual Model of Land Tenure Security of Rural Poor on Sub-Sahara African context (Simbizi et al., 2014a). To answer to the initial inquiry of this paper, findings suggest that: yes contemporary pro-poor options are feasible to implement. However those options are still far to serve interest of the poorest of the society in terms of land tenure security provision.

Key words: land tenure security, pro-poor, land administration, Rwanda, LTR

⁶ This Chapter is based on a Chapter book published in Zevenbergen, J. A., de Vries, W. T., & Bennett, R. M. (2015). *Advances in responsible land administration* : also as e-book. Boca Raton: CRC Press.

Introduction

Conventional land administration systems often work against the needs of the poor (Lemmen, 2010b, Zevenbergen et al., 2013) In Sub Saharan Africa the approach has failed the poor, even for those projects considered partially successful (Zevenbergen et al., 2013, Van Asperen and Mulolwa, 2006) Concerns about that conventional survey and mapping requirements are expensive, timely, and do not aligned with existing contextual capacity (Enemark et al., 2014). This results in popular estimates that 75 percent of the global population does not have access to a formally recorded and recognized land right: a land administration divide is evident (Bennett et al., 2013). This is important because property is the basic legal concept upon which conventional legal systems are based, and upon which subsequent rights are derived, regardless of whether the property is held by an individual, a community, a family, tribe, or clan (van der Molen, 2006).

In response to this land administration divide, a new era of so-called 'pro-poor' approaches has emerged. These aim to ensure land administration systems actually deliver land tenure security to the poor. The term "pro-poor" is not new: it defines approaches that take into account people living in poverty and was first used in the context of slum dwellers (van der Molen et al., 2008, UN-Habitat, 2008, UN-Habitat, 2007). The approach was extended to the rural poor in parallel. Though there is no agreed definition of pro-poor land administration, there appears to be consensus in the underlying principles and strategies. For instance, most discussions tend to mention the continuum of land rights; gender equality in relation to land access and tenure security; affordability and low-cost land registration; local knowledge as an important resource for land registration; localized approaches and specific tools; and flexible approaches to land management, amongst others (Williamson et al., 2010, UN-Habitat, 2007, Payne et al., 2009). These principles need to be underpinned by pro-poor tools and approaches to support pro-poor land management (Williamson et al., 2010). Consequently, initiatives such as the Global Land Tool Network (GLTN) were established with a specific mandate to develop pro-poor land management tools. A range of other initiative from industry, donors, and academia are also evident. These include conceptual tools related land tenure, land policy tools (Whittal, 2014, van der Molen and Lemmen, 2006, UN-Habitat, 2008, UN-Habitat, 2007, Simbizi et al., 2014a, Enemark et al., 2014), and more technical tools intended to support land tenure and land registration (Zevenbergen et al., 2013, Lemmen et al., 2009).

Application of the pro-poor land administration approach is already evident. Particularly over the last decade, governments of many sub-Saharan countries commenced re-engineering existing land administration systems, to

include a pro-poor mindset. Land governance institutions have been redesigned, land policies and laws redrafted, and surveying and mapping techniques radically simplified to respond to the pro-poor mindset. Recent efforts include Rwanda's Land Tenure Regularization (LTR) program (Sagashya and English, 2010) the Rural Land Certification programs in Ethiopia (Deininger et al., 2008), the Land Administration Reform in Ghana (Independent Evaluation Group (IEG), 2013), the Land Tenure Services Project in Mozambique (Hagos, 2012) and land reform in South Africa (Benjaminsen et al., 2009). Despite all these examples, whether the pro-poor mindset actually translates into improved tenure security for the poor is still uncertain.

In this regard, this chapter aims to provide insights on how pro-poor land administration works in practice, and whether prescribed principles, when followed, actually deliver improved land tenure security for the rural poor. In order to do this, the chapter makes specific use of the recent Rwandan LTR program. In 2007, LTR was launched via pilots that by the end of 2013 covered the entire nation. The program was implemented with the desire to provide land tenure security to all Rwandans (Sagashya and English, 2010). LTR is perhaps the preeminent showcase of an intervention designed with the pro-poor land administration mindset. The intervention is considered to have accommodated most pro-poor ingredients, as prescribed in the contemporary literature (Enemark et al., 2014, Lemmen, 2010b, Zevenbergen et al., 2013): a general boundary approach was used; orthophotos were used for boundary demarcation and recording into the land information system; use was made of a flexible land law that recognized all existing land rights; and gender issues were addressed within those laws. This study focuses specifically on the rural poor who constitute the majority of the Rwandan population (83.5% according to recent population and housing census (Government of Rwanda, 2013) but, also 70% of the world's poor population are rural dwellers. Furthermore, it was estimated that at least 70 percent of the world's very poor people are rural and the large proportion of these are in South Asia and Sub-Saharan Africa. The rest of this chapter is structured as follows. A theoretical background to pro-poor land administration is provided. This leads to an overview of the methodology, an evaluation that utilizes three pro-poor land related frameworks. The results of the evaluation are then presented and discussed. Conclusions look at the implications of the results and future research endeavours.

Theoretical perspective

Until recently, land administration systems in many sub Saharan African countries were based on what Williamson and Ting (2001) describe as a narrow land administration paradigm; one introduced during the colonial era

centered upon conventional land registration and cadastral mapping techniques. The approach was not practical: land titling tools developed in Western Europe and were not conducive to local conditions and capacities (Williamson et al., 2010, Zevenbergen et al., 2013). Despite the inadequacies the approaches persisted into the contemporary: vested interests seek to maintain a status quo that often favors the elite within the country. Consequently, many land policies, laws, and procedures are still biased against the poor (UN-Habitat, 2007). It is wrong to assume the governments undertaking land formalization activities are easily able to establish pro-poor institutions and new forms of formalized rights (Sjaastad and Cousins, 2009).

The pro-poor land administration movement emerged from various sources in response to inadequacies in land tenure security. Pressure came top-down from the international land sector and bottom-up from local NGOs and farming groups: more effective forms of land administration that serviced the poorest in a community were needed (Enemark et al., 2014, van der Molen and Lemmen, 2006). These approaches were seen as the way forward to providing land tenure security to the poor.

Contemporary literature describes what a pro-poor land administration system entails. Features or ingredients can be grouped into two categories. The first involves technical tools for spatial data acquisition and recordation. It is recommended to use affordable technology to build the underpinning land administration spatial framework (Enemark et al., 2014). Tools such as aerial photographs and satellite images are considered to be cost effective for large-scale spatial data acquisition (Enemark et al., 2014, FIG, 1999, Tuladhar, 2005, Williamson and Ting, 2001, Zevenbergen et al., 2013). In addition, a land information system should be able to accommodate a variety of spatial units and land tenure arrangements (Enemark et al., 2014, van der Molen and Lemmen, 2006, Zevenbergen et al., 2013). The second category concerns pro-poor legal and policy tools. Several researchers and international organizations argue that national land policies and existing legal frameworks should recognize and promote the recordation of customary land rights (Deininger, 2003, FAO, 2002, Van Asperen and Mulolwa, 2006, van der Molen and Lemmen, 2006). It is suggested that a pro-poor land policy can provide a range of land rights tailored for different situations (UN-Habitat, 2007). The same land policy should insure that the poor have access to land and land services are set at prices that can be afforded. Borras and Franco (2008) disqualify land policies that give only superficial formal land rights but not the power to exercise control and management of use. They stress that pro-poor land policies should involve real material gain to be retained or transferred to the poor. Overall, the consensus is that the ultimate pro-poor solution is to shift towards unconventional land administration approaches (van der Molen, 2006, van der Molen et al., 2008).

Along with the pro-poor movement, theoretical research has revisited the notion of land tenure security to insure that it is sensitive to the needs of the poor (Arnot et al., 2011, Lavigne-Delville, 2006, Simbizi et al., 2014a, Van Gelder, 2010). In general, it is argued that the conventional meaning of land tenure security (i.e. individual land ownership, boundaries accurately surveyed, proof of land ownership, degree of exclusivity and duration of land rights) (Feder and Feeny, 1991, Platteau, 1996) does not align with the land tenure systems of the poor in developing countries (Deininger, 2003, FAO, 2002, Lavigne-Delville, 2006, Simbizi et al., 2014a).

A synthesis of the abovementioned literature reveals the conceptual framework upon which this chapter is based (Figure 10). The ingredients of pro-poor land administration, as derived from the fit-for-purpose approach (Enemark et al., 2014) , and the design elements of a pro-poor land recordation system (Zevenbergen et al., 2013), act as a tangible basis. In addition, the components of land tenure security for the rural poor in sub Saharan Africa are also incorporated (Simbizi et al., 2014a).

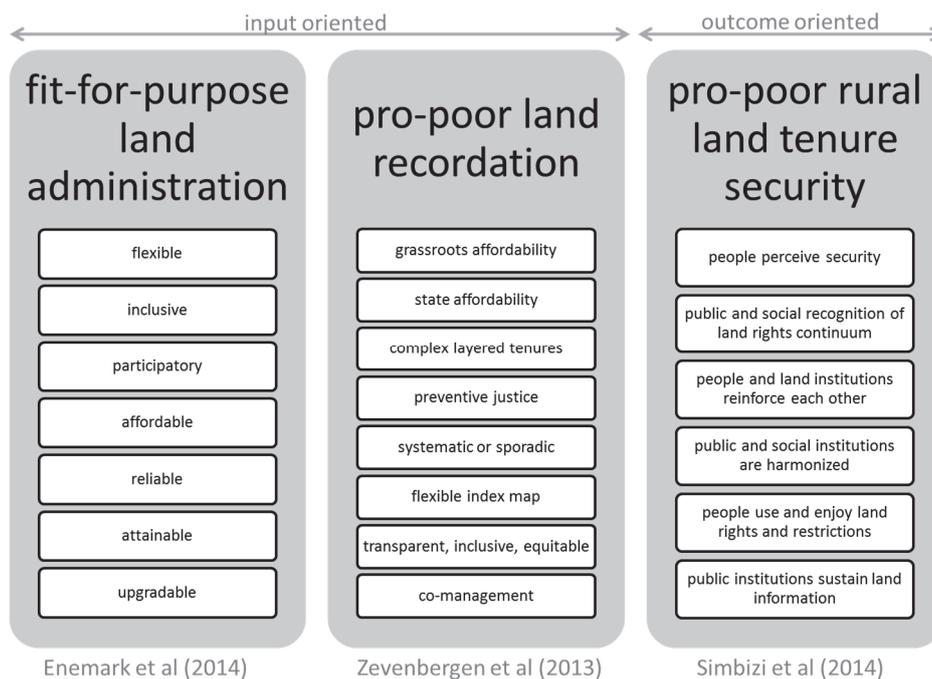


Figure 10: Pro-poor land administration and land tenure security provision (Adapted from (Enemark et al., 2014; Zevenbergen et al., 2013, and Simbizi et al., 2014)

The choice of the three conceptual frameworks combined in Figure 10 is motivated by several reasons. First, the three theoretical works constitute well-recognized components of pro-poor land administration domain: 1) fit-for-purpose land administration considers the entire land administration system; 2) the pro-poor land recordation system elements focus specifically on land recordation; and 3) the model of rural poor land tenure security looks at the actors and entities involved in the process. Second, the three frameworks are able to be integrated: the different aspects that each deals with, previously studied in isolation, can be drawn together in this new conceptual model. Third, the fit-for-purpose approach (a result of collaboration between the World Bank and the International Federation of Surveyors (FIG)) and the pro-poor land recordation system (backed by the Global Land Tool Network (GLTN) and the UN-Habitat) are products of arguably the most active and influential institutions in the field of land administration. This explains why the two approaches have received an increasing acceptance and support of donors and governments. While available research results provide successful stories on the implementation of the two approaches, few attempts are solely dedicated to examining the effects of the two approaches against the situation of tenure security of the poor.

The fit for purpose and the pro-poor recordation system prescribe *inputs* to land administration systems that are believed to improve the land tenure security of the poor. For example, the demand for flexible and affordable approaches to spatial information recording, and a flexible legal framework that accommodates society, can be considered in this light. The pro-poor land recordation system is more specific on this point: the system should be affordable and accessible to a society's poorest members. Likewise, the state should be able afford the cost to setup and sustain the system in reasonable amounts of time. That is, at least from the fit-for-purpose perspective, the system should be 'attainable' and 'reliable'. Both fit-for-purpose land administration and the pro-poor land recordation system promote 'inclusive' and 'participatory' approaches to recording spatial data on land and associated legal and social tenure rights. These include, but are not limited to, the continuum of land rights approach. The latter implies recognition of different forms of land tenure other than individual freehold.

The content of land tenure security presented in Figure 1 is derived from the interactions between five main elements found in the land tenure systems of the poor in sub-Saharan Africa. Those elements include: people, social land institutions, public land institutions, the continuum of land rights and restrictions, land and information about land (Simbizi et al., 2014a). Six key interactions between those elements can be summarized as follow: 1) People legitimize and access public institutions. Public institutions allocate land with

equity, and protect and recognize people and their land; 2) People legitimize and access social institutions. Social institutions allocate land with equity, and protect and recognize people and their land rights; 3) Both public and social institutions are harmonized and recognize each other; 4) People hold, use and enjoy their land rights and restrictions, and people are aware and empowered about their land rights and restrictions; 5) Land rights and restrictions are balanced, and public institutions recognize, protect and enforce land rights and restrictions; and 6) Social institutions regulate land, recognize, protect and enforce land rights and restrictions, and legitimize land information.

Methodology

In line with the aim of the chapter, the Rwandan LTR is used as a basis for evaluating how pro-poor land administration approaches are implemented in practice, and the extent to which they deliver land tenure security to the poor. Three frameworks are used in the evaluation: 1) the fit-for-purpose land administration characteristics of Enemark et al (2014); 2) the pro-poor land recordation requirements of Zevenbergen et al (2013); and 3) Simbizi's et al (Simbizi et al., 2014a) framework of rural poor land tenure security. First, using Simbizi's framework, the land tenure security of the rural poor subsequent to LTR implementation is assessed. Empirical data collected during a related study in 2015 is utilized (*c.f.* Simbizi et al. (2015)). Second, the same empirical data, combined with data extracted from a desktop study and government archives, is to evaluate the extent to which LTR adhered to the ingredients of the frameworks of Enemark et al (2014) and Zevenbergen et al (2013) presented in Figure 1. The results stemming from each framework are compared and a more holistic view of the pro-poor approach becomes apparent.

Evaluation activities rely heavily on the techniques, methods and skills of the underpinning research methodology (Kumar, 2005). The case study approach (*c.f.* Yin (2003) was found to be an appropriate method for the task. Case studies (Yin, 2003) are known to be a methodology of choice when a holistic investigation is needed. Moreover, case study data collection offers the opportunity to use many different sources of evidence: it enables the use of multiple methods of data collection. For LTR, the main sources of evidence included household surveys conducted in one area that was object of an LTR field trial in 2007, online documentation, archive analysis, and semi-structured interviews.

Data collection specifics were as follows. In 2013, a household survey was conducted in Kabushinge Cell, located in Rwaza Sector, Musanze District, Northern Province. Kabushinge cell was selected as representative of a

smallholder land tenure system, and aligned therefore with the focus of this study. The survey was made by means of a questionnaire administered face-to-face. A random sample of 416 households was drawn over a total of 1137 households considered to be the poor. Data entry was made using IBM SPSS 22. Using the same software, statistical analyses including, descriptive statistics, cross tabulation, and logistic regression model were performed. Documentation and archive analysis made use of written reports, available manuals, and land related legal and policy documents. These were reviewed in order to understand the LTR process, its early effects, and the whole underlying institutional framework. Semi-structured interviews with experts and practitioners were conducted to supplement information obtained from the reviewed documents. Overall, the three sources of evidences covered four units of analysis: plot, household, community, and land administration jurisdiction.

Results

This section presents the evaluation results of LTR against the three pro-poor conceptual frameworks: 1) the content of land tenure security for rural poor (Simbizi et al., 2014a) is presented first; 2) the fit for purpose approach (Enemark et al., 2014) is presented in Table 15 the requirements of the pro-poor recordation system (Zevenbergen et al., 2013) are presented in Table 16. From this, discussions then focus on determining whether the three approaches were adhered to, and if so, whether or not the models support delivery of enhanced land tenure security.

Regarding the status of the ***land tenure security of the rural poor after LTR***, the six variables extracted from Simbizi's et al (2014a) 'content of tenure security' and also outlined in Figure 10 guide the discussion.

First, regarding people's perceptions on their tenure security, 99.5% of the study population claim to be satisfied with land administration service delivery. Institution-wise, these are good indicators of land institution legitimacy. Indeed, only 14.8% of respondents fear corruption in public land administration institutions. Against global norms, as found in 'Transparency International' surveys, this is a low percentage. Meanwhile, the cost involved when undertaking land transactions and land conflict resolution processes is perceived to be too high. The study population was also found to be exposed to the risk of public expropriation and land redistribution. Surprisingly, a small proportion (only 11.2%) believes in fair compensation. Regarding land institutions (both social and public in nature) allocating land with equity, and recognizing and protecting people and the continuum of land rights, only 51.9% have land certificates for their total plot holdings. In this regard, LTR appears to have had a double sided effect on land conflict. On one hand, the

process of adjudication has contributed to the boom of land conflict cases in formal courts: underlying cases were brought to the surface. Out of 10.3 million of parcels that were demarcated and adjudicated, 81% of them were approved for allocation of a lease or title. Some of those that were not approved ended in the courts. Conversely, in areas where LTR was completed, public archives indicate a decrease in land dispute cases reported over five years. With regards to equity to access land, LTR enabled equal inheritance right between males and females, co-ownership of land for legally married couples, the requirement to provide consent between legally married men and women in cases of land sales, gifts or mortgages. Nevertheless, LTR has rendered so-called illegal wives (e.g. those in polygamous relationships) more vulnerable: LTR may have inadvertently weakened the social protections that illegal wives previously enjoyed.

Second, regarding the need for people to legitimize land institutions and vice versa, legitimacy was strengthened by land registration and the issuance of proof of land ownership, also known as legalization. Nevertheless, some categories of people, for example women, are not always considered by social institutions as legitimate inheritors of land. At any rate, newly introduced gender sensitive land laws have received a high level of perceived legitimacy. It was found that 91.7 percent of the respondents believed in equal inheritance right between girls and boys. However, the effect of this is likely to manifest in the future as younger generation enter the property system. Overall, perceived legitimacy of both social and public institutions is relatively high.

Third, regarding the need for land institutions to be harmonized, a clash between social and public land institutions is apparent: 1) the new public land administration processes introduced through LTR conflict with existing social practices (for example, land subdivision, land sale/purchase procedures), and 2) gender sensitive laws previously mentioned, though increasingly gaining people's acceptance, still conflict with existing social practices. Unfortunately, the collected data did not allow for the amount of land conflicts resulting from the new laws to be assessed. This could be worthy follow-up work. Regarding balance between land policy, land law and other supporting laws, there exist a number of inconsistencies that are likely to generate land conflict. For example, Article 10 of the Organic Land law stipulated equal protection to rights over land acquired from both customary and statutory law. In practice however, this law and other supporting laws (e.g. Law regarding Matrimonial Regimes; Family Donations and Succession (Law No 22/99 of 12/11/1999); and the law on Prevention and Punishment of Gender Based Violence (Law 59/2008 of 10/09/2008)) tend to protect the legal wife and children.

Fourth, with respect to people being able to use and enjoy their land rights and restrictions a number of points can be made. Regarding access to credit, subsequent to LTR a reasonable proportion of the respondents (11.4 percent) acquired credit using their land as collateral. There was also evidence of investments into land. The major types of activities included soil conservation measures (anti-erosion structure), reforestation, terracing, and the planting of cash crops. The land market was found to be active, especially the rental market (48.5% of the respondents were involved in some way), although the private rental markets is not directly managed within the national land administration framework. The study area happened to be in an area reputed to be the most active rural land market nationwide and results are supportive. Five years after LTR, the land rental market took over land sales (6.3% of respondents sold land) and land purchase (18% of respondents purchased land). The later remains the main mode of land acquisition, after land inheritance, with the mean plot acquired through the land purchase being 2.44.

Fifth, regarding the balance between public land restrictions and land rights to be enjoyed, a level of disproportionality was observed. While some restrictions may be linked to a different government policies such as land use consolidation and land grazing, there exists a bulk of restrictions that originated from LTR: customary individual land ownership is restricted to a lease rights. The same restrictions equally applies to the ownership of wetlands, and people are prohibited from subdividing lands that below 1Ha. It appears customary land restrictions are not felt, however, it was learnt that family leaders tend to determine and enforce who can buy land: preference tends to be given to members of the family, or any other person known to the family. This is more likely to happen when a female widow needs to sell land. The same occurs when married girls have to share land with their brothers at the time of land succession.

Sixth, regarding the need for public institutions to manage and sustain a land information system, LTR led to the creation of a countrywide GIS-based recordation system. It includes a descriptive database of land claims (or land registry) and spatial details of land parcels. With regards to the proportion of registered land transactions (e.g. land sales, land inheritance, land succession, sub-division or merge of parcels, expropriation, among others), it was found that more effort is needed to ensure rural land transactions are reported to the district land bureau. However, the archives of the office show good evidence of registration of land transactions occurring in urban areas (mainly land sales/purchases and parcel subdivision). This perhaps makes sense as land values are likely to be higher in these areas. The average time to complete a land transaction at district land bureau is set between 15 and 30 business days. In addition, the land transaction process involves other

procedures that take place at local level (cell and sector level) that may take an average of 10 business days.

Regarding, the alignment of LTR to Enemark's et al (2014) ***fit-for-purpose land administration characteristics***, Table 15 reveals adherence for many of the elements, except perhaps affordability in the maintenance phase. The government successfully managed to establish the system with help of foreign partners at very low costs to government and citizens. However, it is acknowledged that future financial self-sustainability of the system will be critical. If the poor cannot collect lease documents due to the failure to pay the required fee, it is an indicator that some will likely not be able to afford the land transaction charges required to run the system. The affordability of the new established system is critical and failure to meet this requirement is likely to negatively affect the reliability of the system.

Table 15 Assessment of LTR through the lens of Fit for Purpose Framework

System design elements	Assessment results: adherence	Assessment results: non-adherence
Flexible	<ul style="list-style-type: none"> • General boundaries utilized for surveying and demarcation • Field identification, adjudication and demarcation of boundaries utilized rectified aerial photographs and high resolution satellite images. • Both commercial and open source solutions for spatial data acquisition and processing were used. The maintenance phase utilizes handheld GPS. • The new land policy and legal framework provides legal recognition of land rights acquired under customary law 	<ul style="list-style-type: none"> • Land offices at centralized and decentralized level are only equipped with commercial GIS software (ArcGIS software)
Inclusive	<ul style="list-style-type: none"> • Multiple forms of ownership were included: individual, joint for legally married couples, and group land ownership. • All informally held documents (regardless their legal status) were used as evidence during the claim process 	<ul style="list-style-type: none"> • The existing continuum of land was replaced by statutory land ownership rights • The spatial component of the land information system is mainly parcel based
Participatory	<ul style="list-style-type: none"> • Boundary demarcation was performed by locally trained para-surveyors who were recruited from the community. It was reported that of the 110000 people who were employed, over 99% were drawn from the community where the work was taking place • Claims over land were assessed in the field 	

Affordable	<ul style="list-style-type: none"> Implementation cost: land parcels demarcation and adjudication of 10.3 million of parcels was achieved at a cost estimated between US\$ 5.47 and US\$ 6.48 per parcel. (Gillingham and Buckle, 2014). The implementation cost though reasonable compared to other countries such as Lesotho (US\$69/lease), remains higher than the US\$ 1 per parcel that was achieved in Ethiopia (Deininger et al., 2008) The land registration fee was set to RWF1000 (almost US\$ 1.5) with a mean plot holding estimated at five per household, the average registration fee is estimated at RWF5000 (approximately US \$ 7.6) The failure to pay the required fee for land registration has prevented land owners from collecting their land certificates 	<ul style="list-style-type: none"> Without foreign aids the government wouldn't have afforded the implementation cost of LTR. The DFID was the principle donor contributing more than the half of the total cost
Reliable	<ul style="list-style-type: none"> Out of LTR process a comprehensive land information system was created 	<ul style="list-style-type: none"> Keeping the created land information system up-to-date is a clear challenge especially in rural areas. While land transactions taking places in urban areas are reasonably reported, this is not the case in rural areas.
Attainable	<ul style="list-style-type: none"> The implementation of the system was fast only required a period of five years to achieve nationwide coverage. An estimated 8.4 million leases and freehold titles were prepared with over 5.7 million collected by landowners. 	
Upgradable	<ul style="list-style-type: none"> The established land information system has room for further upgrades. The initial system operates at centralized level, in the future the system could be upgraded to operate digitally at a more local level. 	

Source: Data collected by authors 2012-2013

Regarding, the alignment of LTR to Zevenbergen's et al (2013) **pro-poor land recordation requirements**, Table 16 reveals the majority were met, although a number were not and demand specific effort. As per the evaluation against fit-for-purpose characteristics, the affordability of the

system for both citizens and state, in the maintenance phase appears to be a potential issue. Meanwhile, with regards to implementation options (sporadic vs. systematic), the readiness of the people to accept and use the system appears to be another potential concern. Unfortunately, the data available did not allow a complete analysis in this regard. Finally, recognition of the continuum of land rights was not necessarily adhered to in LTR: a state prescribed tenure classification was prescribed across the country. Customary tenure arrangements, including those pertaining to illegal wives, tended to be overwritten.

Table 16 Assessment of LTR through the lens of Pro-poor Land Recordation Systems Requirements

System design elements	Assessment results: adherence	Assessment results: non-adherence
Grassroot affordability	<ul style="list-style-type: none"> Initial land registration fee (approximately US\$ 1.5 per plot) applied by LTR is not that higher than US\$ 1 suggested for this requirement 	<ul style="list-style-type: none"> It was found that the poor could not afford the initial land registration fee. The failure to pay the registration fee is one of the reasons that prevented landowners from collecting their land certificate (by 2013 an estimate of 2.7 million of lease out of 8.4 million were not yet collected). Even in the pilot area where the registration fee was waived, 4.9% of the sample declared having failed to pay the required fee for the plots located outside the pilot area. A land transaction fee (land sale for instance) is perceived to be high (by 81.3% of the sample). Indeed the mutation fee in case of a land sale is set to RWF 20,000 (approximately US\$ 30.76) excluding other associated cost such as transport
State affordability	<ul style="list-style-type: none"> The government alone would not have afforded the full cost of LTR (see Table 1) Though LTR was implemented using low cost technology and tools, the government contribution was relatively small: estimated to UK£ 3,912,939 as per July 2013 (Gillingham and Buckle, 2014) equivalent to 9.2% of the total budget 	

Complex layer tenure	<ul style="list-style-type: none"> • See "inclusive"/Table 1
Delivery of preventive justice	<ul style="list-style-type: none"> • LTR has enabled the provision of evidence of land rights (emphyteutic lease/land certificate, land title) • Impact on existing land conflicts: results of the study area show an increase of land conflict cases reported in formal courts from 2010 to 2013 with the peak in 2011. While LTR is not the cause of conflict, its adjudication process has been a trigger for sleeper or given up cases of land conflict to re-emerge • Prevention of land conflict: results from the study area confirm a positive impact of LTR on land conflict. It was found that the number of land conflict cases reported over five years after LTR has decreased. Additionally, it was found that those who have land certificates are likely to report less land conflict.
Sporadic or systematic implementation	<ul style="list-style-type: none"> • LTR was implemented on a systematic basis and this took relatively few years (5 years). • Awareness raising: LTR used a blend of traditional and innovative communication tools to insure that the public was aware of the program. It was found that the government outreach was highly successful: over 70% attended public meetings (Gillingham and Buckle, 2014). The level of awareness was even higher in places that benefited special • Upfront investments were little. For instance the issue of capacity constraint, local land governance institution to run the system, had to be addressed upfront.

	<p>awareness raising program. For instance it was found that 79% had attended government meeting on LTR (Santos et al., 2014)</p> <ul style="list-style-type: none"> • Readiness of people to systematic implementation: unfortunately we couldn't carry out an empirical assessment on the readiness of the people. Results of the field trial and the baseline study of 2008 indicated that over 80% of the respondents perceived that the impact of LTR would be positive (Sagashya and English, 2010) 	
Flexible spatial index map	<ul style="list-style-type: none"> • One of the recommended option: use of high resolution satellite imagery was successfully applied by LTR to make the spatial index map 	
Transparency, inclusivity and equity	<ul style="list-style-type: none"> • Inclusivity and equitable: this suggests right to land recordation without any gender based discrimination. LTR has recorded land with respect to the new land policy and legal framework that provide equal right to land between men and women: the names of both wife and husband legally married were recorded on the land certificate together with the names of the children, female widows' land was recorded as married wife. 	<ul style="list-style-type: none"> • Transparency in terms of free and accessible land records: this requirement is not yet met since the new established land administration structure are still centralised • LTR was also gender biased: illegal wives were not recorded on the land certificate, wife's land in polygamous relationship was recorded but the wife was considered as a friend. Kids resulting from illegal relationship but not recognized by the man could not be recorded on the land certificate
Co-management	<ul style="list-style-type: none"> • Evidence creation and legitimacy of land records: during land demarcation, land owners could identify 	

- their boundaries in the presence of their neighbours.
- Involvement of local community in land recordation: the land committees at the smallest administrative unit (cell) were made using community members. Such committees were in charge of registering and solving any dispute or objection raised during adjudication process.

Source: Data collected by authors 2012-2013

Discussion

If pro-poor land administration approaches are agreed on as an alternative to providing tenure security for the poor, the evaluation of such approaches should not be limited to their design or implementation. In addition, whether the system achieved the original objectives should also be assessed: examination of outputs and outcomes relating to improved land tenure security should be examined. The results presented above enable such an analysis: the following paragraphs consider the inputs, processes, and *also* the outputs of LTR to determine whether land tenure security is provided for.

As discussed in the theoretical background, the frameworks of Enemark et al (2014) and Zevenbergen et al (2013) tend to focus on inputs into the land administration system, and to a lesser extent processes. The two frameworks agree on a number of features: the pro-poor technology options to build the underpinning spatial framework; the need for affordability; and the recognition of a continuum of land rights.

LTR proves that the implementation of pro-poor technology options, and other associated requirements, such as systematic implementation and co-management is feasible. However, so-called 'pro-poor technology solutions' for performing transactions do not appear to be as affordable, if services are being charged at cost-price. The case of LTR suggests a significant number of the poor could not afford the initial registration fee: the same group is not likely to be able to afford subsequent land transaction fees. That is, even with pro-poor technology solutions, land administration may remain inaccessible to poorer parts of the population: over time the situation will become unreliable as an evidence base of secure ownership. A potential implication is

that following LTR, the poor become more insecure than previously: they do not possess state-backed proof of ownership which was not historically required. Consequently, informal transactions are likely and the seeds of conflict potentially sewn. Despite such hypotheses, pro-poor technology solutions appear to be able to improve the tenure security of the poor; provided up-front investment by government is undertaken and much emphasis is placed on creating citizen readiness, a requirement from the Zevenbergen et al (2013) framework.

On recognizing the continuum of land rights, LTR partially accommodates: a continuum of accuracy was observed, however, the continuum of land right options seems to be abandoned. The latter most like expedited the process, but, did result in adverse outcomes for some poorer members of the community (e.g. illegal wives). In the Simbizi et al (2013) framework this issue is identified under the relationship dealing with 'equity', however, the Enemark et al (2014) framework does not deal with the concept explicitly.

The flexible legal framework recommended by Enemark et al's (2014) fit-for-purpose approach is often translated into statutory recognition of customary land rights. In practice, the simple recognition of customary land rights is not enough. Simbizi 's et al (2014) framework indicates that there should be harmony between social and public land institutions. The case of LTR reveals that the newly introduced legal framework presents areas of inconsistencies, both within itself, and via clashes with in some existing customary practices. Through initial land recording, both the Enemark et al (2014) fit-for-purpose approach and the Zevenbergen (2014) pro-poor land recordation system give room for a form of land grabbing under the guise of state based land restrictions. Similarly, a government can use the mechanism of land restrictions and responsibilities to accumulate power over land. The case of LTR arguably illustrates how an imbalance between existing land restrictions and land rights can consequently constitute a source of tenure insecurity.

Overall, the two pro-poor approaches, regardless how robustly implemented, may not necessarily result in land tenure security for the rural poor. Other key aspects of land tenure security need to be understood and attended to: perceptions of the poor; land institution harmonization; certainty of rights; and balancing land rights with restrictions and responsibilities are of equal importance.

Conclusion

This chapter set the scene by recalling a widely agreed argument: conventional land administration systems and associated tools are generally not flexible enough to serve the poor of developing countries. Indeed, this

study subscribes to the new paradigm: pro-poor land administration approaches and tools are suggested as a way of delivering land tenure security to the poor. The central inquiry was to examine whether pro-poor approaches to land administration, as prescribed by contemporary literature, provide tenure security to the poor. For this purpose, a well-known pro-poor inspired case, the Rwandan LTR, was used to examine how pro-poor land administration works in practice. The program was assessed against three frameworks, all claimed to be pro-poor, Enemark's et al (2014) fit-for-purpose land administration approach, Zevenbergen's et al (2013) pro-poor land recordation requirements, and Simbizi's et al (2014) conceptual model of land tenure security of rural poor of sub Saharan African. The three frameworks reasonably portray key inputs and outcomes of a pro-poor land administration system, with regards to land tenure security. However, none of them is an end in itself: proposed technical requirements can be implemented but in practice they remain inaccessible to the poor. Furthermore, other suggested requirements are hardly taken into account during project design, therefore hardly evaluated.

The Rwanda LTR provides a successful implementation story with regards to the fit-for-purpose approach and pro-poor land recordation requirements. Overall, results show that a number of pro-poor options suggested by the two frameworks can be implemented. The flexibility in terms of spatial data and land tenure (legal and social) recording can be achieved. LTR constitutes additional evidence on how a general boundary approach, coupled with the use of affordable technology, such as high resolution images, can lead to a flexible land recordation system. The established system is regarded generally reliable, except for a few concerns on the newly introduced wetland boundaries. The LTR process serves as a good lesson when it comes to the level of participation required by the fit-for-purpose approach. However, the replicability of the innovative methods used in different context may not lead to the same results in absence of the strong political will that characterized LTR.

Meanwhile, by excluding existing use rights and the land rights of illegal wives, LTR did not reach the desired level of inclusiveness advocated by the two approaches. While the implementation process was affordable for government, this was made possible by the support of foreign partners. The so-called pro-poor affordable technology options are still expensive for governments and less affordable for the rural poor, particularly in the maintenance phase: grassroots affordability, a requirement for pro-poor land recordation system, remains difficult to achieve. To insure the sustainability of the new established system, it is advised to think through the business model of land administration and developing aligned strategies and this preferably during the original design of the project (Magis and Zevenbergen,

2014). The impact of the affordability issue is that it is likely to undermine tenure security, or may render the poor more vulnerable than prior to LTR. For instance, the acquired perceived tenure security due to land rights recognition is undermined by the land administration services perceived to be physically and financially inaccessible. In addition, the failure to pay the required fee for a land registration certificates may also make the poor more vulnerable. If the poor still cannot afford the pro-poor system, the technology options need to be revisited, or fee subsidies considered.

At any rate, whilst it is still too early to convincingly test, the results from the study reveal that LTR is yet to significantly affect a number of aspects of land tenure security including land market participation, although encouragingly an increase in land investment was observed. At the same time, the limited recognition of the continuum of land rights, the introduction of new land restrictions, and a lack of harmony between new land laws and customary practices will continue to present challenges to land tenure security in the short to medium term.

In conclusion, contemporary pro-poor land administration approaches, as described in the 'fit-for-purpose' and 'pro-poor land recordation system' requirements can be successfully implemented at national scale. However, it should be recognized that implementation of the elements does not guarantee improved land tenure security for the poor. Other socio-technical elements are crucial to consider including perceptions, equality, and so forth. Pro-poor land administration activities should seek to ensure these aspects are incorporated into project design and assessment. Future work might consider what this entails in terms of approaches to project implementation.

Chapter 6: Concluding remarks and recommendations

The main goal of this study was to investigate how to holistically measure land tenure security from a pro-poor perspective. Central to this, the aim was to develop an indicator based framework to measure improvements or changes on land tenure security of rural poor, in the context of Sub-Saharan Africa. This Chapter summarizes the key findings from the study and makes final concluding remarks. Reflections on the findings implications and recommendations are made. The chapter ends by highlighting potential future research opportunities.

Synthesis of the research findings

In this section, a synthesis of key findings and concluding remarks is provided. Contributions to the existing body of knowledge are highlighted. Findings are structured around key research sub-questions that have guided this study:

- What does a holistic conceptual framework of land tenure security of the rural poor in Sub-Saharan Africa entail?
- What pro-poor indicators can be used to holistically measure land tenure security of the rural poor in a Sub-Sahara African context?
- What is the contribution of a land administration intervention such as the Rwandan LTR on land tenure security of the rural poor?
- Do pro-poor Land Administration principles and tools, when applied lead to an improved land tenure security of rural poor?

What does a holistic conceptual framework of land tenure security of the rural poor in Sub-Saharan Africa entail?

The major claim underpinning this research inquiry was that existing concepts of land tenure security, and associated theoretical basis; are too narrow to portray the full picture of tenure security that is enjoyed by rural poor in Sub-Saharan Africa context. Results of a rigorous systematic literature review provide evidence to support the above claim. Existing land tenure security definitions are discipline oriented constructs that hardly accommodate contextual aspects of rural Sub-Sahara Africa. The major contribution of this study was the introduction of the systems thinking as an approach for conceptualising the land tenure security of the rural poor. In this vein, the newly introduced conceptual model defines land tenure security as an emergent property of any land tenure system that are object of study. From this perspective, the content of land tenure security is defined by the

key elements of the system as a whole, and more importantly by the interactions between those elements. For the proposed conceptual model, five elements that typically characterise Sub-Saharan Africa's land tenure systems under which the rural poor fall were identified: (1) people, (2) social or customary institutions, (3) public institutions, (4) the continuum of land rights and restrictions, and (5) physical land and land information. Key interactions between the five elements (here referred to as the content of land tenure security) were retained (Chapter 2). The key message out of the above findings is that land tenure security concept is highly context sensitive, especially when it is regarded through a pro-poor lens. This is perhaps a limitation of the conceptual model developed, however, it is important to note that the model differs from other conventional understanding of land tenure security in many ways. The conceptualisation integrates in a single model, aspects of tenure security, that in past were studied in isolation. For instance, the model explores the dynamism between the continuum of land rights and restrictions, and the sustainability of the land information system; and the implication of such dynamism on tenure security of the poor. Contrary to many other concepts of tenure security that are tailored to western land tenure systems, the proposed model is fundamentally inspired by rural Sub-Saharan African tenure systems; derived from an extensive English literature review. We are therefore confident that the model can be applicable in different Sub-Sahara African contexts. The model may nevertheless have some limitations due to the fact that this study did not cover enough literature from French speaking countries, or other language groupings, or unpublished tenure systems more generally. It is however worthy to note that the study's aim was not to push for a one-size-fits-all definition. Instead, the study suggests a robust general basis to support different conceptualisation efforts.

What pro-poor indicators can be used to holistically measure land tenure security of the rural poor in Sub-Saharan African context?

This question was partly addressed in Chapter 2 by the clarification of the land tenure security concept: an understanding of what should be measured. The use of a systems based approach for indicator development enabled delivery of a holistic set of indicators that is believed to be pro-poor (Chapter 3). In this regard, different types of indicators were considered: input versus outcome indicators, qualitative versus quantitative indicators, linear versus non-linear indicators, sensitive and context specific indicators, amongst others. Equally, selected indicators happened to cover aspects that in the past were given little attention or were studied in isolation. Those include but are not limited to the sustainability of land registries and spatial land

information, legitimisation of both social and public institutions, social protection and recognition of land rights, social enforcement of land rights, institutional harmonization, the substance and consistence of land related laws and policies, the balance between land rights and land restrictions, cases of land grabs, people's empowerment and awareness on their land rights. Due to the complexity of rural land tenure systems in Sub-Saharan Africa, and land tenure security as a concept more broadly, it is acknowledged that data collection for some of indicators may be a challenge. The take away from this is that a shortcut to fewer qualitative and linear indicators is likely not to properly inform policy makers on the achievement of national land policies, with regards to provision of land tenure security to the poor. For governments and land administration agencies to be able to monitor and improve land tenure security of the poor, for better or worse, they should be equipped with a comprehensive set of indicators.

What is the contribution of a land administration intervention such as the Rwandan LTR on land tenure security of the rural poor?

Land administration interventions are commonly used as land policy tools in developing countries. Central too many national land policies of those countries, is providing or improving land tenure security. The contribution of a land administration intervention to the tenure security of the poor has been the object of controversial debate, largely because those interventions are often regarded as biased against the poor. This study provides in-depth insights and empirical evidence to support the existing debate, using the case of the Rwandan LTR (Chapter 4). Using a comprehensive set of pro-poor indicators to evaluate the Rwandan LTR, this study revealed what lies beyond economic outcomes, commonly found as the focus of many evaluations efforts. Findings provide evidence on how LTR has positively affected the land tenure security of the poor: legal recognition of land rights, reduction of land conflicts, legally married women land rights strengthening, and incentives to invest in forest, amongst others have all occurred. However, registered benefits are overcrowded by threats to tenure security that can actually render the poor more vulnerable than prior to a LTR-styled intervention. The study further points out how legal and policy frameworks associated to LTR contributed, in some cases, to weaken the situation of the rural poor.

Do pro-poor land administration principles and tools, when applied, lead to improved land tenure security of rural

The global land administration community has come to a consensus that conventional land administration systems are not flexible enough to serve the poor in developing countries. This has led to a shift towards a new pro-poor land administration paradigm as a way forward to provide land tenure security to the poor. Contemporary pro-poor theories, tools, principles and guidelines have been translated into land policy tools. How those tools and principles work in practice, and whether they really constitute a remedy to the tenure security of the poor were the issues focused upon (Chapter 5). The quintessential pro-poor inspired land administration intervention, the Rwandan LTR, was used to address our research inquiry. The program was evaluated against three frameworks all believed to be pro-poor: the fit-for-purpose land administration approach (Enemark et al., 2014), the pro-poor land recordation requirements (Zevenbergen et al., 2013), and the conceptual model of land tenure security of rural poor of sub Saharan African (Simbizi et al., 2014a). Findings suggest that the technological solutions prescribed by both fit-for-purpose land administration approach and the pro-poor land recordation requirements were proven to be feasible and implementable. Other pro-poor systems requirements such as flexibility, affordability, participatory, attainability, reliability, gender equity, inclusiveness, conflict prevention, were also found fully or partly achievable. However, what are believed to be pro-poor options, are not necessarily affordable by the poor. In some cases, the newly established land administration systems and associated land services remain financially inaccessible, or at least unattractive or unknown, to the poor. The same observation was made by Van Asperen (2014), in his PhD research on innovative land tools in Sub-Sahara Africa (peri-urban context). While governments of developing countries might be able to afford the implementation phase of pro-poor approaches, this appears to still largely depend on foreign aid. Moreover, the issue of affordability is possibly likely to send the poor into a new situation of informality due to the failure to pay land registration fees or any fee required to report changes in land tenure. Equally land administration agencies face a big challenge with respect to the sustainability of the newly established system. The study anticipated the risk of undermining the tenure security of the poor, in cases where pro-poor land regulations are still conflicting with other policies and laws in relation to land.

Reflexion on the study finding implications and recommendations

This section provides reflection on the implications of the study's findings and makes several recommendations. Three axes of reflection are followed: (1) implications of the study findings on land policy formulation in Sub-Saharan Africa, (2) implications on Rwandan LTR and (3) recommendations for future research.

(1) Policy implications

This study addresses a highly sensitive policy issue. Early on in the work, it was made clear how land tenure security remains a central building block of national land policies and global development agenda. Findings of this study are expected to influence land policy formulation in Sub-Sahara African countries. It was demonstrated that land policy tools cannot serve the interests of the poor until they are backed by an inclusive understanding of land tenure security. Furthermore, the study reveals that land policy tools such as land administration interventions, should be aligned with other government priorities and initiatives. Such an inclusive understanding is primarily meant to inform the policy formulation process, on ingredients to be considered. Findings suggest that land tenure security of the poor is very context sensitive. A lesson for policy makers is that a 'copy-paste' of land policy tools that were proven to work in a different context may not guarantee the same results. The study urges policy makers to revisit evaluation routines that tend to focus on economic outcomes. Findings prove that land tenure security of the poor involves more than economic outcomes. Failure to acknowledge this is likely to mislead land policy evaluations.

(2) Implications on Rwandan land administration sector

The main outcome of this study (the framework to measure land tenure security of the poor in a Sub-Saharan Africa context) was validated using the Rwandan Land Tenure Regularisation program. The same program was also used to investigate how the pro-poor land administration works in practice. Therefore the study outcomes and findings have direct implications for Rwandan land administration in particular, and the national land sector in general. LTR was used as a land policy tool to provide tenure security to all Rwandans. Land tenure security indicators developed by this study can assist in monitoring the achievement of such land policy objectives. Rwandan policy makers and land administration agencies are urged to pay special attention to what this study qualifies as threats to land tenure security. Failure to address those threats risk undermining any acquired benefits. For instance,

the newly introduced land information system will quickly become outdated if conditions preventing the poor from reporting changes in land tenure are not removed. The study has pointed out areas of inconsistency between land related policies and laws and how these affect the tenure security of the poor. The remedy to this issue requires joint efforts between land departments and other national sectors involved in land issues; to harmonise land related laws and policy. In the same line, collaborative effort is needed to insure the right balance between land rights and restrictions.

(3) Recommendation for future research

This study has filled a knowledge gap with both theoretical and empirical evidence. It is believed that a significant contribution to pro-poor land administration has been made: the study adds to existing evaluation tools, a pro-poor framework to measure land tenure security. However, it is acknowledged that this study is not an end in itself. If we agree that when it comes to the land tenure security of the poor, context matters, the first line of future research would be to apply the proposed framework in a different context. This study has shown that current pro-poor technology solutions for land recordation do not match with other land administration systems design requirements. The second axis for future research would be to revisit available technological options for land recordation to find more practical solutions suitable to the poor. Due to the limited nature of the data used, it was not possible to examine the effects of LTR per type of land conflicts. Similarly, effects of LTR to the value of land were not investigated. Future research should focus on those aspects. The sustainability of land information systems was found to be a big threat to the security of the poor. Future research would need to come up with models for land tenure change updates that are accessible to the poor.

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Summary

Land tenure security is increasingly seen as a foundation element requirement to the achievement of global development goals including poverty alleviation, food security, sustainable development, and women's empowerment, amongst others. More recently securing land tenure was set as one of the targets of the Post-2015 Development Goals, the replacement to the Millennium Development Goals. The relevance of land tenure security is also reflected in other global and regional land related instruments such as the Voluntary Guidelines on Responsible Governance of Tenure, Forest and Fisheries, the Framework and Guidelines on Land Policy in Africa, and the Land Governance Assessment Framework. Moreover, at the national level, in many developing contexts, national land policies remain dominated by a common goal: improving land tenure security. Indeed, since the 1990s, global financial institutions such as the World Bank, and other international development organisations and donors, have paid a renewed attention to the issue of land tenure security. This materialises in supporting governments of developing countries to implement land administration interventions aiming at enhancing land tenure security.

A more recent, and perhaps well overdue trend relating to land tenure security, is the special attention being afforded to the poor, particularly the rural poor. Estimates suggest 70 percent of the world's extremely poor people live in rural areas of developing countries; and that land is the main source of livelihood. The global land administration community has reached a consensus on a need for pro-poor land policies, approaches and tools. Initiatives such as the Global Land Tool Network (GLTN) were established with a specific mandate to develop pro-poor land management tools. Recent developments in land administration, including new conceptual approaches, land policy tools, surveying and mapping tools and techniques, were all designed to meet the need of the poor. The application of these pro-poor tools and approaches is already evident. In many developing countries, existing land administration systems are experiencing a phase of re-engineering, land governance institutional arrangements have been redesigned, land policies and laws redrafted, and land administration interventions are taking place. To ensure effectiveness, all these developments require assessment. This has spurred the need for pro-poor land tenure security indicators to be developed. Such indicators are needed to assist governments and land administrations agencies to measure and monitor achievement of national land policies and objectives. However, existing tools for assessing land tenure security were designed for conventional land administration, and are reputed as biased against the poor. The literature proves that existing indicators are less sensitive to contextual aspects that are characteristic of Sub Sahara African land tenure systems.

Development agencies and donors involved in the land sector have contributed to the development of indicator-based frameworks for measuring land tenure security holistically. However, already those tools and frameworks are acknowledged to be less holistic in scope; they are often tailored to specific agencies' goals, philosophy and agenda. Efforts to bridge this gap tend to focus on global and national indicators, while little is done to avail context specific indicators. All these circumstances justify the relevance of this study.

In this study, a special focus is placed on understanding and assessing the land tenure security of the rural poor in Sub-Saharan Africa, bearing in mind that this region is home to the majority the rural poor. The following research question guided the research: "how can improvements or changes to the land tenure security of the rural poor in Sub-Saharan Africa, be holistically measured?" Behind the above research question, the goal is to investigate how to measure land tenure security from a pro-poor perspective. The overall objective of the study is to develop a framework based on pro-poor indicators to measure improvements or changes in land tenure security of the rural poor in the Sub Saharan Africa context. Under this overall objective, three specific objectives were formulated: (1) to conceptualise the concept of land tenure security specifically for the rural poor in the Sub-Saharan Africa context; (2) to develop an indicator based framework to measure the land tenure security of rural poor in Sub Saharan Africa; (3) to empirically validate the framework and to evaluate pro-poor land tenure security indicators using the case of the Rwandan Land Tenure Regularisation (LTR) intervention. To achieve the study's objectives, a mixed method design was applied. The implementation of the study has followed the methodological steps of design research, complemented by systems thinking, as an overarching study approach.

The study set the scene by re-establishing the concept of land tenure security to make it fit the situation of rural poor in the Sub Sahara African context (objective 1). Results indicate that, existing land tenure security conceptualisations are discipline oriented constructs, which hardly accommodate the contextual nuances of rural Sub-Sahara African land tenure systems. The major contribution of this study was the introduction of systems thinking as a framework for conceptualisation of tenure security of the poor. The newly introduced conceptual model defines land tenure security as an emergent property of any land tenure systems that are object of the study. The key message out of the findings is that land tenure security concept is highly context sensitive, especially when it is regarded through pro-poor lens. The proposed conceptual model differs from other conventional understanding of land tenure security in many ways. The conceptualisation integrates in a single model, aspects of tenure security, that in past were

studied in isolation. For instance, the model explores the dynamism between the continuum of land rights and restrictions and the sustainability of a land information system; and the implication of such dynamism on the tenure security of the poor.

The new conceptual model of land tenure security was used as the basis for developing an indicator based framework to measure the land tenure security of the rural poor in Sub Sahara African context (objective 2). The systems based approach for indicator development enabled the creation of a holistic set of indicators covering aspects that in the past, were given little attention. The use of the systems approach is considered novel in comparison to existing practices that tend to give preference to fewer quantitative and linear indicators. Selected indicators include, but are not limited to, the sustainability of land registries and spatial land information, legitimisation of both social and public institutions; social protection and recognition of land rights; social enforcement of land rights; institutional harmonization; the substance and consistence of land related laws and policies; the balance between land rights and land restrictions; and cases of land grabs, people's empowerment and awareness on their land rights.

The empirical validation of the framework (objective 3) was made using the recent case of the Rwandan Land Tenure Regularisation (LTR) program. It is anticipated that the framework can also be applied in different contexts other than Rwanda. Two areas of application were explored: (1) measuring changes on the land tenure security of the rural poor after a land administration intervention, and (2) evaluation of pro-poor land administration vis a vis land tenure provision. Findings provide evidence on how the Rwandan rural poor have benefited from LTR. Equally, results reveal how registered benefits are challenged by new threats to tenure security that in some cases have rendered the poor more vulnerable than prior to LTR. Furthermore, results indicate that pro-poor technical solutions to land administration can be successfully implemented at national scale. However, it should be recognized that implementation of the elements does not guarantee improved land tenure security for the poor.

Based on the findings of this study, implications on land policies, Rwanda and future research were derived. The study urges policy makers to revisit evaluation routines that tend to focus on economic outcomes. Findings prove that the land tenure security of the poor involves more than economic outcomes. Rwandan policy makers and land administration agencies are encouraged to pay a special attention to what this study qualifies as threats to land tenure security. Failure to address these threats risks loss of any acquired benefits. For instance, the newly introduced land information system will quickly get out-dated if conditions preventing the poor from reporting

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changes in land tenure are not removed. This study highlights areas that need further research. Among others, future research should seek the development of models for land tenure change updates that are accessible to the poor.

Samenvatting

Zekerheid van grondbezit wordt in toenemende mate gezien als een noodzakelijk basiselement voor het bereiken van de wereldwijze ontwikkelingsdoelen, waaronder armoedebestrijding, voedselzekerheid, duurzame ontwikkeling en de versterking van de positie van vrouwen. Meer recent is grondbezitszekerheid zelfs als een specifiek doel opgenomen in de Post-2015 Ontwikkelingsdoelen, die de Millennium Development Goals vervangen. De relevantie van grondbezitszekerheid komt ook naar voren in andere wereldwijde en regionale instrumenten inzake grondbeleid zoals de Voluntary Guidelines on Responsible Governance of Tenure, Forest and Fisheries, de Framework and Guidelines on Land Policy in Africa, en het Land Governance Assessment Framework. Bovendien vormt grondbezitszekerheid een cruciaal onderdeel van nationale –op verdere ontwikkeling gerichte– beleidsvoornemens rondom grondpolitiek. Vanaf de jaren negentig hebben wereldwijde financiële instituties zoals de Wereldbank, en andere internationale ontwikkelingspartners en donoren, bovendien een hernieuwde aandacht voor onderwerpen rondom grondbezitszekerheid. Dit vertaalt zich onder andere in het geven van steun aan regeringen van ontwikkelingslanden inzake interventies om grondboekhoudingen op te zetten of te verbeteren om zo de grondbezitszekerheid te vergroten.

Een meer recente, en waarschijnlijk hoognodige, trend inzake grondbezitszekerheid, is de speciale aandacht voor de positie van de armen, vooral ook op het platteland. Schattingen suggereren dat 70 procent van de allerarmsten in de wereld op het platteland in ontwikkelingslanden woont, en dat grondgebruik hun hoofdbron van bestaan vormt. De wereldwijde gemeenschap die zich met grondboekhoudingen bezig houdt is tot overeenstemming gekomen dat een op armen gerichte aanpak in grondpolitiek, grondbeleid, benaderingen en instrumenten noodzakelijk is. Initiatieven zoals het Global Land Tool Network (GLTN) zijn opgezet met een speciaal mandaat om grondbeheerinstrumenten te ontwikkelen waar ook de armen wat aan hebben. Recente ontwikkelingen binnen het vakgebied (in het Engels meestal met 'land administration' aangeduid) zijn ontworpen met het oog op de noden van de armen en betreffen onder andere nieuwe conceptuele benaderingen, instrumenten voor het ontwikkelen van een goede grondpolitiek, alsmede nieuwe landmeetkundige en cartografische technieken. De toepassing van deze nieuwe instrumenten en benaderingen is intussen ook zichtbaar. In veel ontwikkelingslanden ondergaan de bestaande grondboekhoudingen een fase van herontwerp, bestuurs- en beheerarrangementen rondom grond ondergaan een herontwikkeling, beleid en wetten worden herschreven, en interventies rond land administratie vinden plaats. Om bij te dragen aan de effectiviteit van dit alles, dienen deze ontwikkelingen beoordeeld te kunnen worden. Dit vertaalt zich in de

noodzaak om te komen tot indicatoren inzake de grondbezitszekerheid van armen. Zulke indicatoren zijn nodig om regeringen en land administratie diensten bij te staan in het meten en monitoren wat gerealiseerd wordt van de voornemens inzake nationale grondpolitiek en grondbeleid. Echter, bestaande instrumenten voor het beoordelen van grondbezitszekerheid zijn ontwikkeld voor de conventionele land administratie, en die staan bekend om hun eenzijdigheid waardoor ze vaak negatief uitpakken voor de armen. De literatuur heeft aangetoond dat bestaande indicatoren minder gevoelig zijn voor contextuele aspecten die opgeld doen in de vormen van grondbezit zoals die voorkomen in Afrika ten zuiden van de Sahara. Ontwikkelingsorganisaties en donoren, werkzaam in de land sector, hebben bijgedragen aan de ontwikkeling van op indicatoren gebaseerde raamwerken voor het meer integraal meten van grondbezitszekerheid. Echter, ook deze instrumenten en raamwerken staan nog steeds bekend om hun gebrek aan integraliteit in de aanpak: ze zijn veelal toegesneden op de specifieke doeleinden, overtuigingen en prioriteiten van specifieke diensten. Pogingen om dit kloof te overbruggen neigen naar een focus op wereldwijze of nationale indicatoren, terwijl er weinig is gedaan inzake context specifieke indicatoren. Alle voorgaande omstandigheden rechtvaardigen en onderbouwen de relevantie van dit onderzoek hiernaar.

In dit onderzoek wordt speciaal de aandacht gevestigd op het begrijpen en beoordelen van de grondbezitszekerheid van armen op het platteland in Afrika ten zuiden van de Sahara, in ogenschouw nemende dat deze regio het gros van de armen op het platteland herbergt. Het onderzoek werd geleid door de onderzoeksvraag: "hoe kunnen verbeteringen of veranderingen inzake grondbezitszekerheid van armen op het platteland in Afrika ten zuiden van de Sahara, holistisch worden gemeten?". Achter deze onderzoeksvraag schuilt het doel om te onderzoeken hoe grondbezitszekerheid gemeten kan worden vanuit het perspectief van de armen. Het hoofddoel van dit onderzoek is om een raamwerk te ontwikkelen dat is gebaseerd op indicatoren om verbeteringen en veranderingen in grondbezitszekerheid van armen op het platteland in Afrika ten zuiden van de Sahara te meten. Onder dit hoofddoel, zijn drie specifieke doelen geformuleerd: (1) om het concept van grondbezitszekerheid specifiek voor armen op het platteland in de context van Afrika ten zuiden van de Sahara vorm te geven; (2) om een op indicatoren gebaseerd raamwerk voor het meten van grondbezitszekerheid van armen op het platteland in Afrika ten zuiden van de Sahara te ontwikkelen; (3) om het raamwerk empirisch te valideren en om de armengerichte grondbezitszekerheidsindicatoren te evalueren met als voorbeeldinterventie het regulariseren van het grondbezit in Rwanda (Land Tenure Regularisation - LTR). Om de doelen van het onderzoek te bereiken is gebruik gemaakt van een gemengd methodologisch onderzoeksontwerp. De uitvoering van het onderzoek volgde de methodologische stappen van een

ontwerpstudie, aangevuld met systeemdenken als overkoepelende onderzoeksbenadering.

Het onderzoek startte met het herdefiniëren van het concept van grondbezitszekerheid, zodanig dat het past op de situatie van armen op het platteland in de context van Afrika ten zuiden de Sahara (doel 1). De resultaten gaven aan dat bestaande conceptualisering van grondbezitszekerheid discipline-afhankelijke constructies zijn, die nauwelijks ruimte laten om de nuances te omvatten van de grondbezitssystemen zoals die zich voordoen in Afrika ten zuiden van de Sahara. De belangrijkste bijdrage van dit onderzoek was het introduceren van het systeemdenken als raamwerk voor het conceptualiseren van de bezitszekerheid van de armen. Het nieuwe conceptuele model definieert grondbezitszekerheid als een emergente eigenschap van de grondbezitssystemen zoals hier onderzocht, een eigenschap dus die ontstaat als diverse onderdelen van het systeem integraal actief zijn. Bezitszekerheid aldus gezien wordt derhalve niet veroorzaakt door –bijvoorbeeld– een enkele wetsbepaling, maar ontstaat als het systeem in al zijn maatschappelijke omvang werkt. Hoofdboodschap uit de bevindingen is dat het concept grondbezitszekerheid zeer contextgevoelig is, vooral gezien vanuit het oogpunt van de armen. Het voorgestelde conceptuele model verschilt van de andere conventionele blik op grondbezitszekerheid op vele manieren. Het conceptualiseren integreert in één model aspecten van bezitszekerheid die in het verleden apart werden bestudeerd. Zo bestudeert het model bijvoorbeeld de dynamiek tussen het continuüm van landrechten en restrictieve rechten, en de duurzaamheid van een landinformatiesysteem (kadaster), alsmede de gevolgen van die dynamiek op de bezitszekerheid van de armen.

Het nieuwe conceptuele model van grondbezitszekerheid vormde vervolgens de basis voor het ontwikkelen van een op indicatoren gebaseerd raamwerk voor het meten van grondbezitszekerheid van armen in Afrika ten zuiden van de Sahara (doel 2). De systeembenadering van het ontwikkelen van indicatoren maakte het mogelijk om een holistische set van indicatoren te maken die aspecten omvat die in het verleden weinig aandacht kregen. Het gebruik van de systeembenadering wordt als nieuw gezien in verhouding tot de huidige praktijk die doorgaans gebruikt maakt van een beperkt aantal kwantitatieve en lineaire indicatoren. De in dit onderzoek geselecteerde indicatoren omvatten (maar beperken zich niet tot) de duurzaamheid van grondboekhoudingen en ruimtelijke land informatie (de landmeetkundige kant), de legitimiteit van zowel sociale als overheidsinstituties, sociale bescherming en erkenning van landrechten, sociale handhaving van landrechten, institutionele harmonisatie, de inhoud en consistentie van grond gerelateerde wetten en beleid, de balans tussen rechten en beperkingen op

grond, gevallen van grondroof, en de zorg dat mensen op de hoogte zijn van hun landrechten en weten hoe die te beschermen.

De empirische validatie van het raamwerk (doel 3) is gedaan met als recente case het regulariseren van het grondbezit in Rwanda (Land Tenure Regularisation - LTR). Het is de verwachting dat het raamwerk ook in andere contexten dan die van Rwanda kan worden toegepast. Twee toepassingen zijn bekeken: (1) het meten van verandering van de grondbezitszekerheid van armen op het platteland na afloop van een land administratie interventie, en (2) het evalueren van armenvriendelijke land administratie vis-a-vis het verstrekken van grondbezit. De resultaten toont aan hoe de armen op het Rwandese platteland geprofiteerd hebben van LTR. Verder laten de resultaten zien dat armenvriendelijke technische oplossingen voor land administratie succesvol kunnen worden toegepast op nationale schaal. Echter, men moet wel in gedachten houden dat implementatie van de elementen niet automatisch tot verbeterde grondbezitszekerheid voor de armen leidt.

Het onderzoek leidt tot bevindingen inzake grondpolitiek, Rwanda en toekomstig onderzoek. Het onderzoek roept beleidsmaker op om hun evaluatieroutines te herzien, nu die zwaar sturen op uitsluitend economische gevolgen. De resultaten tonen aan dat de grondbezitszekerheid van armen meer omvat dan die economische gevolgen. De Rwandese beleidsmakers en land administratie diensten worden aangemoedigd om speciale aandacht te geven aan de bedreigingen van grondbezitszekerheid die in het onderzoek zijn gevonden. Mocht dat niet gedaan worden, dan bedreigt dat alle tot nu toe behaalde voordelen. Zo zal bijvoorbeeld het nieuw ingevoerde landinformatie systeem snel verouderde gegevens bevatten als de blokkades voor armen om veranderingen te registreren niet snel worden weggenomen. Het onderzoek benadrukt ook onderwerpen voor nader onderzoek. Onder andere zou nader onderzoek zich moeten richten op het ontwikkelen van modellen voor het registreren van veranderingen in grondbezit die ook voor armen toegankelijk zijn.

Biography



Marie Christine D SIMBIZI was born in Kamonyi, one of the districts in the Southern Province of Rwanda. In 2004, she graduated from the National University of Rwanda where she obtained a bachelor degree of Human and Physical Geography. She pursued her post-graduate studies in the University of KwaZulu Natal, South Africa and graduated in 2007 with a master degree of Environment and

Development; with specialization in Land Information Management. Since 2011, she has been working on her PhD research under the Faculty of Geo-information Science and Earth Observation (ITC) of the University of Twente, the Netherlands. Her research focus is on a pro-poor approach to measure land tenure security in Sub-Saharan Africa context. Her research outputs were presented and published in high profile international conferences and journals.

Marie Christine worked as an Assistant Researcher at the Centre for Geographic Information System and Remote Sensing of the University of Rwanda (CGIS-UR) since 2006. She was involved in research, teaching, consultancy and coordination of academic programs. Her research interest includes pro-poor land administration and management, land tenure systems, land information systems, spatial data infrastructure among others.

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