

URBAN CADASTRES FOR URBAN LAND GOVERNANCE: A SOCIO-TECHNICAL ANALYSIS

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ITC dissertation number 273
ITC, P.O. Box 217, 7500 AE Enschede, The Netherlands

ISBN 978-90-365-3905-0
DOI 10.3990/1.9789036539050

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UNIVERSITY OF TWENTE.

ITC

FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

URBAN CADASTRES FOR URBAN LAND GOVERNANCE: A SOCIO-TECHNICAL ANALYSIS

DISSERTATION

to obtain
the degree of doctor at the University of Twente,
on the authority of the rector magnificus,
prof.dr. H. Brinksma,
on account of the decision of the graduation committee,
to be publicly defended
on 17 June 2015 at 14:45 hrs

by

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Acknowledgements

This work would have not been in its present form without the immense support, dedication and contribution of different individuals and organizations to whom I am privileged to sincerely thank and acknowledge. Above all, Praise to God the Almighty, the Holy Savior, for reviving my strength, endurance and hope to have made it to this point.

First and foremost, I would like to acknowledge the financial support from the joint arrangement between the Swedish Development Cooperation (SIDA) via KTH and Bahir Dar University (BDU), Ethiopia, collaboration and the University of Twente, faculty of ITC to pursue this study. The additional five month fellowship from the ITC Fellowship Program (IFP) was extremely useful to finish this work without much delay. Overall, without these financial supports my dream would not have been accomplished.

My most sincerely acknowledgement goes to my promotor Prof. Jaap Zevenbergen. The idea of this research was born when prof. Zevenbergen and I met for the first time at the Social Tenure Domain Model (STDM) testing workshop conducted in Amhara Region of Ethiopia, Bahir Dar, in 2009. Prof Zevenbergen raised the idea of exploring options for a PhD during our informal conversation. That was started by a one and half page concept note that has been changed into this dissertation. Your unwavering efforts to arrange the joint funding scheme between SIDA, Sweden and University of Twente, the Netherlands was a pillar to realize my dream. Your dedicated support, guidance and encouragement from the beginning to the end of this research was instrumental. Especially during the first two and half years where there was no a supervisor next to you, the patience, understanding and confidence at me will be forever grateful.

After two and half years of the PhD journey, I had the opportunity to be supervised by Dr. Rohan Bennett with whom he was always forthcoming with new ideas and perspectives on different aspects of this study. His comments were always short, quick and to the point that really had the power to sharpen this work. Moreover, Dr. Rohan taught me the style of scientific paper writing and how to deal with comments from reviewers. Apart from these, you are also proved to be a good friend and a very easy person to communicate with.

During the course of this study, I had the opportunity to discuss with prof. van der Molen on different issues. Especially my first discussions during the proposal development with him were pivotal to shade light and eliminate the early stage confusions I encountered with. For all these, he deserves a special thanks. I would also want to extend this acknowledgement to Prof.

Hans Mattsson, KTH Institute of Technology, for his role in establishing the joint funding program to undertake this study. I would also like to recognize the contribution of Dr. Firew T. (former deputy vice president of BDU for academic affairs) and Seid H. (former director of Institute of Land Administration of BDU) for their efforts to made the PhD application at ITC successful.

Enormous supports and encouragements were received from the staffs of UNU-School of Land Administration Studies of the University of Twente in the form of both formal and informal discussions. For this special thanks goes to Liza, Dimo, Dr. Monica, Peter, Dr. Christian Lemmen, Dr. Tuladhar, and Dr. Walter.

I cannot forget the contribution of a number of special people that helped me during data collection at the federal, regions, cities and Kebele levels in Ethiopia. At the Ministry of urban Development, Housing and Construction (MUDHCo) including Nega W., Solomon, Israel, Mekonnen, Rahel, Desta, Abebe K. (the then Advisor to the Minister on land issues), at Hawassa city municipality and Southern Nations, Nationalities and People (SNNP) Trade and Industry Regional Bureau including Bahirua, Berhanu, Afework, and Atinafu (the then Head of Land Development and management), at Ethiopian Mapping Agency (EMA) to Gezahegn G. (Technical advisor to the director), at Dire Dawa city administration Land Development and Management Bureau including Yonas, Berhanu, and Nuru, and at Bahir Dar city municipality and Amhara Region Urban Development and Industry Bureau Shibie, Mulualem, and Sultan. In addition, the people who participated in the interview, group discussion and questionnaire surveys in the three cities are also highly acknowledged. Especially Mr. Antehunegn in Wuramit *Kebele* of Bahir Dar city deserves a special appreciation for his role both in coordinating and hosting the group discussion in his own house that was accompanied by the wonderful Ethiopian coffee ceremony.

I would also like to extend this acknowledgment to the ITC GIS and Remote Sensing Laboratory staffs especially to Ms. Petra due to the assistance received during the order and purchase of the satellite data. My wholehearted appreciation goes to the ITC support staffs including Loes Colenbrander, Petra (management assistant of PGM), Theresa van Boogaard, Bettine Geerdink, the entire IT helpdesk staffs, the wonderful staffs at ITC hotel, library, travel unit and finance department especially Ms. Marion for their charming and wonderful services.

I would also like to thank the large PhD colleagues for their support and encouragement in different events including Abebe A., Peng, xuaoling, Sonia, Oliver, Getachew B., Merry Christini, Saad, Rahmet, Dr. Dawit, Dr. Arko, Dr.

Zahir, Dr. Fekerte, Vincent, Dr. Jene, Job, Dr. Fransis, Dr. Alfonse, Reshima, Eva Maria, Atikilt, Elias, and Adugna. The 2013 ITC Run4Fun team members and coordinators were the source of happiness and joy especially during the Batavierenrace 2013 event.

I would like to leave a special words of thanks to relatives and friends back home and abroad for their inspiration and encouragement. These include: Tesfaye A., Banchayehu A., Meselu (Talem), Molla and his entire family, Fasil Getahun, Gashaw M., Dires A. and his family, Chalachew A. and his family, Ashenafi A. and his family, Mamush A. and Tewabe. For Mequanint, no suitable word is found to thank you for the help you provided to my families whenever they were in need - you are just a man committed to help people.

The unreserved support gained from my family members were the engine of my every day academic success. I extend my gratitude to my dad Kefale A., my mom Azagne M., my sisters and brothers for your pains, prayers and everything you offered to me in my entire life. My father-in-law Alamirew A. (late) and mother-in-law Takelech E. deserves a special acknowledgment for their continuous encouragement and assistance to my families during my absence.

Finally, my last word of thanks goes to the most precious person in my life, my wife Mintiwab Alamirew, for all the exceptional love, support and comfort relentlessly assured throughout this rather lengthy research period. You made the journey more "endurable" and you proved to be '*A woman of virtue is a crown to her husband*' (Proverbs 12:4). To our two daughters Gelila and Loza, the spice of our life, my love and acknowledgement is endless. Your everyday question via Skype 'why don't you come home?' clearly shows how my absence affected you morally and mentally for the last couples of years. Now, I promise you I will not be away from you a long time like this.

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Chapter 1

Introduction and Background

1.1 Introduction

The Institute of Land Administration (ILA) of Bahir Dar University, Ethiopia, trains professionals on the topics of land administration, cadastre and land governance. In 2008, when the institute started constructing its new campus in the peri-urban areas of Bahir Dar, people-to-land relationships in the area abruptly changed: people converged upon the surrounding area and new illegal houses and businesses sprang up. Observers satirizing the situation suggested that 'the next step will be to build illegal houses within the ILA compound itself', 'what a nice demonstration for the ILA students and the surrounding community'. The observers were revealing the reasonable expectation that the establishment of institutions like ILA was supposed to stop illegal activities – not promote them. In time, the informal settlements were demolished; however, a sustainable solution to the problem goes beyond mere piecemeal demolition, or even training programs: an integrated approach for dealing with urban people-to-urban land relationships is needed, one that cuts across governance layers to link people, land, and processes. People-to-land relationships are local activities; however, land governance activities tend to focus on generalized approaches and national scales and thus do not cope with addressing problems at the local levels. An integrated approach is vital. This proposition marks the starting point for this PhD research.

1.2 Setting the scene

People's attachment to land predates recorded history: land is, and always was, intimately linked to livelihoods. Rapid population growth is increasing the number of people-to-land relationships, particularly in urban areas: many parts of the world are experiencing unprecedented pressure for urban land. Housing and socio-economic expansion drive the demands. When the needs are not met, urban poverty and unsustainable urban development are the result. People-to-land relationships are therefore recognized as key to getting governance right (Palmer *et al.* 2009). The different rights, responsibilities and restriction that exist between land users and land need to be systematically understood (Bennett 2007). Integrating the usually disparate information about urban people-to-land relationships, from across governance layers, is argued here to be an innovative and supportive approach to tackling the multi-dimensional challenges mentioned.

This research is about integrating urban information from different sources, including cadastres with their spatial and social attributes, with broader land governance concepts. In the age of Anthropocene, the governance discourse gains wider coverage in policy and scientific debates on sustainable urban development. This is because contemporary urbanization is central to the global development agenda as is recognized as both a concern and an opportunity, especially for countries with emerging economies including Ethiopia. This chapter provides the conceptual background for the

contemporary understandings of the role of urban land, cadastres and land governance in sustainable urban development. These three concepts form the foundations of the entire research. The underlying research problems that underpin this research are justified and discussed accordingly. Subsequently, the research objectives and overarching research methodology are explained. Finally, the thesis structure is provided and justified.

1.3 Urban land and urbanization

Urbanization is a composite of both social and spatial dimensions. It includes the relationship between urban people and urban land. This relationship leads to the formation of urban properties such as buildings, infrastructure, or built urban environment more generally. Both vertical and horizontal urban growth and associated socio-economic activities are underpinned by the availability of urban land. In recent times, a higher rate of urban population growth is experienced than previously. This unprecedented demographic change creates a more urbanized global population for the first time: since 2007 the global urban population has exceeded the rural population. The magnitude of the urbanization, however, differs in developed and developing nations. A UN-Habitat estimate, for example, shows that more than 82% of the recent urban population growth (UN-Habitat 2012b) and more than 70% of the world mega cities with populations larger than one million are found in developing countries (Cohen 2006). Projections also show that the growth of urban populations, particularly in the developing world, is expected to be twofold between 2000 and 2030, while, the spatial boundaries of the built-up area of cities in the region are expected to be triple (Angel *et al.* 2011). This implies that the urban population-to-urban land relationship will continue to be intensified.

The impact of urbanization on urban land, however, can be viewed in two ways: positive and negative. Its concentration in a relatively small spatial area or urban land is an advantage. According to Netzband *et al.* (2007), cities occupy only 5% of the Earth's land surface, which is insignificant as compared to the large number of inhabitants. This has numerous administrative, environmental and resource management implications including: efficient and cost effective service delivery, low land consumption, low impact on farmlands and local ecosystems, efficient management of the relatively small urban land, and easier facilitation of public administration and governance. Combined, these facets create a favourable platform for dealing with different societal problems, such as service delivery and poverty alleviation. Overall, urbanization provides the opportunity to achieve sustainable urban development goals.

On the other hand, urbanization raises a series of concerns. Some of these include: the high rate of horizontal expansion of urban areas, especially in developing countries, causes unplanned conversion of large tracts of farmlands and natural ecologies into urban areas (UN-Habitat 2010, Boamah 2013). This leads to both food security and ecological concerns. The vertical growth of properties in the form of 3D and 4D (e.g. the cases of condominium houses) adds further complexity to the nature of urban people-to-land relationships. In this case, for example, an urban parcel may belong to more than one urban person, which is different from the traditional 2D way of understanding people-to-land relationships. Actors involved in urban land sectors are many and their interests are diverse. In this regard, dealing with each of these interests is difficult and obviously time and resource consuming. Government's failure to respond to the housing needs of the urban poor, either through providing government houses or urban land, leads to slum formation and illegal land occupation (*c.f.* van dar Molen (2014)). This leads to tenure insecurity concerns. Urban areas produce 75% of pollution and solid waste (Netzband *et al.* 2007). This contributes to the escalation of climate change and health concerns. Each of these concerns of urbanization are multifaceted in nature and interrelated with one another and cannot be adequately addressed by the existing conventional management and governance approaches (Cohen 2006, Bhuiyan 2010, Kironde and Yhdego 1997) especially in developing countries: where important supporting tools such as cadastre and land use plans are usually incomplete and obsolete (Fekade 2000, UN-Habitat 2009).

Contemporary policy, governance, environment and sustainable development debates focus on the concerns of urbanization and their impacts on urban land. Different international conferences have been organized to shed light on understanding these impacts, their underlying causes and possible solutions. The following section discusses some of the major declarations from these conferences that are fundamental to the present efforts.

1.4 The global agenda

In the 1980s, the impacts of urbanization, environmental problems and climate change became visible. The 'Our common future' report (UN 1987) was a milestone in informing the global community about the status of the planet and the need for immediate actions to protect further impacts. Following this report, issues of sustainable development and environment were discussed in Agenda 21 during the Rio de Janeiro conference (UN 1992): how to create a harmony between environmental and development was the main focus. In addition, the Habitat II agenda in Istanbul specifically focused on the rapid urbanization, its challenges and future impacts on realizing sustainable urban development especially in developing countries

(UN 1996). Overall, the issues of people-to-land relationships appeared to be the primary sources for the different contemporary challenges. For example, when urban land-to-urban people relationships are poorly managed, it impacts the quality and use of urban lands and consequently deters the realization of sustainable urban development. Meanwhile, proper governance and management of urban people-to-urban land relationships supports social, economic and environmental developments and sustainable urban development in general. In this regard, prosperous, green and liveable towns and cities, that are suitable for its dwellers to live, can be easily realized.

The notion of creating governance demands a harmonious relationship between people and land. One way of doing this is through strengthening policy and legal frameworks, as acknowledged during the Agenda 21 conference. This include setting norms on how to deal with societal issues such as access to land and guaranteeing land tenure security for the urban landholders. International initiatives such as the land tenure campaign (UN-Habitat 2004a), land for all (GLTN 2008), the Millennium Development Goals (MDGs) (UN 2000) and the Post-2015 Development agenda (UN 2013) also acknowledge the need for strengthening institutional capacities across government structures, including the grassroots level, to improve policy and law making and implementation. The next section discusses how to support the different aspects of policy and law formulation and implementation processes.

1.5 Supporting the global agenda

Following the increased concerns on the people-to-land relationships, the roles of cadastre, land registration and land administration, as well as land governance are increasingly recognized. For example, the 1995 FIG statement on cadastre laid the foundation for the nature and design of future cadastral and land registration systems (FIG 1995); the UN-FIG conference at Bathurst in 1999 articulated the significance of future land administration in sustainable development (UN-FIG 1999); and the UN-FIG conference in 2009 at Washington DC addressed the issues of how land governance can play a vital role in supporting global agendas of MDGs (FIG/World Bank 2009). The support of cadastres, land registration, land administration, and land governance, in dealing with different aspects of present and future urban people-to-urban land relationships, in line with the notion of sustainable urban development agendas, are extensively discussed in literature (*c.f.* Bennett *et al.* (2010), Williamson *et al.* (2010), Zevenbergen *et al.* (2013) and Henssen (2010a)). Next, each one of this is discussed.

Land governance

According to literature (*c.f.* Kemp *et al.* (2005)), the concept of governance inherited its roots from political science in the 1980s. Governance can have a variety of definitions depending on the areas of interest, albeit the main pillars including policy and legal frameworks, actors, processes and the inquiry of information for decision making, are common to all the definitions. In this research land governance is defined as “the policies, processes, actors¹ and institutions by which land, property and natural resources are managed through decisions on access to land, land rights, land use, and land development” (FIG/World Bank 2009). Following the rise of concerns in relation to urbanization, climate change and others, where the issue of land is highly embedded, land governance received attention internationally especially in connection with its potential role in supporting the MDGs.

Governance concepts can be applied at different stages of the decision making process, for example, during formulation and implementation of policies and legal frameworks. Exercising an inclusive and transparent decision making process not only helps to tackle societal problems at the grass-root level, but also helps to further improve land policies and laws. This implies that establishing a governance system makes the decision making and policy direction address the issues of the majority of urban dwellers such as urban land access, housing and infrastructure provision.

Different efforts are being undertaken to improve understandings of land governance and measure it at the operational level. In this regard, the comprehensive contributions of international organizations such as the World Bank, UN-Habitat, Slum Dwellers International, and Lincoln Institute of Land Policy can be mentioned. For example, the World Bank developed a Land Governance Assessment Framework (LGAF), which is a comprehensive indicator based framework, to assess the land governance in each country (*c.f.* World Bank (2010)). Specific to urban areas, UN-Habitat undertakes different urban governance awareness creation campaigns through its different programs such as the urban governance campaign (UN-Habitat 2004b), tenure security campaign (UN-Habitat 2004a) and land for all (UN-Habitat 2004c) among others. In addition, UN-Habitat is also developing pro-poor tools that help to improve urban governance in general and land access and tenure security in particular through knowledge management, institutional capacity, and capacity development and advocacy (*c.f.* GLTN (2012)). In addition, the Lincoln Institute of Land Policy focuses on developing land policy options to address issues of tenure security, land use, land markets and property rights, or land governance more generally (*c.f.* Bahl and Linn (2014)). These different efforts contribute greatly to dealing with the issues of land governance from different dimensions including policy,

¹ Here, actors refer to representatives of organizations and interest groups in urban land.

implementation tools, and assessment frameworks. Despite these efforts, however, the challenges especially in urban areas such as slums formation remain alarming (*c.f.* van der Molen (2014)).

Cadastral information is the basic resource in decision making related to land (Dale and McLaughlin 1988) such as discussed above. In addition, good land information also underpins good governance (UN-FIG 1999). The next section discusses the nature and significance of land information in land governance.

Cadastre, land registration and land administration

Van der Molen (2014) points out that the recognition of urban people-to-urban land relationships through systems of cadastres, land registration and land administration is an important aspect of dealing with the issues of slums, informal settlements and arbitrary evictions.

According to the 1995 FIG statement, a modern cadastre is defined as “a parcel based, and up-to-date land information system containing a record of interests in land (e.g. rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, the ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes (conveyancing), to assist in the management of land and land use (e.g. for planning and other administrative purposes), and enables sustainable development and environmental protection” (FIG 1995). Two main compartments exist in this definition. The first is the geometrical part, which records the geometry or territory of the urban land parcels and the second is the registration part, which records attribute information regarding the urban people and the legal aspects of its interaction with the urban land. According to van der Molen (2011), the latter refers to the recordation of the description or information of the legal aspect of a parcel that defines the nature of relationships between the people and the parcels including the types of rights, responsibilities, restrictions and ownership details. The two combined can be conceived as a cadastral system as utilized in different literature (*c.f.* Zevenbergen (2002), Barry (1999), and Silva (2005)). A similar conception is applied throughout the entire course of this research.

Land administration is defined as “the processes of recording and disseminating information about the ownership, value and use of land and its associated resources” (UNECE 1996). The definition shows the cadastral system is central for the broader purposes of the land administration system: both the spatial and attribute information in the cadastral system are pertinent in land administration functions: they support the establishment of tenure security, land and property taxation, land market monitoring, land

dispute reduction, urban planning, and infrastructural development projects, amongst other activities (*c.f.* Williamson *et al.* (2010), Zevenbergen *et al.* (2013) and Henssen (2010a)).

The broader land administration system in general and its core component, the cadastral systems in particular, are subjected to continuous evolution and reform (*c.f.* Steudler (2004)). This is because the people-to-land relationships are continuous and dynamic: this is more pronounced in the urbanized setting. The interests of the people in urban land are also changing. The land administration system, thus, should respond to contemporary and anticipated future people-to-land relationships (*c.f.* Bennett *et al.* (2010)). In response, different cadastral and land administration theories and models have evolved over time. These refine understandings of both conceptual and technical designs. Some of these theories include: the land management paradigm (Enemark 2005), the multi-purpose cadastre (McLaughlin 1975), cadastre 2014 (Kaufmann and Steudler 1998), and the 'fit-for-purpose' land administration (Enemark 2014).

Despite the efforts, the functionalities of cadastral systems, the status of cadastral systems are at different levels of technical design, system administration and practical function in different countries. The economic, political, technical, institutional and administrative capacities of nations are crucial to success (Zevenbergen 2002). For example, in developed countries, such as the Netherlands, 100 percent of the land is formally registered (*c.f.* Zevenbergen (2002)). Meanwhile, in Sub-Saharan countries, over 70 percent of the land is not formally recorded (Enemark 2014, Augustinus 2010). This shows that the operation of the cadastre is poor and encounters failures. For example, attempts at building a multipurpose cadastre in Ethiopia failed to reach objectives (Alemie *et al.* 2015a). This implies that decision making for dealing with the people-to-land relationships in these regions is not supported by reliable information. This has implications for the quality of decision making and ultimately the resolution of broader societal problems.

To close several of these gaps, a fit-for-purpose cadastral theory that takes into account the contemporary technical, administrative and socio-economic capacities of developing countries has been suggested (*c.f.* Enemark (2014)). The flexible nature of the fit-for-purpose concept seeks to respond to immediate societal needs for a given socio-economic situation. It allows for the possibility of further upgrading when resources and capacities are available. In this way, information can be made more quickly available to decision making processes, and ultimately governance can be improved.

Overall, the discussion so far created a conceptual basis in land governance, cadastre and land administration systems, especially in the context of urban

land. The research problems that emerge in these areas of interest, which makeup this research are now discussed.

1.6 Research formulation

Research problems justification

This research attempts to address conceptual and methodological gaps in the land governance discourse. Justifications are now provided.

i. Conceptual gaps

Different literature (*c.f.* Olowu (2003)) recognizes the roles different government layers, including international, national, state and local, play in land governance and land management. Urban development is underpinned by the availability of urban land at the local level. In other words, the local level plays a crucial role for urban expansion and development. Despite these views, existing understandings and assessment of land governance is usually confined to the national and super-national levels (Björn 2008). LGAF is a good example in this regard: it only considers, until recently, the national context. A multilevel assessment of urban land governance is suggested here to address the existing shortcomings.

In addition, LGAF considers urban and rural land as a unified system. However, this may not always be the case due to various reasons. In some countries such as Ethiopia, policies and laws are different for urban and rural land. Previous discussions made clear that policies and laws are foundations for understanding and assessing land governance. A separate consideration of urban land is argued here to address the problem of generalization.

Furthermore, in the existing conceptual models such as the land management paradigm and LGAF, the potentially positive role of the cadastre in supporting land governance and land management are taken for granted. However, as it is discussed, undesired outcomes of cadastre are also possible. Therefore, a holistic conceptual model that shows how urban cadastre ought to, and ought not to, contribute to urban land governance is needed to avoid the existing perception.

ii. Methodological gaps

The state of the art of the spatial technology offers a unique opportunity to have access timely and accurate data. The human interference is considered minimal in the satellite images (Geoghegan *et al.* 1998). This is important, especially in land governance where the existing assessment methods are inclined to the social dimensions, that is subjected to bias and subjectivity (*i.e.* data reliability is a problem). Urban land governance is a composite of

social, which refers to the actions of people, and spatial (in this case urban land) dimensions. The outputs of urban land governance in general and the people-to-land relationship in particular, are manifested on urban land. This implies social and spatial dimensions play an equal role in urban land governance. However, in most cases the existing land governance assessment methodologies and models tend to focus on the social dimension and miss the spatial dimension. A socio-spatial methodology that encompasses both the social and spatial dimensions is argued to bridge this gap.

Overall, these conceptual and methodological gaps, and the lack of previous studies on the urban cadastre and land governance of the highly urbanizing contemporary Ethiopia, motivated this research.

Research Objectives and Questions

This research addresses four research objectives. Each research objective is tackled via a series of research questions and research methods. The research objectives together with the research questions are now presented.

Research objective 1

Examine urban land governance across different levels in Ethiopia.

Research questions

- What differences and similarities exist, in conceptual terms, between urban land governance and urban land management?
- What are the differences and similarities in urban land governance at different layers in Ethiopia, including national, regional and city levels?
- Is it possible to examine the 2011 urban land management policy of Ethiopia through the lens of contemporary land governance and management conceptions?

Research Objective 2

To examine the evolution of Ethiopia's urban cadastres in support of urban land governance across three governing regimes.

Research questions

- What is/are the role(s) of cadastres in countries where all the land is state owned?
- Which analysis tools are useful for undertaking holistic analysis of the roles of urban cadastre for urban land governance in Ethiopia?

- What is the contemporary status of urban cadastres in Ethiopian cities and what are their role with respect to supporting urban land governance?
- What can other countries learn from Ethiopian urban cadastres?

Research Objective 3

To develop and test a socio-spatial methodology for evaluating urban land governance and test it with case studies.

Research questions

- How can an integrated methodology that portrays the roles of the social and spatial dimensions in urban land governance be developed?
- How can the developed methodology be tested in a case study location?
- What is the implication of the developed methodology for an enhanced understanding of urban land governance?

Objective 4

Develop an integrated conceptual model to understand types of urban land governance across a continuum.

Research questions

- What is the conceptual meaning of the different debates in urban cadastre for urban land governance?
- How does the fit-for-purpose cadastral conception fit into the urban land governance continuum?
- What components need to be considered to holistically describe typologies of urban land governance?
- How can these components be integrated into the conceptual model?

1.7 Research methodology

This research has employed different methods constituting of literature reviews, case studies, exemplary cases and systems thinking. The specific methods are now discussed.

i. Literature review

Literature reviews are an important source of knowledge for understanding contemporary conceptual and methodological gaps in cadastre and land governance. In this regard, previous work and international organizations report on the realm of cadastre, land administration and land governance are important information sources. Apart from these, case study specific policies, laws, and regulations are useful for conducting policy and actor analyses for the different government layers, including the three case study cities.

Case studies

Two methods are applied to the case study cities. These include social and spatial methods.

i. Social method

The social method refers to the analysis of inputs (policies, laws and regulations) and processes (the actions of actors and their interactions) as they are applied in the case study. The aim of applying this method is to establish a link between the theoretical concepts, inputs and processes with the empirical evidence from the case study cities cadastres and land governance. The social method is applied to respond to the first three research objectives. Social data from the case studies are collected through questionnaires, interviews, observations and group discussions. These data are statistically analysed and triangulated to create common facts. The data was collected in two discrete epochs, in 2011, and at the end of 2013. In 2011, cadastral and land governance situations were assessed while proclamation 272/2002 was functional. Meanwhile, in the same year this law was replaced by proclamation 721/2011, following the 2011 urban land management policy, and thus the empirical data regarding this proclamation was collected in 2013.

ii. Spatial method

Geospatial technology offered a unique platform for the provision of spatial data of specific epochs and places. In this research, the spatial analysis is employed to create an understanding of the changes in spatial and temporal dimensions of informal settlements in one selected *Kebele* in Bahir Dar: informal settlements are outcomes of bad urban land governance such as inequity in land access (Haferburg 2002). From the informal settlements analysis, the extent and temporal changes of urban land governance is inferred. For the purposes of the work, two temporal satellite images of Bahir Dar city were used: QuickBird 2004 and GeoEye 2012. Information extraction, such as segmentation and semi-automatic object based techniques, were applied to the satellite data to derive useful information. The results of the spatial analysis were integrated with the social data analysis in order to develop understandings of the causes of urban land governance in the area, and therefore generate an all-encompassing understanding of urban land governance. The two analyses combined are referred to as a socio-spatial methodology.

Exemplary cases

Exemplary cases, often known as best practices, are useful benchmarks for comparison and evaluation of a country's cadastre, land administration and land governance (Williamson *et al* 2010)). They help to get lessons for reengineering and possible reform. An exemplary case from the Dutch cadastre and land governance is considered here. An intensive literature review including governance reports from the World Bank, scientific, and academic sources, is employed to understand the Dutch cadastre and land governance situation. In addition, land use data of a part of Enschede city is accessed via the Remote Sensing and GIS laboratory of the ITC faculty of the University of Twente.

Systems thinking

Cadastre and land governance involve different conceptual components. The interaction of the different components affects the nature and qualities of the cadastre and land governance. In order to understand this interaction, and examine the function of each component, systems thinking is applied. Previous studies on cadastre and land administration (*c.f.* Zevenbergen (2002) and Barry (1999) reveal the usefulness of systems thinking, in articulating how the different components integrate, interact, and function at the operational level. In this work, systems thinking is applied to integrate inputs and processes, cadastres, indicators and spatial outputs of indicators, in order to derive understandings about the different types of urban land governance in a continuum. The information about the inputs and processes, cadastres, indicators of urban land governance and their spatial manifestations are obtained from literature reviews, the social and spatial analysis of the case studies, and the exemplary cases.

Overall, this research applies a socio-technical analysis that includes social, spatial, exemplary cases and systems analyses (figure 1).

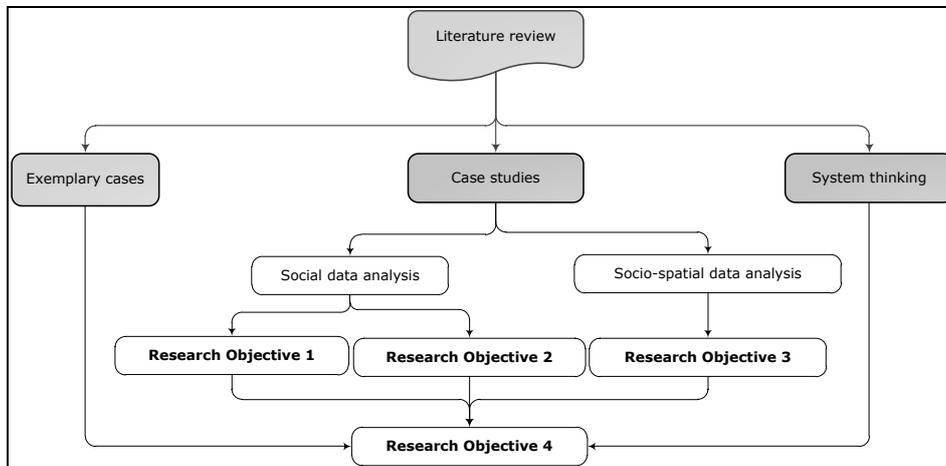


Figure 1 The overall research design and linkages between the specific objectives (shaded boxes are the main research methods applied).

1.8 Case study description

A case study approach is one of the main sources of information and knowledge. For this reason, three case study cities are considered in this research. This section presents the nature of ongoing urbanization in Ethiopia, and the description of the three case study cities.

Urbanization in Ethiopia

Urbanization in Ethiopia is dated back to 1907, during the time of emperor Menelik II, in connection with the establishment of Addis Ababa (Pankhurst 1966), where the central government administration first was situated. According to the Central Statistical Agency (CSA, 2007) report, only 17% of the population of Ethiopia is urbanized, whereas, nearly 30% of the Sub-Saharan Africa is urbanized (World Bank 2009). In the last ten years, however, Ethiopia has experienced a high rate of urbanization (Dorosh and Thurlow 2011). During these years the country has registered the twelfth fastest growing economy in the world (World Bank 2013a): the economic growth has been stronger in cities and towns (Dorosh and Thurlow 2011). The report from the Ministry of Finance and Economic Development of Ethiopia (2013) forecasts both the rate of urbanization and the economic growth will continue at an even faster rate.

As discussed in the previous sections, the manifestation of slums, poor waste management, illegal land occupation and others appear to be the major challenges the Ethiopian cities encounter. The study of UN-Habitat (2008d) reveals that a shortage of housing and lack of access to urban land for

housing appears to be the primary cause for informal settlements and slums in most urban areas of Ethiopia. The existing land use plans and cadastre do not cope with the demand of the contemporary urbanization (Alemie *et al.* 2015b). As a result, unplanned conversion of rural land to urban land is evident. This calls for an innovative approach that integrates the different information sources such as cadastral and spatial data into urban land governance.

Case study cities

This study was conducted in three cities in Ethiopia. These were Bahir Dar, Dire Dawa and Hawassa. Different criteria were considered in selecting these cities. These include: existence of functioning municipalities, all implementing the 2002 and 2011 leasehold proclamations, relatively comparable areal and population size (Addis Ababa is excluded due to this criterion) and distribution across the country (Figure 2). In addition, these cities experience rapid urbanization accompanied by fast growing economic development.

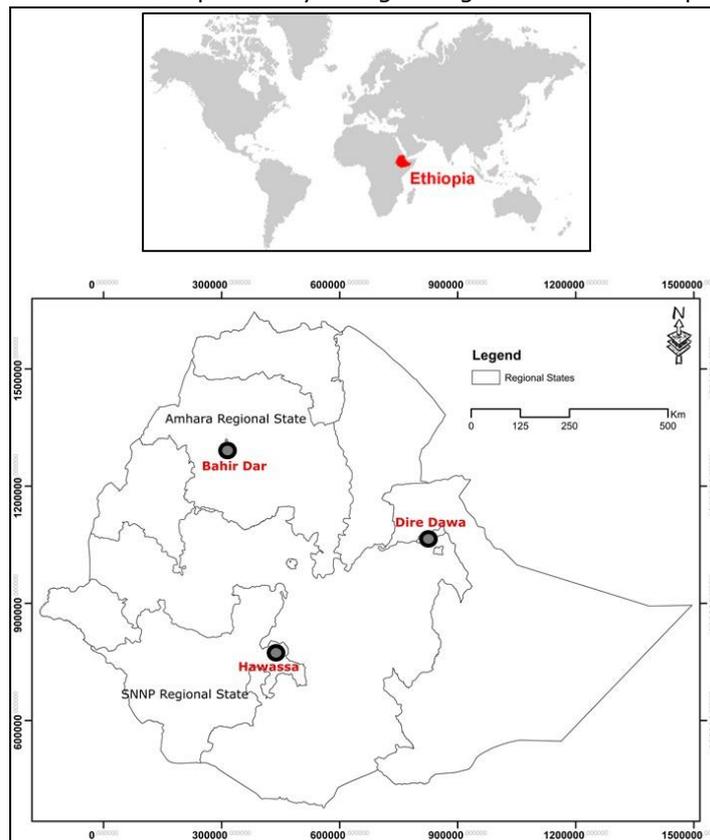


Figure 2 Location map of the case study cities

Bahir Dar

Bahir Dar is the capital city of Amhara National Regional State. It is located in North West of the country. It is situated on Lake Tana, a source of Blue Nile River. The total population in Bahir Dar is 155,428 (ECSA 2007). It is divided into 9 *Kebeles*². The city is known for its wide roads surrounded by palm trees. In 2002 it was awarded the UNESCO Cities for Peace Prize for addressing the challenges of rapid urbanization (UNESCO 2002).

Dire Dawa

Dire Dawa was founded in connection with the construction of Ethio-Djibouti railway in 1902. It is located in East of the country (Figure 2). Currently, it is a chartered federal city i.e. it is directly accountable to the federal government and not part of a regional state. Dire Dawa is home for 284,160 inhabitants (ECSA 2007), who are composed of diverse ethnic groups of dominantly Oromo and Somali. It is the second largest city in Ethiopia next to Addis Ababa, both in areal coverage and number of inhabitants. Contemporary Dire Dawa consists of 17 *Kebeles*.

Hawassa

The third case study city is Hawassa. It is the capital city of Southern Nations, Nationalities and People (SNNP) Regional State. It is located in the south of the country, within the rift valley depression bordered by Lake Hawassa to the west. Hawassa accommodates 157,139 inhabitants (ECSA 2007). The lowest level of administrative system of Hawassa is classified into 9 sub-cities³. General information for the three cities are presented in Table 1.

Table 1 A summary of general information of the case study cities

General information	Bahir Dar	Dire Dawa	Hawassa
Population	221991	284160	157139
Area size	28 km ²	29.24 km ²	27.65 km ²
Location	North West Ethiopia	Eastern Ethiopia	Southern Ethiopia
Function	Capital city of Amhara national region state government	Chartered federal city	Capital city of SNNP government

² *Kebele* is the lowest administrative hierarchy

³ Sub-cities are bigger than *kebele* in size

1.9 Thesis outline

This thesis consists of six chapters. This chapter discussed the introduction and background of the research and other foundational concepts that underpin the remaining chapters of the research. Details of each specific chapter are now outlined.

Chapter two – is devoted to the understanding of contemporary land governance and land management concepts. These concepts are applied both at the national and three case study cities level to conduct across level empirical analyses of urban land governance and management. Thus, this chapter presents the findings from detailed investigations of case studies and policy and actors analyses. Overall, this chapter captures the situation of urban land governance in early and contemporary periods of the ruling party of Ethiopia.

Chapter three - focuses on understanding the evolution of urban cadastre and its impact on the urban land governance in Ethiopia across the three regimes: the Imperial, Military and the EPRDF regimes. The strengths and weaknesses of the cadastres in the different regimes are outlined. In addition, the roles of each urban cadastre for urban land governance across the different regimes are examined. Overall, this chapter gives an overview of the evolution of urban cadastre and the contemporary direction of its development, and its contribution to urban land governance in Ethiopia. The work in this chapter is also published in Land Use Policy journal.

Chapter four – this chapter focuses on a new approach, at least in urban land governance discourse: a socio-spatial methodology to evaluate urban land governance is applied. In this chapter a conceptual framework that links the social and spatial dimensions of urban land with indicators of urban land governance is developed and tested through the analysis of social and spatial data from one case study. It also explores how urban land governance evaluation is supported from the current state of the art of geo-information technology. Direct and underlying causes of informal settlements and their implications to understanding of urban land governance are also explained.

Chapter five – this chapter first provides the contemporary debates surrounding urban cadastre. A holistic model is developed that provides a detailed understanding of the types of urban land governance as a continuum. It makes use of the results of the previous chapters together with systems thinking and exemplary cases information. Contemporary fit-for-purpose cadastral concepts are linked with good-enough land governance concepts. The conceptual model is considered as validated because the results of the previous chapters, where this chapter is underpinned, are

empirical results from case studies. An example of each type of urban land governance is provided. The holistic nature of the conceptual model is discussed, as are the way the conceptual model apply and future directions of improving it.

Chapter six – this final chapter synthesizes the findings of the entire research from the point of its contribution to knowledge, theoretical and conceptual implications in the cities of interest, and further research directions. The synthesis is structured using the specific research objectives and respective research questions, provided at the beginning of this chapter. Figure 3 shows the linkage between the different chapters.

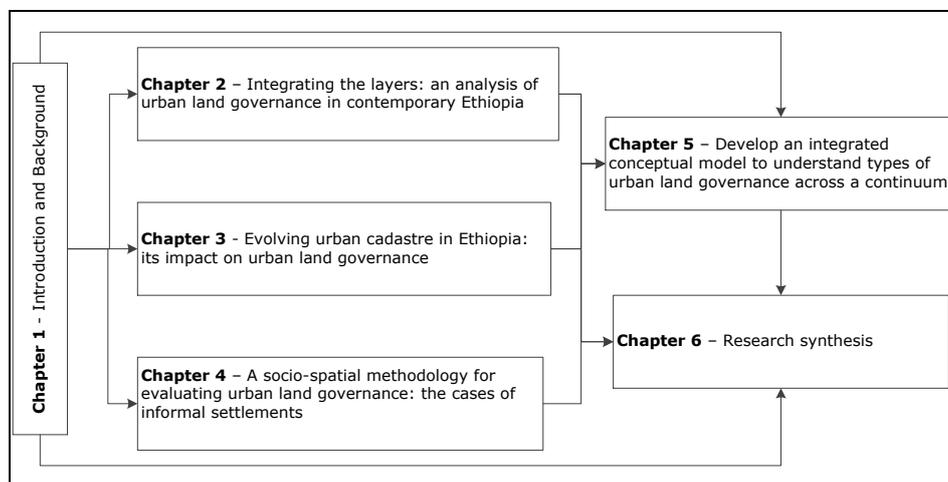


Figure 3 Linkage between the different chapters and overall structure of the thesis

1.10 Summary and conclusions

This chapter discussed the contemporary conceptualization and methodological research gaps in the realm of cadastre and urban land governance. Four research objectives along with a series of research questions for each specific research objectives were formulated. The research applies a mixed research methodologies between literature reviews, case study analysis, exemplary cases and system thinking.

Chapter 2

Integrating the layers: an analysis of urban land governance in contemporary Ethiopia *

* This chapter is based on the ISI article submitted to:
Alemie, B. K., Zevenbergen, J. & Bennett, R. (2015). Integrating the layers: an analysis of urban land governance in contemporary Ethiopia. *Administration and Society*, [Resubmitted after minor revision].

Abstract

Land is a cross-cutting theme in most contemporary development challenges: governance of land is therefore a focus of international organizations, donors, national governments, and research communities. Contemporary literature show that land governance benefits the broader administration and governance of society especially in urban areas. Tools enabling evaluation of land governance, for example the World Bank's Land Governance Assessment Framework (LGAF), emerged in the 2000s. However, application often focuses on national or supranational levels and often neglects local actors and contexts. Ethiopia provides a case in point: rapid urbanization and urban poverty are an issue for all layers of government; however, limited studies assess urban land governance from a multi-stakeholder perspective. This research attempts to fill the gap by studying urban land governance at both national and city level: citizens and government representatives at different levels are sources of information. Two epochs are considered: from 2002-2011 and from 2011-2014. This study focuses specifically on the impact of national urban land lease laws named as proclamation 272/2002, proclamation 721/2011, and their respective regional regulations. This work brought the governance and management discourses into lands in the urbanized world through conceptual, empirical, and policy and actors analyses. The case study results demonstrate that urban land governance is weak due to arrangements at both national, regional and city level. However, improvements are evident after the implementation of the 2011 urban land management policy. Overall, the results in this work reveal that urban land policies that are in line with contemporary conception of governance benefits the practical implementation of governance and management of urban land at the local level.

Keywords: *urban land governance; federal system; urban land management; policy and actor analysis*

2.1 Introduction

Land is central to the political, social and economic situation of any country. It is a major attribute for contemporary developmental and poverty alleviation agendas (Deininger 2003, van der Molen 2013). Both urban and rural livelihoods are linked with the availability of land, how it is valued, how it can be used, and who can use it. Land to people relationships, if eventually recognized through a legal right, facilitate investment confidence, economic developments and sustainable land use (Palmer *et al.* 2009).

Land governance benefits the broader public governance (*c.f.* Burns and Dalrymple (2008) and FAO (2007)) especially in urban areas. This is because contemporary urbanization and associated public governance problems such

as provision of housing, utilities, infrastructures and waste management have urban land dimensions and obviously can be dealt with via the notion of urban land governance. Solving these problems improve the lives of the urban poor and consequently supports the realization of sustainable development in a nation (*c.f.* Williamson *et al.* (2010) and Bennett and Alemie (2014)).

Urban and rural activities have different impacts on land. In contemporary urban contexts, for example, rapid urbanization has both positive and negative impacts (UN-Habitat 2012b). Properly managed urbanization accommodates huge increases in population over relatively small areas. It promotes efficient use of land resources; respects land use plans, facilitates service and infrastructure delivery, and overall contributes positively to land management and development. When poorly managed, it causes informal land acquisition, informal settlements, urban poverty, poor waste management, and ultimately contributes to poor land management and detrimental development. The latter often occurs in developing countries, where urbanization is accompanied by land speculation and indiscriminate conversion of rural land into urban land (UN-Habitat 2010, Boamah 2013). This contributes to informal settlement expansion, especially in the peri-urban areas (UN-Habitat 2012b).

Contemporary discourse argues that sustainable urbanization relies upon well governed urban land, including sound land administration systems: improved governance is seen as key for the realization of prosperous cities (UN-Habitat 2012b) because it facilitates integration between different layers including the central, regional and local activities in the urban development process (*c.f.* Görgens and Denoon-Stevens (2013)). Consequently, the concept of (land) governance drives research and policy agendas (Baumgartner 2012). Contemporary debates focus on comparing the governance approach with government approach (*c.f.* Howlett *et al.* (2010) and Hysing (2009)), and the governance approach with the management approach (*c.f.* Rist *et al.* (2007)). These debates ultimately suggest the need to move towards governance supported approaches in achieving sustainable development.

In this research, the comprehensive and widely accepted definition of land governance from the FIG/World Bank joint conference is used. Thus, land governance refers to “the policies, processes, actors⁴ and institutions by which land, property and natural resources are managed through decisions on access to land, land rights, land use, and land development” (FIG/World Bank 2009). In the context of urban land, it is basically about determining and implementing urban land policies and establishing a strong relationship

⁴ Here, actors refer to representatives of organizations and interest groups in urban land.

between urban people and urban land. Governance deals holistically with the roles and responsibilities of different actors including government, civil society, and the local community. These actors are involved in decision making during land policy and law formulation, and implementation. The outcomes of the policy objectives depend on the quality of decision making and the processes involved. For example, if decision making is transparent, participatory, and accountable, it will lead to improved land governance and benefits citizens including the urban poor.

Different international initiatives related to land governance are undertaking. These include the Land Governance Assessment Framework (LGAF) (World Bank 2010) to assess land governance in different countries context and the Global Land Tool Network (GLTN) (UN-Habitat 2012a) for developing tools that support processes of decision making, implementation, and conflict resolution in land. These initiatives whilst quite comprehensive, previous studies using LGAF in Ethiopia (World Bank 2012), appear to exhibit two shortcomings. First, they take the urban and rural settings as a unified system when in practice they are institutionally separated. Thus, urban and rural land governance should really be considered separately. Second, the LGAF assessment is coarse, at least until recently; it only takes into account the national level, whereas, different literature (e.g., Reimer and Prokopy (Reimer and Prokopy 2014) and Gregersen *et al.* (2004)) reveal a composite of national, state, and local level programs influencing outputs including land governance. This is even more pronounced in federal countries including Ethiopia: each region can have region specific regulations. Other literature (e.g., Coulson and Ferrario (2007) and Zielke and Waibel (2014)) explain the key roles of the local levels in (urban land) governance and overall development. This includes the presence of institutions and local organizations, and the capacity for policy implementation. These altogether imply that urban land governance should be studied separately across the different levels of government administration.

In Ethiopia, urban land is governed and administered by the urban land leasehold law, which has been subjected to improvement three times since its first application in 1993. The first urban land leasehold law (proclamation 80/1993) was endorsed in 1993 (TGE 1993) and the second urban land leasehold law (proclamation 272/2002) was issued in 2002 (FDRE 2002a). These two laws were issued without an underlying urban land policy even though the need for a policy framework was discussed in different works (*c.f.* Rahmato (2009)). Meanwhile, the third urban land leasehold law (proclamation 721/2011) (FDRE 2011a) was issued following the acceptance of the first urban land management policy (FDRE 2011b). This proclamation and its previous version, together with the regional regulations, are the basis for the analysis in this research. The presence of management in the naming

of the 2011 urban land management policy creates a growing concern among policy analysts and researchers that the policy still maintains a management approach, whilst, contemporary literature supports the shift towards a governance philosophy. A clear conceptual understanding between management and governance should thus be provided before undertaking the empirical analysis.

Overall, the aim of this research is to apply contemporary governance and management theories to urban land and test them through the empirical, and policy and actors analyses at multiple levels including national, regional⁵ and several cities in Ethiopia. First, the research methodology is explained. Explanation on theoretical framework on debates regarding governance versus management, and multi-level governance in the context of urban land follows. Results both from the case study evidence, and policy and actors analyses are presented and discussed and lead to the conclusions presented in the final section.

2.2 Research Method

Two research methods are applied (Figure 4). First, a review of scientific literature interrogates the contemporary debates on governance and management in urban land context. In addition, a review of specific land policies and laws of Ethiopia including proclamations 272/2002 and 721/2011 and their respective regional regulations is considered. Second, an exploratory case study (Yin 1994) is conducted to validate the conceptual framework. The case study approach has long been applied in land administration (*c.f.* Ali *et al.* (2014)) and governance analyses (*c.f.* Dekker and Kempen (Dekker and Kempen 2004), Bunar (2011) and Bhuiyan (2010)). It enables the creation of a multi-dimensional view of the phenomena being investigated. It should be noted here that a lack of available data can result in biased and unrealistic results. Especially in (urban land) governance, which encompasses different actors, data cannot always be easily acquired from limited research sources (Batterbury and Fernando 2006), and information from different demographic brackets (e.g. citizens and government) are required.

Three case study cities were based upon: (1) the city having a functional municipality; (2) the city implementing the urban land leasehold laws of proclamation 272/2002 (FDRE 2002b) and proclamation 721/2011 (FDRE 2011a) (as some towns and cities did not implement proclamation 272/2002), (3) the need to include one federal city with comparable area and population size with other selected cities (the capital Addis Ababa is excluded

⁵ Regions and cities apply the same regional regulations, thus they are considered combined.

due to this criterion); and 4) having the cities distributed across the country, and minimized in number. Consequently, the selected cities include Bahir Dar (North West); Dire Dawa (East) and Hawassa (South of the country) (see Figure 2). It should also be noted that each of these cities also experienced rapid urbanization accompanied by fast economic development.

Case studies in the three cities were conducted in two discrete epochs in order to assess the status of changing urban land leasehold laws. In 2011, case study data regarding proclamation 272/2002 was collected. In the same year, however, proclamation 272/2002 was replaced by the currently functioning proclamation 721/2011: the case study data regarding it was collected in 2013.

Specific data collection tools included questionnaires, interviews, and group discussions. Specific actors included were decision makers in the Ministry of Urban Development, Housing and Construction (MUDHCo) and their respective decentralized levels in regions and cities, experts working on urban land in these organizations, urban people and brokers involve in urban land transaction. Different types of questionnaires, interview questions and discussion points were prepared for the multi-level assessment and the different actors. First, for the MUDHCo, the questionnaires aimed to extract clarity regarding the national situation. Second, the questionnaires for the Regional Urban Land Bureaus (the names vary from region to region) were constructed to illicit the governance situation at regional level. The third questionnaires targeted on improving understanding of governance at the city level. Interview questions regarding brokers were also aimed to understand their roles in urban land transactions.

A total of 78 questionnaires composed of semi-structured and open-ended questions were distributed. Table 2 shows the number of questionnaires distributed to different actors.

Table 2 Potential organizations for data collection

<i>Organization</i>	<i>Number of respondents</i>
- MUDHCo	15
- SNNP Regional State Trade, Industry and Urban Development Bureau and Hawassa municipality combined	21
- Amhara Regional State Industry and Urban Development Bureau and Bahir Dar municipality combined	21
- Dire Dawa city Land Development and Management Bureau	21

Land development and management department heads in the MUDHCo, regions and municipalities were interviewed. Two group discussions composed of six ordinary people each from different *Kebeles* were conducted in each case study city. Questions relating to urban land governance problems, the reasons for such problems, and the subsequent impact on the land market were asked. The same questions were used both in 2011 and 2013. The questionnaires are statistically analyzed, whereas, interviews, group discussions and observations are triangulated to reveal common facts.

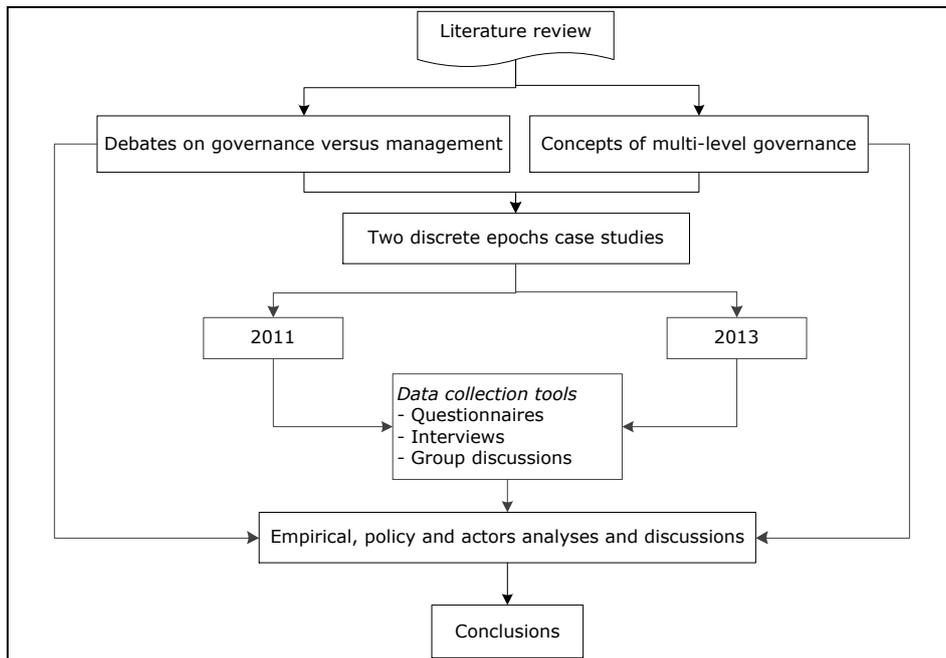


Figure 4 Research design

2.3 A conceptual debates on urban land management and governance

This section discusses the debates on management versus governance and the concept of multi-level governance all in the context of urban land where sustainable urban development is underpinned.

Management versus Governance debate

Management and governance are terms often used both in rural and urban land contexts. Contemporary literature (e.g., Rist *et al.* (2007)) argues the need to move from management focused sustainable development to governance focused sustainable development. Despite the popularity of these

two concepts in scientific and academic literature, a clear distinction between the two remains blurred (Lockwood *et al.* 2010). This also creates confusion during practical operation, including for those working on urban land issues in the case study cities. Thus, a clear conceptual distinction should be drawn to better articulate their relationships and roles during land policy implementations.

Urban land management

The Oxford Dictionary defines management as '*.....the act or process of managing and controlling*' (Oxford Dictionary 2012). Purdon (2003) describe management as an umbrella concept that involves different processes including defining appropriate regulations, procedures and technologies to attempt achieving certain overarching goals. When contextualizing this into land management, it is the processes of defining land policies, laws and appropriate technologies and applying them to resources (e.g. urban land) to put them into good effect (Enemark 2005). In management connotations, only few individuals are responsible in decision making. For example, in Ethiopia governmental offices (e.g. municipalities) have a management team composed of higher officials that are responsible for decision making in different matters. This implies that management favors a top-down approach to problem solving and decision making. This way of decision making can lack a real understanding of the problems, their causes, and alternative ways to deal with them. The roles of different groups of the society and other actors are generally less considered from a management process, although, not necessarily (Purdon 2003). Due to these reasons the management role alone is not sufficient to address broad societal problems (Berger 2003). The popularity of the concept of governance emerges to fill these shortcomings of management (Durant *et al.* 2004).

Urban land governance

Governance is underpinned on institutions, actors including organizations and the processes involved. In governance, the roles of institutions are significant: they are a guide to the interaction between organizations that execute certain defined goals (e.g. a land management). Thus, theories on governance, and consequently urban land governance, find theoretical grounding in institutional economics (North 1990): institutions and organizations at multiple societal levels play a key role in urban land governance. Institutions include formal rules (e.g., policies, and laws) and informal rules (e.g., customs and traditions) (North, 1990). Organizations are also composed of formal and informal actors that have defined roles and responsibilities both during policy formulation and implementation to properly achieve the desired policy goals (North 1990). A continuous interaction between institutions and organizations, for example those responsible for

urban land, always exist and this interaction influences the qualities of urban land governance to be 'bad' or 'good' (*c.f.* Moore (2010)).

'Bad' governance is the situation where policy formulation and implementation fails to achieve its desired goals. Different factors could contribute here. These include weak and fragmented institutional and organizational frameworks being instilled; weak participation of stakeholders being evident; and their existing a lack of qualified and competent experts and officials (*c.f.* Roy (2008)). These combined obviously lead to prevailing of tenure insecurity, weak service delivery, and informal urban land markets. Meanwhile, 'good' governance leads to improvements in social, economic and environmental conditions. In this case the deficits that result bad governance are improved and are workable to achieve the desired policy goals including tenure security, equitable access to land, access to information and formal land markets.

One should note here that when governance is good it leads to achieving improved utilization or management of resources and vice versa. Different literature acknowledges this conception. For example, UNEP (2002) in its report on the global environmental outlook emphasizes the pre-requisite roles of effective governance of environment for its effective management; Lockwood *et al.* (2010) reveal that applying governance principles to natural resource management supports better resource management; Enemark *et al.* (2005) also recognize that land governance is a pillar to achieve the land management paradigm goals.

Overall, urban land management can be benefited from governance concepts. In other words, urban land governance sets conditions for successful urban land management.

Multi-level urban land governance

The previous discussion made clear that institutions and organizations are important in governance and management. However, urban land governance occurs through multi-level stakeholders and levels of governance. This section discusses the concept of multi-level land governance.

Institutions and organizations can be found at different levels of a government structure, especially in a federal political system (e.g., Ethiopia). The roles of each level in a federal government structure has been the focus of contemporary governance debates (Coulson and Ferrario 2007). This is because federal systems exhibit varied, complex and independent both in terms of policy and legal frameworks and actors arrangement and participation (Gregersen *et al.* 2004, Howlett and Newman 2010). In such

systems, a multi-level governance is suggested (*c.f.* Stigt *et al.* (2013), Bottazzi and Dao (2013)). The notion refers to the process of understanding the continuous and dynamic interrelationship that exist between different actors across national, regional and local levels during policy and law formulation and implementation (Olowu 2003). In Ethiopia, for example, the national government formulates national policies and laws based on its political vision. The regional governments have the mandate to formulate region specific regulations. Both the national laws and regional regulations are implemented to solve specific urban land problems at the local levels (see Figure 5): local authorities and citizens including landholders are responsible, for example, to resolve land related disputes and land management at grass root level.

Literature on policy implementation analysis focuses mainly on the national and supra-national levels (Björn 2008). In this regard, LGAF is a good an example. However, urban governance and development are greatly influenced by local actors in a given jurisdiction (*c.f.* Stigt *et al.* (2013), Rakodi (2003) and Kihato *et al.* (2013)): they deal directly with local interests including informalities, disputes, land transactions, and land allocations. Arguably, a multi-level urban land governance framework is argued to fill the gap.

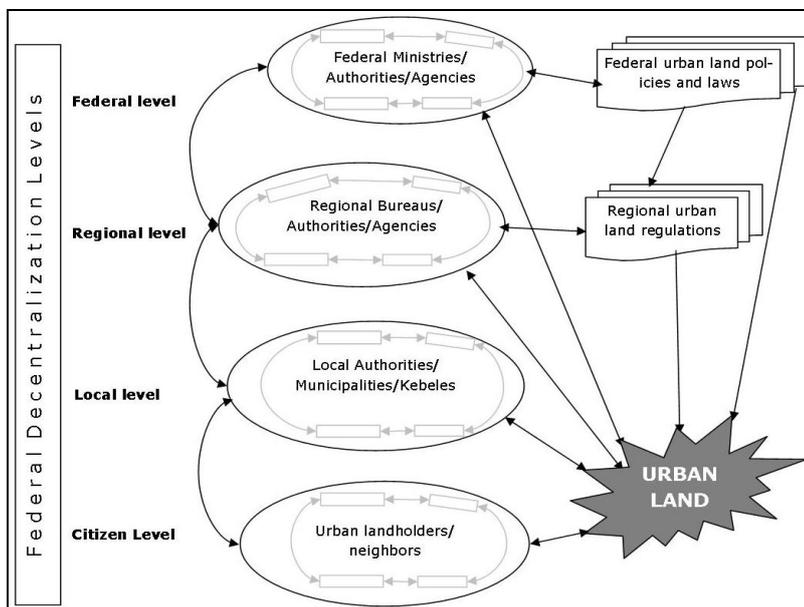


Figure 5 A Schematic representation of multi-level urban land governance in federal systems (extended from Ascliep and Stoll-Kleemann (2013))

Overall, the different theories discussed here are validated through multiple case studies, and policy and actors analysis which is presented next.

2.4 Results and discussions

This section presents and discusses the empirical results and the results of the policy and actors' analysis that are applied in the case study cities.

Empirical results and discussions

As discussed in the methodology section, the empirical analysis in this research is based on the data collected in three case studies. Section 2.3 discussed that the federal system of governing in Ethiopia best suited to conduct a multi-level land governance assessment (Figure 5) at different layers of the government structure including the national, regions and cities.

i. Land governance at the national and case study cities levels

One of the main questions asked to the target respondents in the questionnaires related to the identification of major land governance problems at the national level (for MUDHCo respondents) and city level (for case study region and city respondents) using a Likert scale to assign a value for each problems they identify (Figures 6, 7 and 8).

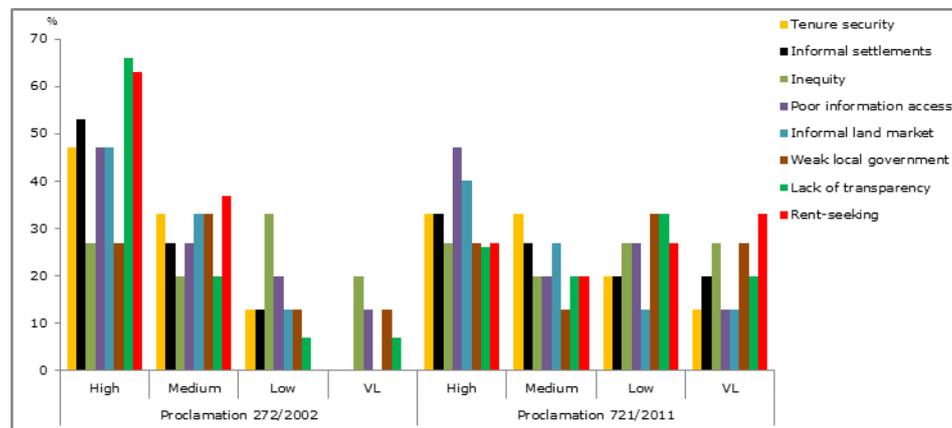


Figure 6 Urban land governance problems at the national level (No. of questionnaires = 15 for MUDHCo)

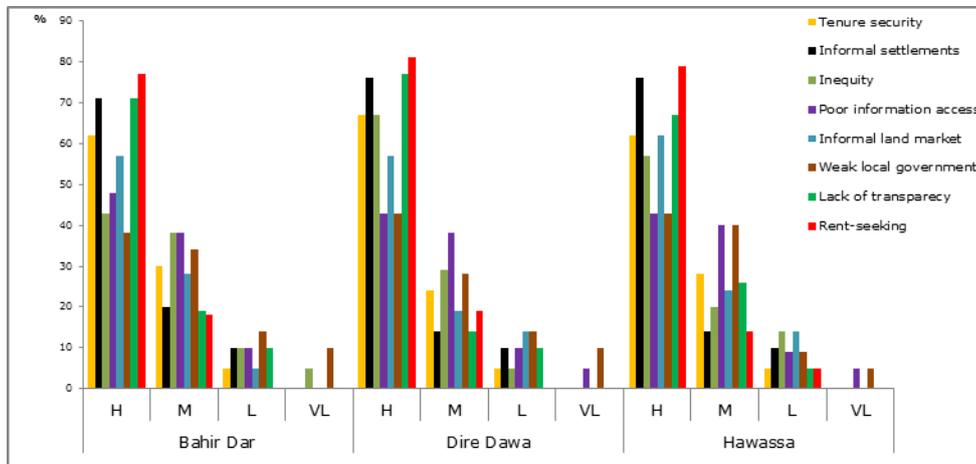


Figure 7 Urban land governance problems at the case study cities during proclamation 272/2002 and respective regional regulations (No. of questionnaires = 21 for each cities). Where: H=high, M=medium, L=low, VL=very low

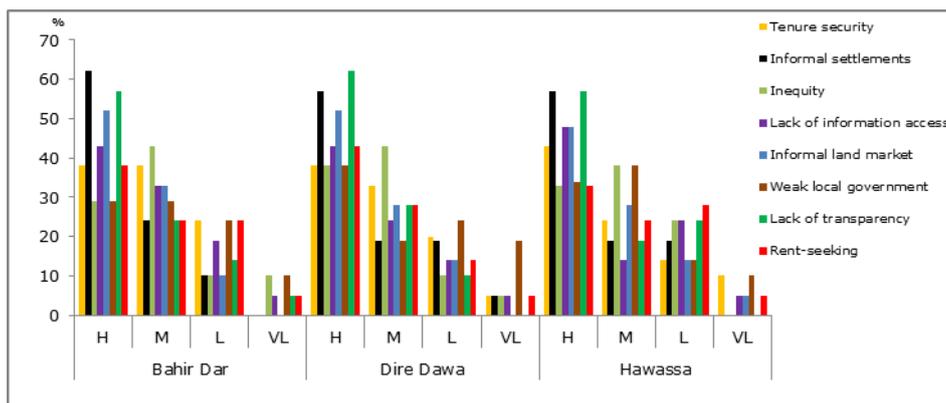


Figure 8 Urban land governance problems in the case study cities during proclamation 721/2011 and respective regional regulations (No. of questionnaires = 15 for each cities)

From the results one can notice that the urban land governance problems both at the national and cities level appear to be similar. These problems include: tenure insecurity, informal settlements, informal land markets, inequity, lack of information access, weak local government capacity, lack of transparency and rent-seeking. These problems are discussed in section 2.3 as indicators of 'bad' land governance. Based on interviews and group discussions each one of these will be further detailed.

Tenure insecurity – tenure insecurity is a problem specifically in the case study cities and in Ethiopia in general from two aspects. First, the slums and informal settlements that populate large areas of the case study cities are

clear indications of lack of tenure security. Second, according to the respondents, a legal landholder in the case study cities can be expropriated anytime if the plot is required for government purposes. In this case, a replacement plot, but mostly less in size, is provided in the city outskirts, which are less developed with minimal infrastructure, facilities and transportation: people expropriated from their original place are exposed to additional costs. It also appears the compensation payments do not consider current land values and geographical locations. In this regard, the ease at which land can be expropriated appears to promote the perspective that tenure is not well secured.

Informal settlements – the combined results suggest informal settlements are increasing in the case study cities. For example in Bahir Dar, informal settlements are expanding in all directions of the city periphery i.e. Zenzelima informal settlement to the East, Wuramit informal settlement to the North West and Sebatamit informal settlement to the South East. The respondents mentioned that high rental price of houses, less accessibility of government houses, and market inflation are some of the causes. However, experts from MUDHCo claim informal settlement prevalence is decreasing after the introduction of the 2011 urban land policy. This result is in agreement with different studies in Africa (c.f. Brown-Luthango (2010) and Mosha (2013)) that reveal access to urban land for low income people becomes a critical issue in the contemporary urbanization in the region.

Informal land markets – the results demonstrate that informality in urban landholdings support the informal land market. Traditional institutions (e.g., *Ikub*⁶, *Idir*⁷ and *Arata abedari*⁸) are a source of both information and finance. They are easily accessible and less bureaucratic – legal documents and formal procedures are not required making them preferable by the urban poor for financial support during informal activity. Apart from this, however, the informal institutions in Bahir Dar city also play a key role in resolving disputes (Adam 2014). Brokers also play a significant role both in the formal and informal land markets. They sometimes act as a bridge between the people and the experts in the government offices, for example, to deal with corrupt activities during bidding and land delivery processes especially before the 2011 urban land management policy.

Inequity – here two types of inequity in urban land are identified: inequity between wealth status and inequity due to special relations. Regarding the

⁶ Refers a rotating fund operated by informal saving association of groups, neighbors and peers contributing fixed amount of money periodically

⁷ Refers a minimum social security in times of emergency such as funeral by collecting funds from members

⁸ Refers individuals that borrow money and collect interests in an informal way

first type, land is accessed depending on the wealth or capital status. A case in Bahir Dar city is a good example here. In Bahir Dar city an association formed by urban low income people and a private company called Dashen Bank bid for the same plot in the city centre. The auction price proposed by the association was much higher than the bank's proposal. Regardless of bid difference, the plot is awarded to Dashen Bank: the municipality officials argue that the associations established by the urban low income have limited financial capacity to potentially use and invest in the land. The second source of inequity is the officials' special relations with the people. This may include tribal, origin or relative based. For instance, ethnic based inequity is mentioned in Dire Dawa. In this city, the mayor position shifts between people of Oromo and Somali ethnic background every two years. In this case, it appears that when a person from one ethnic is in power, s/he favors their own ethnic group.

Lack of information access – this is evident from two aspects. The first relates to access to land use and cadastral information. Alemie *et al.* (2014) mention that the cadastres are poor and incomplete and land use plans are obsolete in the case study cities. These imply that decision making on different aspects of urban land is not based on appropriate and reliable information. The second problem is the lack of information access during bidding. Important information to bid and fix the auction price, full information of the plot including location, size, lease time, and initial lease prices are essential. However, according to the respondents in the group discussions, it frequently happens that such information may not be equally provided to all who want.

Weak local government capacity – every respondent both at the national and local levels agreed on this problem. As observed during the visit of the case study municipalities, there is shortage of trained human resources and materials (e.g., computers and offices). These altogether hinders the capacity of the municipality, for example, to execute programs aimed at controlling informal settlements. This problem appears a common problem in cities of most developing countries (*c.f.* Nandi and Gamkhar (2013)). Currently, the local governments in the case study cities establish '*Afrash gibrehail*⁹' to control informal settlements. They are responsible for demolishing newly constructed informal houses and controlling further construction. Apparently, demolition becomes a source of disputes as observed during the case study cities visit.

Lack of transparency – transparency is crucial in land governance: other land governance problems such as rent-seeking, societal participation and information access are linked. Literature (e.g., Hordijk and Baud (2006))

⁹ Literally means demolishing team comprising of police and municipality staffs

shows that improving societal participation especially at the local level leads to improved transparency, which also helps to improve rent-seeking. The results show that transparency in urban land related decision making is another problem in the case study cities. After the implementation of proclamation 721/2011, however, the problem of transparency is slightly improved.

Rent-seeking – in the urban land management policy, rent-seeking related with urban land is labelled as the major problem in urban areas of Ethiopia (FDRE 2011b). In the study cities, rent-seeking activities involve through the strategic chain among the people, government officials and the brokers. The results reveal that there is a slight improvement after the implementation of proclamation 721/2011. This is because transparency is slightly improving, especially in rent-seeking hotspot areas identified by the government including auction and land delivery processes.

Overall, the urban land governance problems both at cities and national levels imply that there is a weak institutional and organizational performance (see also section 3). Different scholars such as Rahmato (2009) argue that the lack of a federal institution at the ministerial level also contributes to the problem. However, the results in Figures 6, 7 and 8 indicate slight improvements of the problems both at the national and cities level after proclamation 721/2011. For example, the high and medium responses for tenure insecurity problems are slightly decreased, whereas, low and very low responses are increased. Another interesting results appeared in this research is that the similarity of land governance problems among the case study cities. This seems in contradiction with the theoretical discussion provided in section 2.3 where in a federal country these results are expected to be different. This results here, however, are in agreement with the urban profile study conducted by UN-Habitat in three different urban areas including Addis Ababa, Ambo and Dire Dawa (*c.f.* UN-Habitat (2008a, 2008b, 2008c): almost similar institutional and organizational problems are exhibited in the three urban profiles.

The next section presents policy and actors analysis in the three case study cities. It provides whether the policies and actors in the case study cities play a role in the land governance problems in the case study cities discussed earlier.

ii. Policy and actor analysis

The theoretical framework provided in section 2.3 shows that policy and legal frameworks and actors are foundational in urban land governance theory and its operation on the ground. Especially, in a federal governing system such as Ethiopia, policy and actors analysis at the different levels is useful to enhance

understanding of urban land governance. Thus, this section presents and discusses two issues: comparison of regional regulations and actors, and proclamation 721/2011 in the lens of urban land governance conception.

Comparison of regional regulations and actors

In this comparison, the currently functioning urban land leasehold and informal settlements formalization regulations in the three case study cities are considered. Table 3 shows the major differences that exist in the regional regulations that are implemented in the case study cities.

Table 3 Comparison of regional regulations contents, actors and processes

Major differences	Case study cities		
	Bahir Dar	Dire Dawa	Hawassa
Actors in urban land	Formal (Industry and Urban Development Bureau, Bahir Dar city municipality, <i>Kebeles</i>), brokers and traditional financial institutions e.g., <i>Ikub, Idir</i> and <i>Arata abedary</i> .	Formal (Land Management and Development Bureau, Dire Daw city municipality, <i>Kebeles</i>), brokers and traditional financial institutions e.g., <i>Ikub, Idir</i> and <i>Arata abedary</i> .	Formal (Trade, Industry and Urban Development Bureau, Hawassa city municipality, <i>Kebeles</i>), brokers and traditional financial institutions e.g., <i>Ikub, Idir</i> and <i>Arata abedary</i> .
Year of informal settlements eligible for formalization	The formalization regulation was not yet endorsed during the study time: thus the eligible year is not known.	Two formalization regulations: in 2007 and 2013. The 2013 regulation mention that informal settlements before 2012 are eligible.	The formalization law is issued in 2012 and informal settlements before 2009 are eligible.
Formalization regulation	The formalization regulation is not included within the issued regional urban land leasehold regulation.	It is proclaimed separately from the city administration urban land leasehold regulation. Detail of it is provided.	Proclaimed together with the regional urban land leasehold regulation. Only described in one article.
The regional urban land leasehold regulations on issues of informal settlements and old possessions	The regulation gives clear distinction between old possessions and informal settlements – they are discussed in separate articles in the regulation.	The regulation does not provide clear distinction between old possessions and informal settlements - informal settlements are described within old possessions article.	The regulation does not provide a clear distinction between old possessions and informal settlements - informal settlements are described within old possessions article.

In the different regions, the names of responsible government organizations for urban land issues are slightly different. For example, in Dire Dawa city, urban land issues are administered by Urban Land Management and Development Bureau. Whereas, in Amhara, where Bahir Dar is the capital, the urban land issue is found within the Industry and Urban Development Bureau, and in SNNP regions, where Hawassa is the capital, urban land issue is merged with the Trade, Industry and Urban Development Bureau. Urban land issues in Amhara and SNNP are found at Core¹⁰ Process level within the bureau, whereas, in Dire Dawa it is at bureau level. Meanwhile merging land issues with other independent sectors, such as industry and trade, could negatively affect decision making and resource allocation. The respondents

¹⁰ A level higher than department and lower than bureau level

were asked to mention the time required to get a decision for a specific activity. The results show that in Dire Dawa, decision making is slightly faster as compared with the other two cities.

The policy and actors analysis summarized results in Table 4 reveal that one major difference in the case study regulations is the difference on the year of informal settlements to be eligible for formalization. In Hawassa city, informal settlements before 2009 are eligible for formalization, whereas, in Dire Dawa the second regulation issued in 2013 considers informal settlements before 2012 to be illegible. This creates differences in governance between the two cities. However, in Bahir Dar city, the formalization regulation was under preparation during the case study and thus the year of eligibility is not known. Another point is that the first formalization regulation in Dire Dawa was issued before proclamation 721/2011; meanwhile, issues of formalization are not given attention in proclamations 272/2002. This indicates that regions can use their constitutional right to issue a regulation when required though not always the case (discussed later).

Another difference is on the content of the regulations. For example, the urban land lease regulation of SNNP issued in 2012 also includes the issues of informal settlements formalization: there is no separate regulation for formalization. Whereas, in the Amhara region and Dire Dawa city administration, the urban land lease regulation of 2012 does not contain issues of informal settlements formalization, in Dire Dawa city it is proclaimed in a separate regulation. In Amhara it is decided to have a separate regulation which was under preparation during the case study. Merging formalization issue with the broad urban land lease issues in one regulation as presented in SNNP could create a lack of detailed description of important governance issues such as how to deal with old possessions from informal settlements is not explained in the SNNP regulation. This creates a lack of understanding between the two main contemporary governance problems in Hawassa city and will deter meaningful decision making during its implementation.

Overall, the comparison made here reveal the differences among the case study regulations and with the national proclamation are minor and apparently play an inconsequential role to significantly change the urban land governance between the different levels and among the case study cities. Except those related with the formalization and informal settlements, the case study regulations, however, appear to be almost a replica of the national proclamations. This appeared to be the leading reason for the similarity of land governance problems revealed in Figures 6, 7 and 8. This could be due to the fact that there is interference of the national government in different stages of the regional regulations preparation. This was well

demonstrated during the issuance of the National Real Property Registration proclamation in 2014, which took more than two years to get accepted by the parliament. This was because this proclamation shifts the power of the regions, provided by the constitution, back to the national government, thus enabling it to decide on types of cadastres and cadastral standards, amongst other issues.

Proclamation 721/2011 in the lens of urban land governance concepts

As discussed in section 2.1, the 2011 urban land management policy creates a concern due to the fact that management appears in the policy naming. This analysis is undertaken to assess the policy document and its initial implementation in the lens of urban land governance concepts (Table 4).

Table 4 Proclamation 721/2011 in the lens of urban land governance

Criteria	Proclamation 721/2011
Policy dimension	<ul style="list-style-type: none"> - Ensure rapid, equitable and sustainable urban development through improving the land governance and land information system - Realize common interests and development of the people, - Create a transparent and accountable urban land lease tender and land delivery systems by preventing corrupted practices and abuses, - Make tender to reflect the prevailing value of the land,
Policy instruments	<ul style="list-style-type: none"> - The urban land leasehold proclamation and its regional regulations, - Regional governments informal settlement formalization regulations, - Urban Landholding Registration proclamation and its regional regulations, - The cadastral standard regulation and its regional regulations, - Capacity building through short and long term.
Process	<ul style="list-style-type: none"> - The policy formulation process lacked transparency and participation, there was no awareness creation activity to the public, the public heard its issuance from the media - Public hearings were conducted after its issuance, which did not have any relevance. - Current implementation activities are done in an integrated way among the MUDH, regional bureaus, municipalities, <i>Kebeles</i>, Mapping Agency and Information Security Agency (INSA), it is early to give full comment though. - Roles of each actor are identified, e.g., Mapping Agency is responsible for establishing ground control points, INSA for orthophoto production, and so on.
Actors	<ul style="list-style-type: none"> - Organizational reforms and human resources get attention at the policy level - Efforts especially organizational reforms (Real Property Registration Agency, Integrated Land Information System project office, Land Management and Development Bureau) are being made at the national (MUDHCo) level, but at the local level the organizational reform process are sluggish. - Human, material, and financial resources remain chronic issues both at the national and local levels

The aim of the urban land management policy, as mentioned in the document, is to create a transparent and accountable lease tender and land delivery system to make tenders in accordance with the prevailing land values, and for urban development to be guided by land use plans (FDRE

2011b). The policy also mentions that these were lacking in the previous proclamation. Overall, improving urban land governance with the support of a land information system underpins the policy objectives i.e. to achieve improved urban land management.

The preliminary results subsequent to implementation demonstrate that transparency is improving, organizational reforms are given attention, the roles and responsibilities of actors are elicited, and integrated operations are visible for example in the legal cadastre development (see also Alemie *et al.* (2015a). In addition, different platforms for improving urban land governance were observed in the case study cities during the case studies visit in 2011 and 2013. These include: front offices (to provide the necessary information to clients such as what criteria and documents must be fulfilled before further processes), complaint hearing offices (to listen to complaints and dissatisfaction from clients and to deal with the causes of complaints together with the expert in charge), and Ombudsman and Anticorruption commissions (both exist at national and regional levels and are responsible to deal with unnecessarily right violations and corruption respectively). These platforms are good initiatives for creating efficient and transparent service delivery. However, there are still critics going on related to the limited power of these platforms in altering decisions made by higher officials.

Meanwhile, the combined results also show that some shortcomings are visible in the initial implementation of proclamation 721/2011. These are especially linked with due to the fact that the policy came into effect without a pre-prepared implementation strategy: issues of organizational reforms, human resources, and facilities were not dealt with side by side and continued to be still a problem in the case study cities. Arguably, this deters or slows down the execution of planned activities in the urban land policy.

Some plans in the urban land management policy seem very ambitious. For example, proclamation 721/2011 plans to transfer all old possessions and informal settlements into a lease system in four years. At the time of writing, two years have passed since policy implementation and some activities are still only in the preparation stage. For example, the Amhara region has not issued the formalization regulation to deal issues old possession and informal settlements in the region, which cover large areas in urban areas of the region. Proclamation 721/2011 also aims to create complete harmonization of land development with land use planning. However, the reality shows that the land use plan of most cities in Ethiopia is obsolete (Tekle 2011) and current urban developments, for example in Bahir Dar city, are beyond the capacity of the land use plan (Alemie *et al.* 2014). This raises the question whether the urban development should wait until the land use plan is ready? In both cases it continues to be a land governance problem. Combinations of

reactive and proactive measures need to be taken until complete harmonization is possible.

Respondents also mentioned that the policy formulation process lacked transparency and participation: there was no awareness creation activity for the public. It was a surprise for the public when its issuance was announced in the media. It was perceived that following the resistance from the public, public hearings were only conducted to calm the situation, rather than take meaningful input.

Overall, the urban land management policy and its proclamation 721/2011 in their theoretical level encompass parts of the main principles of governance. Despite the term 'management' included in the 2011 policy, the content of the policy and its enforcement proclamation shows a sort of agreement with the theoretical conception of urban land governance discussed in section 3 and are pertinent to achieve urban land management. In addition, some early implementations such as slight improvement of transparency and availability of platforms such as front offices and complaint hearing offices are good to improve service delivery if they are more empowered. The inefficiency of attempting the different ambitious plans, non-transparent and non-participatory nature of the urban land management policy formulation, and the low societal participation, however, may have an impact on the urban land governance, and thereby urban land management in Ethiopia in general.

2.5 Conclusions

This work brought the governance and management discourses into urban land through conceptual, empirical, and policy and actors analyses. This shades light on the growing perception that management is blurredly perceived as ill-defined to solve problems as illustrated in the different works that argue on the need to move from 'government to governance' and from 'management to governance'. However, here it is shown that management still play a pivotal role but need to be complemented with governance philosophy to make decision making to also include a bottom-up approach in meeting societal needs especially at the local level where the epicentre of urban development is found.

This work also revealed that governance focused urban land policy framework benefits attempting governance and management of urban land. This was demonstrated in the combined results presented in section 4 that during proclamation 272/2002 implementation, which was issued without underlying policy objectives, urban land governance were not good and consequently urban land management. Whereas, after the 2011 urban land management

policy which anchored governance issues at the centre to achieve urban land management, the very early stage of empirical analysis shows improvements in transparency and rent seeking as compared to the result of previous proclamation. The results in this research can be a good lesson for other African countries where in most cases land related laws are proclaimed without an underlying policy frameworks (*c.f.* AUC (2010)).

The case study results revealed that similar land governance problems are evident both at the national and cities levels: the case study regulations are almost a replica of the national laws which is not often the case in federated countries. The date of issuance, and the year of eligibility for informal settlement formalization, appear to be the only real differences between case study city's regulations and may create some governance differences, especially in the long run. These detail local level policy and actor analysis could not be captured in the so far existing land governance frameworks such as the LGAF, which only considers a unified and national level situations into context.

The policy and actors analysis also revealed that the content of the 2011 urban land management policy encompasses parts of governance principles, and its implementation, at least initially, showed some improvements with regards to transparency and reduced rent-seeking. Further, if future implementation of the policy is supported by a strong participation of citizens and non-state actors, the overarching urban land management policy goals can be practical.

Chapter 3

Evolving urban cadastres in Ethiopia: the impacts on urban land governance*

* This chapter is based on the ISI articles published on:
Alemie, B. K., Bennett, R. & Zevenbergen, J. (2015). Evolving urban cadastres in Ethiopia: the impacts on urban land governance. *Land Use Policy*, 42, 695–705.

Abstract

Literature on land governance suggest cadastres play an important role in delivering equal land access, adequate tenure security, sustainable land use, accountability of actors, and transparency. Accordingly, land governance is increasingly examined through the domain of cadastres, or more broadly land administration. In Ethiopia, urban cadastres are yet to be studied through this lens. This paper examines the evolution of Ethiopia's urban cadastres in support of urban land governance across three governing regimes: the Imperial, the Military, and the Ethiopian People Republic Democratic Front (EPRDF) regimes. Three data collection techniques are applied: literature reviews is used to understand the nature and role of Ethiopia's urban cadastres during the Imperial and Military regimes, whilst secondary data and primary observational analysis are used to assess the early and contemporary parts of EPRDF regime respectively. The recognized cadastral 'toolbox' approach informs the analysis: the comparative role of cadastres in delivering urban land governance across the three study epochs is assessed. The study reveals that during the Imperial and Military regimes, policies and legal frameworks afforded less consideration to important aspects of urban land governance. Meanwhile, results from the early EPRDF regime suggest that whilst urban land governance discourse was popular, the operational role of the urban cadastre in improving urban land governance was limited: the basic requirements needed for the operation of urban cadastres, including political steadiness, policy and legal clarity, technical capacity, sound organizational design and societal support were missing. The contemporary situation shows improvement, however, each 'toolbox' element has improvement opportunities.

Keywords: *cadastral toolbox; Ethiopia; urban cadastre; urban land governance*

3.1 Introduction

Cadastres are argued to support good governance, and specifically good land governance (Enemark 2010): records of land parcel geometry, land rights, restrictions, and responsibilities, and the parties involved can be used to enhance institutions and societal coordination. Cadastres can help to streamline land transactions, fast track land dispute resolution, enable credit access, enforce land use controls, and ensure fair land taxation (Henssen 2010b). Contemporary cadastres are considered instrumental for implementation of land policies that can achieve sustainable development (Williamson *et al*, 2010). As a result, governments and international donor organizations allocate large financial resources to the establishment, maintenance and renewal of cadastral systems in developing contexts (*c.f.* Deininger, (2003)).

The link between cadastres and land governance results in the former being increasingly used to study or assess the latter. Enemark (2010) examines the evolving concept of land management and recognizes a shift in discourse from technical aspects of cadastres to a broader discussion on the role cadastres play in land governance. Numerous further studies are identifiable. Roberge *et al.* (2011) empirically examine local governance through the analysis of forest certification performances: the studied certification process fosters relationships between the state, civil society, and business actors. Zevenbergen *et al.* (2013) discuss that a land recordation system comprising of land registration and cadastral systems would contribute to pro-poor land administration and land governance. Koontza and Newig (2014) analyze participation in governance activities in the implementation of an EU Water Framework Directive: information transmission is limited across levels during planning and implementation. Haldrup and Stubkjær (2013) discuss the potential of indicators on cadastre and land registration to monitor land administration and land governance. These studies demonstrate that urban land governance can be evaluated, albeit with challenges, from the performance of urban cadastres or vice versa.

Regarding Ethiopia's urban cadastres, such studies are yet to be undertaken. Indeed, scant literature on the nature, design, use, and maintenance of Ethiopian cadastres is available generally. Since the 1990s, the government of Ethiopia worked on various activities to modernize the existing land administration systems both in urban and rural contexts. Especially in urban contexts, the government's effort ranges from issuing various urban land leasehold laws to consecutive attempts of realizing a functional urban cadastral system. The prime aim of these efforts has been to improve service delivery and land governance in cities of the country. A challenge specific to Ethiopia is that independent policy, law and organizational frameworks govern urban and rural land. This enables urban cadastres and urban land governance to be different from the rural cadastre and rural land governance.

This paper focuses on urban cadastres and urban land governance. In this context, the cadastre is defined broadly as "an official record of information about land parcels, including details of their bounds, tenure, use and value" (Williamson *et al.* 2010). Meanwhile, in this paper land registration is considered a subset of 'cadastre' and is defined "a process of recording land ownership, rights to land, and obligations of land owners and users" (van der Molen 2011). Therefore, 'cadastre' is considered as a system that comprises the cadastral map and land registration process, and for that matter, it is also considered synonymous with the term land administration system. A similar approach is evident in Bogaerts and Zevenbergen (2001) and Silva (2005). With regards to the concepts of governance, this paper uses the definition provided by FIG/World Bank (2009) and it refers to "the policies, processes,

actors¹¹ and institutions by which land, property and natural resources are managed through decisions on access to land, land rights, land use, and land development”.

Meanwhile, numerous studies are conducted more generally on land policies and land tenure systems of Ethiopia across the three governing regimes: the Imperial regime, Military regime and current Ethiopian People Republic Democratic Front (EPRDF) (*c.f.* Crewett *et al.* (2008), Rahmato (2009), Nega *et al.* (2003)). Other research focuses specifically on rural land, including the certification process, land reform, and cadastral developments. (*c.f.* Holden *et al.* (2011), Deininger *et al.* (2008), Abegaz (2004), Palm (2010), Abebe (2006), Adenew and Abdi (Adenew and Abdi 2005), and Belay *et al.* (2013)). However, perhaps due to the fact that only one fifth of the population is based in urban areas, research focusing specifically on Ethiopia’s urban context and its urban cadastres is limited: the rural context and livelihoods remain the focus of many initiatives including the World Bank (USAID 2011). At any rate, a range of grey literature describing works in progress for the urban context are available (*c.f.* Zein *et al.* (2013), Tadesse (2006) and Aneley (2006)). Urban cadastres in Ethiopia demand more research attention: the evolution and contemporary status of these systems, and the ways in which they support (or not) urban land governance requires articulation.

To this end, the paper examines the evolutionary role of Ethiopian urban cadastres in supporting urban land governance. First, background concepts and theories on contemporary cadastres and land governance are provided. This leads to an overview of the research methodology and analytical tools used in this study. Subsequently, results from the applied analytical framework on the three regimes are presented. The implications for urban land governance are discussed. Finally, the conclusions and lessons in terms of interventions and research for urban cadastres in Ethiopia are provided.

3.2 A background to urban land, cadastres and land governance

Urban lands in most parts of the world face unprecedented stresses: ongoing urbanization along with the increase in population create huge demands on urban land (UN-Habitat 2012b) for different uses including residential, greenery, infrastructure, business, infrastructure, and social services. Especially in the urban areas of developing countries (e.g. Ethiopia), there is a problem of identifying who holds what land, which lands are private, which are government, and the various land use types. These problems hamper the

¹¹ Here, actors refer to representatives of organizations and interest groups in urban land.

efficiency of service delivery and urban planning: an integrated approach to decision making that considers cadastre and governance is suggested.

Modern *cadastres* are argued to have evolved from those found in ancient Mesopotamia into fiscal, legal, and multipurpose cadastres (Williamson *et al.* 2010): fiscal cadastres support land valuation and taxation; legal cadastres support security of land rights; and multipurpose cadastres support land use planning and management functions in addition to its fiscal or legal functions. Contemporary literature argues these cadastres are one prerequisite for economic, social, and environmental development under any form of land tenure regime (Deininger and Feder 2009, Deininger 2003). For example in Ethiopia, though land is owned by the state, private uses of urban land, along with the bundle of rights, is provided for a defined time through a lease system. Recording the boundaries of the plot, its value, and its uses are useful for both the leaseholder and the government. For the leaseholder it can support increased confidence that eviction will not occur. For the government it helps in the monitoring of land use and the levying of appropriate land taxation.

Meanwhile, the cadastre's role in dealing with contemporary and future challenges such as urbanization and governance is significant (Bennett *et al.* 2010), and the role has changed over time (Grecea *et al.* 2012). Theory and works that have developed to support this argument include: the Multipurpose Cadastre (McLaughlin 1975), the Bathurst Declaration on land administration (UN-FIG 1999), Cadastre 2014 (Kaufmann and Steudler 1998), and the Land Management Paradigm (Enemark 2005). Grecea *et al.* (2012) explain that the concepts in these theories add complications to system design and administration. This becomes a challenge especially for developing countries including Ethiopia where existing cadastres are often incomplete, or even decaying (Gelder 2010, Kombe and Kreibich 2000). They may have a historical lack of cadastral experience (Fekade 2000), lack of coherent institutional frameworks (Shabane *et al.* 2011, de Vries *et al.* 2014), may be poorly administered (Roy 2005, Larsson 1991), and exhibit a shortage of financial resources (Konecny 2009). These limitations impede the improvement of existing cadastres or the introduction of modern cadastral theories. In this case, cadastres may hinder meaningful decision-making and governance, although it is usually argued that any cadastre is better than no cadastre in supporting decision making and governance.

Governance as a contemporary academic concept emerged in late 1980s (Kemp *et al.* 2005). The impacts of urbanization, poverty, climate change, amongst others, forced governments and international organizations to change their approach (Palmer *et al.* 2009): the existing conventional practice of government dominated, highly centralized and top-down

management approaches was not responsive enough (Kombe and Kreibich 2000, Camarinha-Matos and Afsarmanesh 2004). Focusing on a single actor alone (e.g., only government) was not realistic: the required actors, resources, and knowledge needed to solve the complex problems were diverse and needed to be incorporated into interventions (Lockwood *et al.* 2010, Ostrom 2009). In other words, by involving a wide range of interdependent actors in decision making, including formulation and implementation of policies, greater interaction among actors could be achieved and would lead to a shared, transparent, equitable, accountable and sustainable problem solving approach (Nesheim *et al.* 2014). Such a system enables bottom-up decision making: pivotal for identifying the root causes of many problems and ensuring decisions equally benefits more citizens and their livelihoods. In the complex case of densely populated urban land and its multi-uses, the concept is crucial.

The *relationship between urban cadastres and urban land governance is information*: land governance requires reliable land information. Enemark's (2010) paper on 'From cadastre to land governance' identifies the crucial role information plays in decision-making and problem solving relating to land. In line with this, contemporary literature (e.g., Williamson *et al.*, (2010); Bennett *et al.* (2012), Zevenbergen *et al.* (2013)) explain the roles of cadastral information in facilitating service delivery, land market functionality, and improved land use. In addition, establishing land rights and tenure security via cadastres and land registration systems can support a bottom-up development processes (Rudi *et al.* 2014). Cadastres can support contemporary governance activities and improved service delivery between government to citizens on challenges including climate change, rapid urbanization, poverty reduction, and food security. Where cadastres and contemporary cadastral concepts are not properly applied or implemented, the contribution of cadastres for good urban land governance would be limited. Thus, a re-examination of the cadastres can be undertaken from the perspective of urban land governance. The initiative is already underway through widespread applications of the World Bank's Land Governance Assessment Framework (LGAF) (Deininger *et al.* 2012). We continue the work here, with a specific focus on cadastre in a decentralized urban context. The approach will aid in understanding the existing cadastres with respect to the urban developmental agendas of communities, government, and society more generally.

3.3 Research method

Primarily, the research underpinning the paper is observational and qualitative in nature: a case study (Yin 1994) is conducted in different cities of Ethiopia. The Federal Democratic Republic of Ethiopia (FDRE) is an

agrarian country: only 17% of the population lives in urban areas. The country is constituted of nine regional states and the two federal cities of Addis Ababa and Dire Dawa. Three political epochs are predominant in recent Ethiopian history. Different literature (e.g. Crewett *et al.* (2008)) use these three epochs to characterize the land tenure systems and land policy in Ethiopia. These include the Imperial Regime (pre-1974), the Military Regime (from 1974-1991) and the current EPRDF Regime (post-1991). As mentioned, this framework is used in this research with a little modification of the EPRDF regime, which will be studied as 'early' EPRDF regime and 'contemporary' EPRDF regime.

The cadastral 'toolbox' approach (Williamson 2001) acted as the analytical framework. It was used to examine the urban cadastres of the case study cities and their impacts on urban land governance across the three regimes. A 'toolbox' is an epistemological tool that is applied to derive a multidimensional view and understanding of processes or system functions in an explicit and systematic framework (O'Rourke and Crowley 2013). This implies that a 'toolbox' is pivotal to examine existing situations, along with the weaknesses and strengths. In this regard, it supports a systems or process reengineering (Stedler *et al.* 2004).

The 'toolbox' approach has been applied in different fields of study including bioscience (Eigenbrode *et al.* 2007), interdisciplinary researches (O'Rourke and Crowley 2013, Winowiecki *et al.* 2011) and land administration (Williamson 2001, Bennett *et al.* 2008, Stedler *et al.* 2004). In land administration, it is useful in examining the land administration systems in a jurisdiction (Williamson 2001): it covers the whole spectrum of land administration components (Stedler *et al.* 2004) including policy, institutional and technical aspects. According to Wallace (2009), the 'toolbox' approach can also be utilized for examining the institutionalization of good governance standards. Thus, this approach supports the underlying objective of the research.

Personal experiences on urban cadastre of Ethiopia and literature sources (e.g. Williamson (2001), Bennett *et al.* (2008), Wallace (Wallace 2009), Williamson *et al.* (2010)) and World Bank LGAF indicators (Deininger *et al.* 2012) were used to identify the relevant 'toolbox' elements for the Ethiopian context. Thus, a cadastral 'toolbox' comprising of political, policy and legal, technical, organizational, and societal elements was developed: these 'toolbox' elements are also relevant to land governance analysis:

- *Political* – this element suggests examination of the political decisions regarding the formulation and implementation of appropriate cadastral laws and rules, and financial matters relating to the development of

cadastres. In addition, it suggests examining the level of political commitment for leading, supporting and administering the cadastre.

- *Policy and legal* – this element suggests examination of the status of policies and rules that deal with cadastral standards, data sharing, data access, and so on.
- *Technical* – this element focuses on techniques and technologies of data collection, cadastral system design, and accuracy of data, the type of data models, an updating strategy, and the type of datum used during the cadastral survey.
- *Organizational* – this element examines the institutional arrangements in terms of ministries, authorities, and agencies that deal with the cadastre. It focuses particularly on the level of decentralization and integration between organizational actors. It also includes analysis of capacity building aspects.
- *Societal* – this element examines the cadastral systems from the perspective of societal needs including the determination of the type of cadastral systems needed, and whether the selected design is achieving its underlying goal. Concepts including levels of participation and transparency are also important here.

For the first two epochs, the Imperial and Military regime, data was collected and analyzed using literature reviews. The final epoch acquired new empirical data on the EPRDF regime. Furthermore, time and resource limitations meant the study was confined to several cities. Selection of cities was based upon: 1) the city having a functional municipality; 2) the city implementing the urban land leasehold laws of proclamation 272/2002 (FDRE 2002a) and proclamation 721/2011 (FDRE 2011a) (as some towns and cities did not implement the 2002 land leasehold proclamation); 3) the requirement to include one federal city with comparable area and population size with other selected cities (the capital Addis Ababa is excluded due to this criterion); and 4) having the cities distributed across the country, and minimized in number. The selected cities were Bahir Dar (North West), Dire Dawa (East) and Hawassa (South of the country) (see Figure 2). It should be noted that each of these cities also experienced rapid urbanization accompanied by fast economic development over the previous two decades.

For the third epoch, particularly for the early EPRDF regime, the empirical data was collected as follows. A total of 78 questionnaires were distributed: 15 to the Ministry of Urban Development, Housing and Construction (MUDHCo), 21 to the Southern Nations, Nationalities and People (SNNP) Regional State Trade, Industry and Urban Development Bureau and Hawassa Municipality, 21 to the Amhara Regional State Industry and Urban Development Bureau and Bahir Dar Municipality, and 21 to the Dire Dawa city Administration Land Development and Management Bureau. The Heads

of Land Management and Development, and Cadastre (Real Property Registration) were interviewed in each regional bureaus and municipalities. Two group discussions composed of six people from different *Kebeles* were conducted in each case study city.

Different types of questionnaires and interview questions were prepared for the multi-level assessment. First, for the MUDHCo, the questionnaires aimed to extract clarity regarding the national situation and current strategy regarding policy and political administration amongst others. Second, the questionnaire for the Regional Urban Land Bureaus (the names vary from region to region) and municipalities were constructed to illicit the urban cadastre situation at local levels with respect to the cadastral 'toolbox'. In both cases, the major problems and strengths in each of the 'toolbox' were also recorded. Meanwhile, observational analysis was used for the contemporary EPRDF regime to capture visible results of the ongoing process with respect to the 'toolbox' elements.

Finally, the data from the case studies was triangulated. This delivered an understanding of the performance of the cadastre over time, from the perspective of each 'toolbox' element. Overall, the approach can be used to judge the evolutionary development of Ethiopia's urban cadastres, and how it has supported, or failed to support, good urban land governance objectives over the three epochs. Subsequently, key areas for improvement and research attention could be identified. The overall research design is presented in Figure 9.

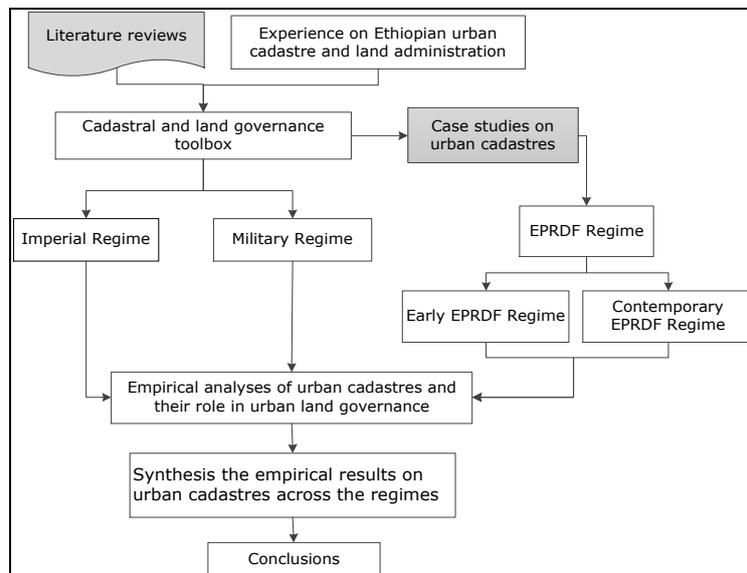


Figure 9 Research design process

3.4 The Imperial Regime's Urban Cadastres

The land tenure systems during the entire Imperial regime were very complex (Crewett *et al.* 2008, Rahmato 2009). According to Crewett *et al.*, different tenure systems were allocated for different parts of the Ethiopian empire, especially in rural areas. These included communal (*rist*), grant land (*gult*), freehold or private tenure (*gebbar*), church (*samon*), and state tenure regimes (*maderia*). The reason for such diversity is perhaps best explained by feudalism: the different models were designed to extract extra rents from harvests for landlords.

Pankhurst (1966) explains that modern urbanization in Ethiopia commenced in 1886 in connection with the establishment of Addis Ababa by emperor Menelik II. The emperor and the landlords camped in the *Fil Wuha* area of Addis Ababa. Through time, the settlement of people around the camp area increased and stable government administration was practiced. Subsequently, formal diplomatic relations started with foreign governments: foreign countries requested the emperor to open embassies in Addis Ababa (Ambaye 2013). The embassies required secure land plots: the emperor realized the need for land related law to answer these concerns and this led the promulgation of the first land tenure law in 1907 (Menelik II Decree 1907). It provided for private ownership of urban land and allowed free transfer of urban land through sale.

Urban property registration commenced following the promulgation of the first land law. The first urban cadastre was developed by a French company (Tadesse 2006). Before that, another French company was involved in the construction of railway line from Dire Dawa to Djibouti in 1902. The French were colonizing neighboring Djibouti by that time and the emperor maintained good diplomatic relations. This supported the development of the first urban cadastre.

The 1907 decree in article 1 states one of the aims of the law was 'to buy land in the town of Addis Ababa'. That means this law promoted the development of the urban cadastres. Article 2 of the same decree also states that 'the government shall assess the amount of money to be paid for a certain area of government land depending on its value'. This indicates that the cadastre also had a fiscal purpose. Following article 11 of the law, property boundaries were registered and mapped in Addis Ababa. In addition, this law also allowed the registration of property transactions. As a means of guaranteeing security of ownership, a certificate named '*yerist woreqet*' literally meant that a title deed was provided. This certificate was written both in Amharic and French (Tadesse 2006): the French influenced the nature and design of the first urban cadastre in Ethiopia. Indeed, article 31 of

the Menelik’s land law states that “*if the laws in this decree are insufficient the judge shall apply the Napoleonic code*”.

Emperor Haile Selassie replaced Emperor Menelik II in 1928. There were no major changes in the land tenure systems, albeit, inclusion of a few provisions in the constitution of 1931 and 1955 provided protection against arbitrary deprivation of landowners from their property without appropriate compensation. The Haile Selassie’s regime established the Ministry of Land Reform and Administration together with the Mapping Agency to administer and conduct rural cadastral surveys (Rahmato 2009). Urban cadastral plans were prepared based on isolated surveys of the town administrations and were kept by municipalities (Abebe 2006).

The governance paradigm only emerged in the 1980s (Kemp et al. 2005): there are obvious limitations in analyzing the Imperial regime cadastres with the ‘toolbox’ approach. However, a rudimentary examination is provided in Table 5.

Table 5 The cadastral toolbox elements and their implication to urban land governance in the Imperial regime

Toolbox elements	Characteristics	Possible implications to land governance
Political	- Tenancy system was the political center	- Inequity
	- Political strain due to tenancy system	- Instability led to the change of the political system
Policy and legal	- Complex land tenure systems	- Inequality
	- Issues of transparency and participation were not in the policy agenda	- No transparency and participation during decision making
Organizational	- Only the Ministry of Land Reforms and Administration takes care of land issues	- Lack of human resources
	- Resistance by government officials to implement cadastre	- Inefficiency - Non-sustainable
Technical	- Traditional means of measuring land was used such as rope, footstep, and stick	- Time demanding lead to inefficiency
	- No computerization	
Societal	- No need assessment	- Inefficiency
	- The society were not involved in government decision making	- Inequality - Non-transparent and non-participatory

3.5 The Military Regime’s Urban Cadastres

The land to people relationship during the Imperial regime was in favour of the feudal landlords. According to Cohen and Koehn (1978), 95% of the land in Addis Ababa was owned by 5% landlords. This situation eventually initiated a revolt with the slogan ‘*land for the tiller*’, which led to the overthrow of the Imperial regime in 1974. A Provisional Military Government Council (PMGC),

which was backed by a socialist ideology, came to power. The land tenure systems experienced a paradigm shift in policy: the nationalization of urban land was provided by proclamation 47/1975 (PMGC 1975): state ownership of urban land and the extra houses landlords prevailed. Cohen and Koehn (Cohen and Koehn 1978) articulate the far-reaching nature and complexity of these policies and their potential to bring about radical changes in urban society.

The preamble of proclamation 47/1975 states the aim of creating an equitable system of urban services among urban dwellers. The law aimed to create land to people relationships that were equitable for all urban dwellers (shaded rows in Table 6) as compared to the unequitable tenancy relationships of the Imperial regime. The major changes made during the Military regime include: the existing complex system of landholding was changed to one of public property; there was no compensation payments or exchanges made with the previous landholder; and the primary aim of the law was to abolish any tenancy relationships. Instead article 6(2) of proclamation 47/1975 provides for possessory rights or a public controlled permit system of use rights for urban residents which was intended to create a sense of equity (Ambaye 2012).

During the period, the Ministry of Public Works and Housing administered urban land. The proclamation created local institutions, the cooperative society of urban dwellers, to assist the ministry in implementing the urban land policies including registering urban houses. Among the different roles of the ministry, according to article 35, was the power to establish registers and delineation of urban boundaries. Rahmato (2009) explains that during the Military regime, there was a need to establish and maintain a modern system of land registration, to design and implement land use programs, and to undertake land surveys to aid in the land reform process. However, this was not possible due to internal political strains.

During the Military regime, governance concepts were in their infancy. It was too early to apply it in any policy agendas. However, based on the study results a general view is provided (Table 6).

Table 6 The cadastral toolbox elements and their implication to urban land governance in the Military regime (good governance implications shaded)

Toolbox elements	Characteristics	Possible implications to land governance
Political	- Political commitment to establish equitable land distribution - Abolished tenancy system	- Equity in urban landholding
	- Political strain that led to civil war	- Disputes that led to the change of the political system - Inefficiency
Policy and legal	- To create equity in urban land and house holding	- Equity - Insecurity because compensation was not paid for landlord holdings
	- No rules and procedures regarding issues of transparency, participation	- Transparency and accountability problem
Organizational	- Ministry of Public Works and Housing, and cooperatives at the lower responsible for urban land - Resistance by government officials to implement the cadastre	- Lack of human resources - Poor coordination - Inefficiency - Non-sustainable
	- Traditional means of measuring land was used such as rope, footstep, and stick - No computerization	- Poor data quality and time demanding lead to inefficiency of the cadastre
Societal	- No needs assessment analysis	- Inefficiency
	- Urban cooperatives, which includes urban people, were involved in government decision making	- Sort of participatory and transparency

3.6 The EPRDF Regime's Urban Cadastres

Different activities took place in the urban cadastre during the EPRDF regime. These activities can be broadly viewed in two sub-epochs: the early EPRDF regime and contemporary EPRDF regime.

i. The early EPRDF Regime's Urban Cadastres

The EPRDF created a Federal Democratic Republic of Ethiopia in 1995 (FDRE 1995). The political system of the country shifted from socialist thinking to federalism ideology. The constitution maintained the state ownership of the land: there was no major change made on the Military landholding systems. However, before the issuance of the constitution the mode of urban landholding changed: an urban land leasehold system was introduced for the first time by the Transitional Government of Ethiopia (TGE) in 1993 by proclamation 80/1993 (TGE 1993). The urban land leasehold law allowed the sale, transfer, mortgage and rent of urban land. This law was consecutively altered by proclamation 272/2002 (FDRE 2002a) and proclamation 721/2011 (FDRE 2011a). The latter provided more focus on improving urban land governance.

In the EPRDF regime, three different attempts were made to introduce modern urban cadastral systems to Ethiopia's major cities and towns. The

first attempt was subsequent to the issuance of the first urban land leasehold law. Multipurpose urban cadastres were intended to be developed for major regional capitals. This was coordinated nationally by the then newly established Urban Development Support Service (UDSS) and was supported technically by the then German Technical Support (GTZ). Four regional capitals, namely Mekelle (1998), Bahir Dar and Hawassa (1999), and Adama (2000), were the considered pilot areas (*c.f.* Abebe (2006)). A second attempt was made in 2008 some years after the issuance of proclamation 272/2002: a multipurpose urban cadastre system was also intended. Financial support was granted from the World Bank for some cities and towns in the Amhara region including Bahir Dar city. These first two attempts are labelled in this research as the early EPRDF regime.

As outlined in the methodology, the early EPRDF regime allowed for empirical data capture and subsequent analysis. Three case study cities namely Bahir Dar, Dire Dawa and Hawassa were examined. As justified, a specific focus of comparing the cadastres in different case study cities (Table 7) and their roles for urban land governance is provided (Table 8).

Table 7 Comparison of the case study cities cadastre using toolbox elements in the early EPRDF regime (major differences are shaded)

Toolbox elements	Criteria	Case study cities cadastres		
		Bahir Dar	Dire Dawa	Hawassa
	Current status	Not serving any purpose	Partly working for land transactions and input for court cases	Serves limited role in parcel boundary identification
	- Drivers	Donor and technology driven	Donor and technology driven	Donor and technology driven
Political	- Regional governments commitment	The regional government lacked both managerial confidence and political commitment to implement the cadastre.	The city administration lacked political commitment to implement the cadastre. Nevertheless, they managed to implement on their capacity.	The regional government lacked both managerial confidence, and political commitment to implement the cadastre.
	- Relationship with the MUDHCo	The regional government was resistant and inflexible. They sometimes clashed with the MUDHCo people. Managers were not staying on their jobs for a long time. Three Bureau heads were changed within four years	They preferred to follow their own approach.	Relatively as compared to the other two, there was smooth relation with the MUDHCo.
	- Period of managers stay on their post		Managers stayed in their position relatively longer. One bureau head is still leading cadastre activities for more than four years	Relatively managers were not staying on their jobs for a long time. Two bureau heads changed in the last four years.
Policy and legal	- Cadastral laws	No cadastral rules and procedures. This makes cadastres in the same region heterogeneous.	No cadastral law, however, there is only one cadastre system for the city administration.	No cadastral rules and procedures. This makes cadastres in the same region heterogeneous.
	- Roles and responsibilities of actors	Not in national and regional rules and regulations	Not in national and city administration rules and regulations	Not in national and regional rules and regulations
	Type of cadastres	Multipurpose	Multipurpose	Multipurpose
Technical	- Geodetic Reference frame	WGS 84 and Adindan	Adindan	The database did not have metadata information to see the detail. However, the cadastral map show some shift with the true North
	- Type of data	Spatial and attribute	Spatial, attribute and archival data	Only spatial data
	- Spatial software	The geodatabase was developed using ArcGIS. The spatial and attribute data are integrated.	A local customized software developed by the contractor is used to integrate the spatial, attribute and archival database	AutoCAD software was used for the spatial part and not linked with the attribute and archival data.
	- Updating	No updating	No updating	No updating
Organizational	- Place of the cadastre office	It was situated within the Industry and Urban Development Bureau	It was situated within Land Development and Management Bureau	It was situated within Trade, Industry and Urban Development Bureau
	- Levels	The cadastre was one core process in the bureau	The cadastre was one department in the bureau.	The cadastre was now upgraded to agency level
	- Staff turnovers	Very high staff turnover. Only few senior staff remain after four years	Relatively staff turnover is better as compared to the other two.	Relatively high staff turnover.
	- Data sharing	There were no rules for data sharing.	There were no rules for data sharing	There were no rules for data sharing

Toolbox elements	Criteria	Case study cities cadastres		
		Bahir Dar	Dire Dawa	Hawassa
	- Integration among and within organizations	There was no strong working relationship among organizations working on the urban land and legal sector.	There was no strong working relationship among organizations working on the urban land and legal sector.	There was no strong working relationship among organizations working on the urban land and legal sector.
	- Societal need assessment	Not conducted	Not conducted	Not conducted
Societal	- Societal and stakeholders participation	Almost none except informing their parcel boundary during the cadastral survey	Almost none except informing their parcel boundary during the cadastral survey	Almost none except informing their parcel boundary during the cadastral survey
	- Expectation of the society on current efforts	The unsuccessful experience of the past two attempts created low trust on future cadastre system	Little expectation from the efforts to regularize informal settlements	The current commitment of the federal government to realize a functional cadastre system gave hope to the society to expect the future

Table 7 shows that the case study cadastres have similar characteristics: the differences across the case study cadastres (the shaded rows) are minor and inconsequential to create major differences to the efficiency of each cadastre. The common characteristics include the spontaneity and fragmentation of commencement: user needs assessments were not readily undertaken. Indeed, the initiative appears donor driven. Additionally, the design of the cadastres was neither based on 'fit-for-purpose' technology selection, nor based on properly established institutional and organizational frameworks. All three cadastres appeared technically orientated, at the same time, technically heterogeneous and ambitious in their goals: all had the stated aim initially of being multipurpose cadastres. However, the pilot cities are overall not considered successful interventions: the opportunity to coordinate from the federal levels appears underplayed. Table 8 provides a summary of the cadastral 'toolbox elements viewed through the lens of land governance.

Table 8 The cadastral toolbox elements and their implication to land governance in the early EPRDF regime (good land governance implication shaded)

Toolbox elements	Characteristics	Possible implications to land governance
Political	- The cadastres development was mainly donor and technology driven.	- Non sustainability - Inefficiency
	- Decision makers lacked managerial skills and commitment to lead the cadastre.	- Lack of commitment - Lack of capacity - Inefficiency
	- Political ambition for multipurpose cadastre without considering the needs and resources at disposal.	- Inefficiency
Policy and legal	- Urban land leasehold policy	- Equity is one of the policy agenda
	- Lack of national and regional rules for technical standards, data sharing and access and so on.	- Lack of integration between systems
Organizational	- Lack of coordination among central, regional, local organizations	- Poor service delivery - Inefficiency
	- Lack of responsible institutions at higher level (e.g., ministry) to lead land issues	- Inefficiency
	- Lack of accountability and transparency in the organizations	- Lack of accountability - Corruption
	- Poor human resource capacity building	- Inefficiency - Poor service delivery
Technical	- The cadastres relied on few geodetic control points	- Poor data quality (e.g., positional shifts; a source of instability and dispute)
	- No cadastral data updating	- Decision making relies on non-current data
	- Various spatial software used	- Difficulty of integrating the different cadastres
Societal	- Lack of societal need assessment	- Inefficiency of the system to address societal needs
	- Lack of societal awareness creation	- Obstacle for implementation
	- Poor stakeholders and society participation	- Public distrust on the system - Non-participatory and non-transparent

ii. The contemporary EPRDF Regime's Urban Cadastres

In the contemporary situation (post 2010), a switch in design emphasis occurred: the federal government focused on developing a legal cadastre. The process started in 2011: a comprehensive analysis at this initial stage is difficult; however, an observation is made on recent policy and legal changes, and some initial ongoing design processes.

The change in focus was driven by the recommendations of DHV, a private Dutch consulting company (Woldemichael 2011). Development of legal cadastres for 23 major cities and towns commenced in 2012, following proclamation 721/2011. Addis Ababa was an exception: it acted as a pilot case and commenced one and half year earlier, in collaboration between Addis Ababa city administration and Hansa Luftbild consultants. According to Zein *et al.* (2013) the development of the legal cadastre for Addis Ababa was recently completed and the functionality of the systems is successfully tested. In due course local staff in the city administration acquired technical skills that enabled them to run the system independently. This is useful to keep the system sustainable. From these early successes, the Addis Ababa city administration is confident that the developed systems will solve land tenure problems in the city in the medium to long term. The Addis Ababa pilot project is now taken as a blue print for the national level and efforts are being executed to extrapolate it to major cities and towns. However, according to Bennett *et al.* (2014), the human capacity, and efficiency of existing organizational and institutional frameworks to maintain the designed system remain challenging.

The legal cadastre demanded new laws be formulated and implemented. Following this, different laws are being issued both at the national and regional levels. The Urban Landholding Registration Proclamation (FDRE 2014), which was not available during the earlier cadastral development, was issued in early 2014. This proclamation intends at creating a harmonized cadastral system in the country.

The legal cadastre also demanded new organizational setups to be formulated and implemented. As a result, different organizational reforms are being established both in the MUDHCo and in regions. The newly established Integrated Land Management Information System Project Office for the design of cadastral systems and the Immovable Property Registration Agency for real property registration provide examples. Apart from these, major stakeholders and their responsibilities are identified. For example, the Ethiopian Mapping Agency (EMA) is responsible for the establishment of geodetic control points, and the Information Network Security Agency (INSA) is responsible for aerial surveys and orthophoto production. These and other stakeholders work in collaboration with MUDHCo and regional organizations in an integrated way (Figure 10).

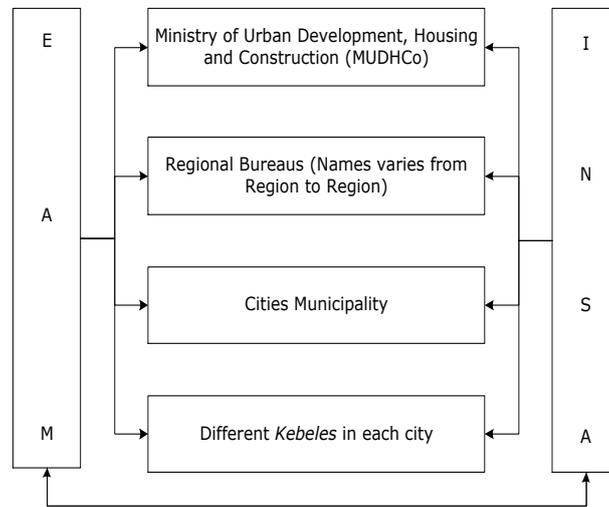


Figure 10 Organizational integration for the contemporary urban cadastre development

The government also paid attention to human resource capacity development. International short-term training activities and workshops regarding land administration and cadastre were delivered for experts working on urban and rural land. Universities are now offering land administration training both at BSc level (e.g. Bahir Dar, Haromaya and Woldia Universities) and at an MSc level (Bahir Dar University). The current political initiative indicates that the government takes cadastral development seriously and places it atop its political agenda. These and other similar efforts made by the government may lead the urban cadastre to play a significant role in urban land governance.

3.7 Synthesis: urban cadastres across the three regimes

This section synthesizes the empirical results of the previous sections on urban cadastres across the three regimes.

i. Political: from undermined support to a priority agenda item

The Imperial system engaged in promoting tenancy reform measures (Rahmato 2009). The land tenure system during the Imperial regime was very complex and varied from region to region. The existing power inequity between the landlords and the tenants was also revealed. Tenants were not secured and had no rights to hold land: they paid rents to landlords. The widening inequality between the landlords and the tenants caused the eruption of disputes across the country and eventually resulted in revolution. According to Rahmato (2009), cadastral and land registration activities were not welcomed by the powerful landed classes: it received minimal support

from political authorities. The Imperial regime ultimately failed to address land inequity and land administration system construction. This weakened efforts to undertake cadastral surveys or land registration. In other words, the urban cadastre did not play a role in improving land governance.

Under the Military regime, the tenancy system was abolished and the political system was committed to creating equity through nationalization of urban landholdings. However, tenure insecurity remained a problem (Crewett *et al.* 2008): all land including the privately (landlord) held land were transferred to government property without due compensation. According to Rahmato (2009), the need for a public agency responsible for urban land reforms (e.g., sustainable land institutions) was evident, however, the authorities in the Military government showed little concern for its realization. In addition, because of the intense political struggle within the country, the cooperatives, which were primarily responsible for the recording of land, were focused on political machinations. Amongst other core reasons, the situation ultimately led to the overthrow of the regime.

During the early EPRDF regime, urban cadastral development was mainly donor and technology initiated (Table 7): the cadastral development program started spontaneously and in a fragmented way (Woldemicheal 2011). Though the government was keen on modernizing land administration systems, the pilot projects were initiated by the availability of donor funds. For example, the cadastral projects in the Amhara region, including Bahir Dar city, were started by a World Bank fund which was only available for short time, less than a year. Political decisions at the federal and regional levels were expedited to ensure funds were utilized: the project was commenced without a user needs assessment, awareness creation, and appropriate technology selection. In addition, mandates for the cadastral development were vested in regional bureaus and city municipalities. Table 7 shows that these organizations lacked financial and human resources. In addition, leaders of these organizations lacked the confidence to make design decisions on their own. The central political power was less involved in supervising and following up on these activities. Overall, poor political commitment was exhibited. In addition, the lack of commitment at the political level created a vacuum that allowed rent-seeking to prevail (Table 7). All the above shortcomings created non-sustainability of the cadastral systems and inefficiency in its implementation. In this regard, the cadastres in the case study cities actually undermined improved urban land governance.

In the contemporary situation, encouraging initiatives that carry the support of the political organs are apparent. By focusing only on the development of a legal cadastre, design and implementation are simplified. Moreover, the government made the development of the legal cadastre a top political

agenda item. Technical developments are being supported by both policy and organizational reforms.

ii. Policy and legal: the trajectory of proclaimed support

During the Imperial and Military regime there were no appropriate policies and laws for modern cadastre development. Instead, the policy of the Imperial regime was in favor of the tenancy system (Table 5). Under the Military regime, the policy aimed to create an equitable landholding situation. From these aspects, the land policy of the Military regime had some sort of governance implications (Table 6). During the early EPRDF regime, the urban land leasehold laws aimed to create equity in urban landholdings. However, the urban land prices were deliberately skewed high by the richer citizens during bidding processes: urban land were made unreachable, in financial terms, to the majority of the poor (Alemie *et al.* 2015b) and inequity between the rich and the poor was exacerbated.

In the case study cities, the cadastres were developed without underlying rules and procedures: there was limited evidence of technical standards and specifications, immovable property registration, data sharing and access regimes, and responsibility and accountability for stakeholders (Table 7). The lack of these rules and regulations led to the city cadastres being heterogeneous and unintegrated. Overall, these shortcomings created problems rather than improvements for land governance.

In the contemporary situation, a new urban land management policy (FDRE 2011b) was issued for the first time. It aimed at creating improved urban land governance that would lead to fair access of urban land among the urban dwellers. Different laws were issued both at the national and regional level following this policy. For example, the Urban Landholding Registration Proclamation is intended as the basis for creating a harmonized cadastral system in the country and improving some of the shortcomings in Table 6 and 7.

iii. Organizational: from few and fragmented towards reform and integration

During the Imperial regime, there was only one central ministry to administer land. Rahmato (2009) reveals that reliable information and documentation was very limited and hampered by the shortage of national expertise, trained staff, and resources. During the Military regime, urban cooperatives were established at the local level to assist the Ministry of Public Works and Housing. According to Shibeshi (2010) and Abebe (2006), only a few attempts of sporadic registration, limited to taxation purposes, were made by the cooperatives. Again, their performance was limited due to lack of human

and financial resources, technical skills, and poor support from the political organs (Cohen and Koehn 1978).

In the early EPRDF regime, the existence of loose coordination amongst and within the organizations at all levels was a major problem for cadastral development. In addition, the respondents from the group discussion mentioned that the existence of competition between organizations and the lack of interest to work in collaboration, both at individual and organization level, were significant problems. The lack of rules regarding responsibility and accountability created a feeling of non-responsiveness and non-accountability in the organizations. These reasons, together with the high turnover of professionals, hampered the efficiency of the cadastres and ultimately assisted in creating a vacuum zone for rent-seeking (Table 7).

In the contemporary situation, different organizational reforms are being established at the MUDHCo and at the regional level. Clear responsibilities for the different stakeholders at different levels are identified. The training programmes commenced in the different universities also aim to contribute to filling the shortage of both technical and managerial personnel. These interventions may assist the realization of a functioning cadastral system that can support improved urban land governance.

iv. Technical: from heterogeneity towards harmonization

During the Imperial and Military regime, there was neither computerization nor use of sophisticated surveying instruments. Thus, the land survey was carried out using traditional means including rope, footsteps and sticks. These types of techniques were sluggish and made service delivery time consuming. In the early EPRDF, major differences existed between the cadastres of the case study cities, especially in relation to technology (Table 7): the three case study cadastres differed in cadastral data types, spatial software, and the geodetic control networks used. This made the three cadastres technically heterogeneous. The cadastre in Hawassa city, for example, has a shift from the true north. According to the respondents at the Hawassa municipality, this became a cause for disputes among neighbours in the city. These and other technical differences created difficulties in integrating the cadastres for national purposes.

In the contemporary EPRDF regime, procedures for technical standards including surveying instruments, spatial software and geodetic networks are being prepared and are legally backing. This will likely play an important role for creating a technically harmonized system.

v. Societal contexts – an often forgotten context throughout

Decision-making on land access during the Imperial regime favoured of the landlords (Table 5). In the Military regime, urban cooperatives (majority of urban dwellers were members) were responsible for cadastral surveying and registration and other local decision-making: societal participation in the cadastral surveying and decision-making processes is implied (Table 6). During the early EPRDF regime, inquiries into what the society expects from the cadastre were not made. These and other shortcomings caused mistrust and undermined perceptions that cadastres could support improved land governance.

In contemporary context, the societal input remains insignificant. Though many welcome the shift from a multipurpose cadastre to legal cadastre, it was not based on a societal needs assessment: the recommendations of a foreign consultant drove the changes. In addition, when the urban land management policy was issued, there was significant societal opposition: no effective awareness campaign or participatory approach was used during the policy formulation process. Indeed, public hearings were only conducted following the social resistance.

3.8 Conclusions and Key Lessons

This paper discussed the role of urban cadastres in supporting urban land governance across the three governing regimes. The Imperial and Military regimes assessments are at the national level, whereas, the EPRDF regime assessment is primarily at the case study level. During the Imperial and Military regimes, cadastral developments were not a political agenda item: the decision makers did not welcome attempts at cadastral development. In addition, the concept of (urban land) governance was neither developed nor acted upon. However, from the rudimentary examination, we depicted that the contribution of urban cadastre for urban land governance was non-existent. During the early EPRDF regime, the concept of both modern cadastre and (urban) land governance gained in popularity. However, the empirical analyses showed that cadastral development encountered different shortcomings that ultimately impeded delivery of improved urban land governance (Table 8). However, the contemporary cadastral development works towards improving these shortcomings (Table 7 and 8): the cadastre may start to play a positive role in improving urban land governance in the decades ahead. Key lessons from this work are as follows:

- *Accept drivers change over time.* The evolutionary cadastral development process in Ethiopia saw the objective of the cadastre move from a fiscal basis, to visions of a multipurpose tool, to a more conservative agenda for legalized land tenure security. Changing governments and societal

interests will be a reality for any cadastral project due to long implementation periods, and therefore most likely need to be accepted as a necessary characteristic of any cadastral implementation.

- *Designs may change over time.* Because drivers change, designs may also change. Again, this may be considered a necessary characteristic for any country attempting to implement a national cadastre. However, the Ethiopian context also illustrates that choosing a less ambitious design approach, with the possibility to upgrade, is perhaps a pertinent approach.
- *Donors support and technology alone are not enough.* In the early EPRDF regime, modern cadastral development suffered because they were donor and technology driven. Finance and technology will only get you so far.
- *Top-down political support forms the vital foundations.* During the Imperial and Military regimes, state-based cadastral developments ultimately failed because of weak political and institutional support.
- *Do not forget to be bottom-up.* Input from the citizen level was still somewhat neglected in the contemporary cadastral designs. The implications for this may yet to be realized and could be far reaching regarding the ultimate success of the cadastral designs.
- *The integrated 'toolbox' approach is necessary.* In line with pre-existing theory, the contemporary cadastral developments are addressing shortcomings of earlier EPRDF efforts: cadastral issues head the political agenda, the significance of specific policies and laws are understood, subsequent organizational reforms are being taken, integration and capacity building are receiving great attention, and technical standards are being prepared.
- *Dividing urban and rural cadastres creates benefits and drawbacks.* Urban and rural areas are connected, however, both exhibit specialized land issues. Separate land institutions and cadastres can more readily enable tailored approaches to cadastral design; however, it is likely to result in duplication issues, administrative voids (likely in peri-urban areas), and integration concerns at later stages. Moreover, efforts to support an integrated national economy and social system are undermined (de Vries *et al.* 2014). The relative benefits and drawbacks of the divided approach should be carefully considered: the short and long term future impact should be studied. Ethiopia recently issued the Urban Landholding Registration Proclamation, however, this has little to say on a unified national cadastre for the country as it focuses only on urban areas.
- *Use the cadastral 'toolbox' approach to examine land governance.* The research shows that using a cadastral 'toolbox' approach comprising of different analytical elements can help in examination of land governance through the domain of cadastres.

As a recommendation, the government should work on improving the problems identified in each 'toolbox' elements in the contemporary urban

cadastral development, making sure any improvements contribute to improved urban land governance. Additionally, contemporary development paradigms, particularly in transition economies, integrate both rural and urban land: as discussed, the implications of this approach for the context of Ethiopia also demands further investigation.

Chapter 4

A socio-spatial methodology for evaluating urban land governance: the case of informal settlements*

* This chapter is based on the ISI article published on:
Alemie, B. K., Bennett, R. M. & Zevenbergen, J. (2015). A socio-spatial methodology for evaluating urban land governance: the case of informal settlements. *Journal of Spatial Science*, [In Press].

Abstract

Urban land has social and spatial dimensions. Governance of urban land should consider these dimensions. Existing methods of evaluating land governance tend to focus on the social dimensions: the spatial dimensions are less considered. A socio-spatial approach developed here is argued to fill this gap. This research supposes that informal settlements can be used to understand urban land governance. A conceptual framework that links urban land governance, socio-spatial dimensions and informal settlements is developed and tested through a case study. The results show that the socio-spatial methodology improved understanding of equity, efficiency and transparency as compared with the existing approaches which solely based on poor quality and unreliable data. This methodology can be used beyond informal settlements such as understanding infrastructural delivery and quality, mapping potential conflict areas and urban land uses where governance plays a great role. Overall, the socio-spatial methodology enabled an all-encompassing evaluation of urban land governance.

Keywords: *informal settlements; socio-spatial approach; spatial analysis; urban land governance*

4.1 Introduction

Activities on land can be considered from two dimensions: the social and the spatial. The social dimension refers to the actions of peoples when interacting with land. It includes the creation and implementation of formal land policies, laws and administrative systems regarding land tenure, land use, land value and land development. It also includes the informal rules of governing peoples' interactions with land. The spatial dimension refers to the spatial space where the social processes are operating and decisions out of it are realized in a physical sense. The dynamic relationships between social and spatial processes are considered the key drivers of the economic, cultural and environmental conditions of the built environment (World Bank 2012). The nature of the relationship in different geographic contexts can be understood through the concept of governance and more specifically land governance.

In this research, the comprehensive and widely accepted definition of land governance from the FIG/World Bank joint conference is used. Thus, land governance refers to "the policies, processes, actors¹² and institutions by which land, property and natural resources are managed through decisions on access to land, land rights, land use, and land development" (FIG/World Bank 2009). In the context of urban land, it is basically about determining

¹² Actors refer to representatives of organizations and interest groups in urban land.

and implementing urban land policies and establishing a strong relationship between urban people and urban land.

The urban environment is the result of intricate interaction between spatial, policy, and governance structures (Gottdiener and Hutchison 2011, Dawson *et al.* 2014). Thus, urban land governance needs to be evaluated to identify the strengths and weaknesses of policy formulation, implementation and its outcomes. One way is to measure governance through assessment of input, process and output indicators (Burns *et al.* 2010). Inputs include tangible land policies, laws and regulations. Processes encompass the task and activities completed amongst the diverse actors during formulation and implementation of urban land policies and laws. Outputs are the results of social dimension of inputs and processes and are manifested in a spatial dimension. Informal settlements are a good example here for contexts with weak urban land governance. As further explained later, informal settlements are utilized within this research.

A continuing challenge for research aimed at enabling urban land governance evaluation, is the integrated inclusion of input, process, and output indicators. Burns *et al.*'s (2010) *Land Governance Assessment Framework* is perhaps the most developed tool in the domain. Gani and Duncan's (2007) *Good Governance Measurement Indexes* are another well cited example. However, both mainly focus on social dimensions of input, processes and outputs: the spatial dimensions receive less attention. Focusing only on the social side of inputs, processes and outputs can be problematic. Markusen (2003) describes how these indicators are often underpinned by umbrella and abstract concepts such as transparency, efficiency, participation amongst others. Consequently, the empirical evidence of these concepts can potentially lack clarity, reliability, and may be open to subjectivity and bias. For example, a system considered transparent for one subgroup in a community may not necessarily be transparent for another subgroup in the same community. Moreover, existing socio-spatial approaches are confined at the theoretical level and often do not include robust empirical enquiry (Jessop *et al.* 2008). Therefore, it is argued that new methodologies are required; ones that include consideration of the existing gaps and that apply an integrated socio-spatial approach.

The spatial approach offers promising spatial data gathering and analysis tools that are useful to address important issues of social effects on the spatial system (McLain *et al.* 2013) such as people-to-land interactions in the urban context. This approach fills the gaps in data poor environments especially where data reliability is a concern such as governance. Dennis *et al.* (2005) explain how spatial information derived from high resolution remotely sensed aerial or satellite imagery can be used to empirically

measure social effects (i.e. the output of policies). More specifically, various works illustrate the utility of remotely sensed imagery for analysis of urban environmental impact assessment (Rahman *et al.* 2011), cadastral data updating (Ali *et al.* 2012), informal settlement analysis (Dubovyk *et al.* 2011, Hofmann *et al.* 2008, Owen and Wong 2013), and urban land use mapping (Hu and Wang 2012). However, none of these studies are explicitly linked with urban land governance¹³.

To this end, the aim of this paper is to develop and test a socio-spatial approach for evaluating urban land governance. First, more depth is provided on debates and methodologies relating to socio-spatial approaches for urban land governance, informal settlements and urban land governance relations, and the contribution of remotely sensed data to urban land governance assessment. From this background, a new socio-spatial methodology for evaluation of urban land governance is proposed and described. A specific case for application is then outlined. Ethiopia is the selected case study country. For various reasons, its urban areas are rapidly expanding: the need for socio-spatial assessment tools is most evident in these contexts. Additionally, in Ethiopia, urban and rural land are governed by independent policy, legal, and organizational frameworks. This simplifies the analysis enabling urban land governance to be considered in isolation. Care is taken to outline the nature of the social and spatial data utilized. The results of the analysis are consequently presented and discussed. The paper concludes with a summary of findings relating them to the methodology, case study results and their implications to urban land governance.

4.2 Conceptual underpinnings

Urban land governance as a socio-spatial phenomenon

Urbanization is a composite process of social and spatial dimensions (Vis 2012). The contested interactions between social and spatial phenomena in urban areas are the focus of increased academic enquiry. Drivers for the discourse include: urban areas increasingly being the major determinant of economic, social, political and environmental contexts within countries, the world's population being increasingly urbanized, the escalating demand for natural resources (e.g. land), and the rise of different problems related to urbanism including informal settlements and slum formation. These problems are driven by social processes and are manifested physically in a spatial dimension.

High contemporary rates of urbanization and the associated problems threaten the capacity of both local and national governments, especially in

¹³ Though these areas have direct or indirect linkage with urban land governance

developing countries (Cohen 2006). In this regard, the concept of governance is considered central to dealing with the interwoven problems of urbanization: governance theories suggest the need for inclusive, participatory, equitable and accountable decision making. These principles are manifested in the input, process and output indicators of land governance (Burns *et al.* 2010). For example, if different actors, including citizens, are allowed to participate in policy making and implementation, improved transparency, trust and citizen empowerment are the suggested result. In other words, uncertainties of the policy plans and its implementation can be reduced (McCall and Dunn 2012, Dawes 2010).

The diverse interests need to be discussed and dialogued among the different actors in accordance with the urban land policy and laws, and the spatial plans during decision making on the use of urban land. This implies that actors determine the fate of policy making and implementation outcomes (Ajakaiye 2007). However, allowing actors to contribute to the policy making process, and its implementation, can have positive or negative impacts upon governance. Diverse actors generate new ideas and knowledge to solve problems. This fosters shared and transparent decision making. Overall, diverse actors are argued to improve decision making, and lead to improved service delivery and urban development by reducing corruption and litigation activities. Meanwhile, the diverse nature of actors, especially in urban land, does mean conflicting roles and interests are involved. In this regard, decision making may take longer than expected: it is difficult to organize the diverse actors and arrive at consensus. If actors are not satisfied they may actively prevent implementing political decisions (Hüesker and Moss 2015). Furthermore, participatory processes are resource consuming, can undermine government efficiency, and ultimately be to detriment of development (Pahl-Wostl 2009, Ajakaiye 2007). Such problems can be handled by compromise and aligning the different interests of the actors to the land policy objectives and government's political interests.

The previous discussions show that there exists continuous interaction among land policy and laws, actors, and urban land. One opportunity for evaluating urban land governance from both social and spatial dimensions is to utilize the approach used by Burns *et al.* (2010). The approach involves consideration of input, process and output indicators.

- Input indicators – refer to land policies, laws and regulations. They are rules that can be implemented by diverse actors during their interaction to use the spatial systems.
- Process indicators – refer to the interaction within and among the different actors that have roles on urban land.

- Output indicators – refer to the combined results of input and process indicators. Both the positive and conflicting roles of actors are shown on the output indicators and are manifested on a spatial dimension (e.g., informal settlements).

Socio-spatial theories argue that society and space are indivisible, interactive and interdependent (Vis 2012). Ruiz-Tagle (2013) also reveals that social systems exist in a specific spatial boundary and in their co-existence, the spatial systems undergo reconstruction and transformation by the social systems. The continuous interplay between policy and laws, actors and urban land can be potential good example here. Because of the interconnectedness of the social and spatial dimensions, contemporary literature focuses on how to deal with the different issues in the urban areas through a socio-spatial theory. For example, Mattingly and Morrissey (2014) assess housing and transportation affordability using a socio-spatial indicators and recognize a different pattern of affordability as compared with the one-dimensional social or spatial consideration. Letemaa *et al.* (2014) explain the pivotal roles of spatial information and actor arrangements for locating sanitation technologies. Furthermore, Tedonga *et al.* (2014) examine the social and spatial implications of guarded neighborhoods in urban Malaysia and noticed the existence of social exclusion among the different neighbors. In a similar way, urban land governance can also be evaluated through combined consideration of social and spatial dimensions (Figure 11).

The potential link between indicators of land governance, social and spatial dimensions and their governance components along with the potential causes and effects of their poor performance are illustrated in Figure 11.

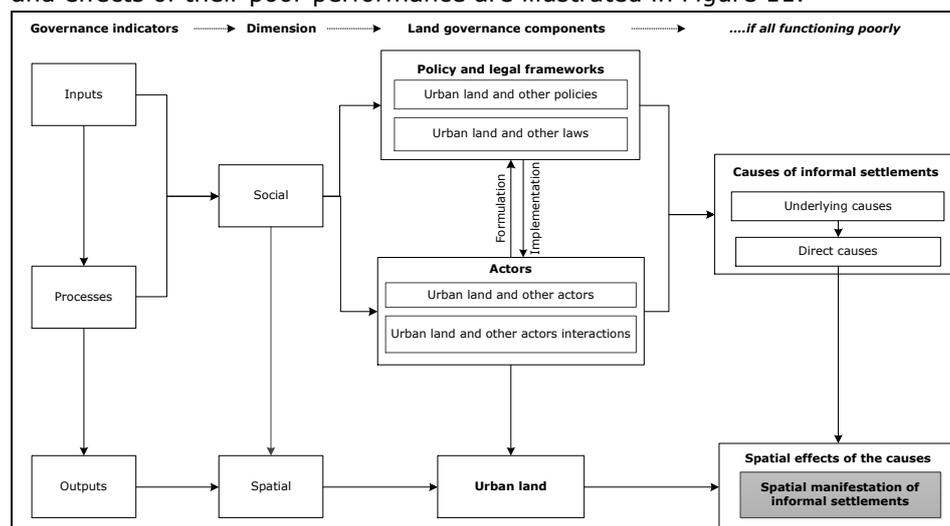


Figure 11 Understanding informal settlements formation via land governance indicators, socio-spatial dimensions and components

Figure 11 illustrates the integration between different components in urban land governance:

- Integration within the social dimensions (e.g. policy and legal frameworks with actors).
- Integration within the spatial dimensions (e.g. urban land with informal settlements).
- Integration between social and spatial dimensions (e.g. the causes and effects of poorly functioning policy, laws and actors on urban land).
- Integration between indicators of urban land governance with the social and spatial dimensions.

Understanding these integrations could help to pinpoint the elements that are integrated poorly or efficiently. In other words, it gives feedbacks on the effects of policies and actors on the use of urban land. This implies that the socio-spatial dimension helps to understand the full spectrum of urban land governance. Therefore, a framework for evaluating urban land governance could build on this conceptual model.

Informal settlements and urban land governance

According to UNSTAT (2005) informal settlement are: “*areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally. They are unplanned settlements and areas where housing is not in compliance with current planning*”. Literature (e.g., Shabane *et al.* (2011) and Abbott (2002)) describe informal settlements as those settlements that do not adhere to local building codes, have either low levels of infrastructure or no infrastructure (e.g. water, power, sanitation, health centers and roads), have informal or no security of tenure, and are characterized by irregular pattern. Whilst many indicators are relevant to evaluate urban land governance, the existence and extent of informal settlements is one that receives high attention. Van der Molen (2014) highlights that governance is the main issue both in improving or worsening informal settlements.

According to Haferburg (2002), the proliferation of informal settlements are signs of existence of inequality, especially exclusion of minority and low income people from accessing urban land. Besides, different factors are articulated for contributing the expansion of informal settlements including: population growth and rural to urban migration (Shabane *et al.* 2011, Dubovyk *et al.* 2011), lack of pro-poor housing policy (UN-ECE 2009), poor information system (Shabane *et al.* 2011), poor urban planning and land management practice (Roy 2005), inappropriate land tenure systems (Jones 2012, Porter 2011), lack of enforcement of policies and rules due to weak and ineffective governments (UN-ECE 2009, Shabane *et al.* 2011, Pahl-Wostl 2009) and political uncertainties and transitions (Niebergall and Loew 2008).

These and other interrelated factors mainly originate from poorly functioning social dimensions including the input and process indicators that lead to the physical manifestation of informal houses at a spatial location (Figure 11). From the different factors listed, it is evident that informal settlements are the outputs of weak land governance (*c.f.* Palmer *et al.* (2009) and Burns *et al.* (2010)). Consequently, they are an indicator of primary concern for evaluating urban land governance.

The above mentioned factors of informal settlement can be further differentiated into direct and underlying causes (Figure 11). Similar distinctions are used in Dennis *et al.* (2005) to understand the causes of forest fires in Indonesia. In this research context, direct causes refer to specific events (e.g. disputes and economic strain) that motivate people to take immediate and practical actions at a local level (e.g., informal landholding), whereas, underlying causes are fundamental to legal, policy and actors. They are distant reasons for people to take actions. In this regards, they underpins the direct causes (*c.f.* Contreras- Herмосilla (2000) and Dennis *et al.* (2005)). Therefore, synthesizing the causes of social dimensions and their effects on a spatial dimension is useful to understand informal settlements thereby urban land governance.

Remote Sensing and urban studies

Location plays a central role in policy, political and cultural understandings (Lebel *et al.* 2007). Meanwhile, new technologies enable capture and compilation of new indicators for understanding urban land governance. Geospatial information, which is the result of such technologies, is useful to capture implicit or explicit location knowledge (de By and Georgiadou 2013) of surface artifacts. Tools such as Geographic Information Systems (GIS) including spatial analysis and remotely sensed aerial or satellite imagery are prime examples of sources of spatial information. Spatial analysis is motivated by demands that are generated by social phenomena (Anselin 1999). It is increasingly recognized as useful in understanding the effects of social systems at a location (Goodchild *et al.* 2000). Remote sensing data sources such as high resolution images (e.g., QuickBird and GeoEye) provide detailed data about specific surface features. For example, in urban areas these imageries clearly depicts individual buildings in slums, roads, and pattern of features (*c.f.* Sliuzas *et al.* (2010)).

Remote sensing sensors record data about the built environment by means of reflectance values derived from electromagnetic radiation. However, remote sensing only records human and natural artifacts (e.g., buildings, roads, and land uses). These features are obviously derivatives of government policies, organizational capacities, and land tenure characteristics. Meanwhile, none of these are directly reflected in the electromagnetic radiation that gets

recorded in the sensor system. Attribution problems in this case are tackled by analysing social data collected on the performances of policies, organizations and other related factors. Such data can lead to understanding of different direct and underlying causes (see previous discussions) thereby their combined effects on the policy outputs. Similar works by Geoghegan *et al.* (1998) and Cowen and Jensen (1998) show that indicators such as equity can be studied from remotely sensed data through the analysis of plots size, nature of roads, and pattern and density of buildings. Such integrated applications of remote sensing makes it to be recognized as a policy assessment tool (Gatrell and Jensen 2008). The other advantage of remote sensing especially in decision making is due to the fact that it creates potential visual effects in the visualization of outputs of public policies.

Specific to the notion of informal settlements, remotely sensed data also has high utility. In such contexts, textual or attribute information is often not readily available (Fekade 2000). This is because informal settlements by nature are highly dynamic (Hofmann *et al.* 2008, Niebergall and Loew 2008) and are usually excluded from government census records (Owen and Wong 2013, Niebergall and Loew 2008) and cadastral records (Fekade 2000, Hofmann *et al.* 2008, Potsiou 2014). Remote sensing can fill this gap. Meanwhile, using remote sensing for identification of informal settlements is not a straight forward process. First, criteria of informal settlements, which varies from place to place and the resolution of remote sensing image, need to be defined (see Table 1). These indicators should be measurable, easily quantifiable and observable from the remotely sensed image (Hoorweg *et al.* 2007).

In summary, this section demonstrated how the socio-spatial approach could be operationalized by equal consideration of input, process, and output indicators. The existence and extent of informal settlements was demonstrated as an important indicator in this regard. The data poor nature of both informal settlement and governance analysis benefits from the state of art of remote sensing technologies. These lessons provide the foundation for the socio-spatial method for evaluating urban land governance that is now presented.

4.3 Research methods

Contemporary researches (e.g., Yeager and Steiger (2013)) suggest to apply mixed methods that comprises of social and spatial analysis techniques to better understand and solve social influences on spatial systems. Pahl-Wostl (2009) also pointed out the need for developing more interdisciplinary approaches to enhance the knowledge base and understanding of governance. In this research, a socio-spatial approach for evaluating urban

land governance is developed and applied. Based on the arguments in the previous sections, the methodology is composed of three parts: literature review, social data collection and analysis, and spatial data collection and analysis.

i. Literature review

Literature reviews on concepts of urban land governance and its socio-spatial dimension were undertaken in order to understand the debates on socio-spatial approaches and its usefulness to urban land governance. Useful criteria for discriminating informal from formal settlements were also reviewed (Table 9). Similar criteria were also used in Owen and Wong (2013).

Table 9 Summary of useful criteria for discriminating informal from formal settlements during image analysis

Criteria	Description of the criteria in the context of informal settlements	Source/s
Vegetation	Lack/low vegetation cover	(Muriuki <i>et al.</i> 2011, Hofmann <i>et al.</i> 2008b)
Road type and material	Short length, irregular and narrow width.	(Owen and Wong 2013, Niebergall and Loew 2008, Kohli <i>et al.</i> 2012)
House size	Small dwelling size	(Niebergall and Loew 2008)
Housing density	Lower nearest neighbourhood distance	(Hofmann <i>et al.</i> 2008a, Kohli <i>et al.</i> 2012)
Building orientation/pattern	Precarious house placement (randomly oriented) and are simple in shape	(Myint <i>et al.</i> 2006, Stasolla and Gamba 2007)

ii. Social data collection and analysis

- The social data collection was done through a field survey. A total of 115 questionnaires, and three group discussions composed of six participants, were conducted. Land administration and development department heads both at Bahir Dar municipality and Amhara Region Industry and Urban Development Bureau were interviewed. Residents for questionnaire were selected randomly, whereas, society representatives for group discussions selected in consultation with *Kebele* experts. In both cases, objectives of the study were made clear to participants. Meanwhile, questions asked were systematically designed. First, participants were asked to list down causes of informal settlements in Bahir Dar. Second, they were asked to use a Likert scale to assign a value to the cause. Third, the participants needed to reason out why, and how, a selected cause played a role in the informal settlement development. The intent was to capture important issues of the causes and effects of the poorly functioning urban land and other policies and laws, and urban land and other actors and their interaction during policy making and implementation (Figure 11). This

helped to understand the specific causes of informal settlements in Wuramit *Kebele* and their effects on the urban land.

- Overall, the data collections strategies and questions asked were designed to distinguish direct and underlying causes of the spatial and temporal expansion of informal settlements in the case study *Kebele* during the social data analysis. Questionnaire data were analyzed using descriptive statistics whereas interview and group discussions data were compared to derive common facts.

iii. Spatial data collection and analysis

- Spatial data for this research was collected through the satellite source including a QuickBird image of 2004 with spatial resolution 0.6m and a GeoEye image of 2012 with spatial resolution 0.5m. The GeoEye data is purchased from Geoserve Company whereas the QuickBird data is accessed from Bahir Dar University databank. The cadastral map is accessed from the consultant who developed it, whereas, the land-use map is accessed from the Amhara Region Institute of Urban Planning.
- GPS was used during the field survey to collect ground truth data for informal settlement boundaries, main roads and other reference points. These were used to support the spatial analysis.
- The images were analyzed using segmentation and object oriented analysis. A semi-automatic object extraction was preferred (*c.f.* Baud *et al.* (2010)): it avoids some of the limitations of automatic object detection when applied to informal settlements. These include: continuous rooflines, improper pixilation of building outlines, and incorrect dwelling separation due to diverse materials on a single roof (Owen and Wong 2013). Kohli *et al.* (2012) and Baud *et al.* (2010) suggest to apply visual image interpretation and field survey to minimize such problems. The same is applied here.
- The settlement layer extracted from the satellite images were also used for overlay analysis with the land use and cadastral maps.

The overall methodology can be viewed as a socio-spatial approach (Figure 12).

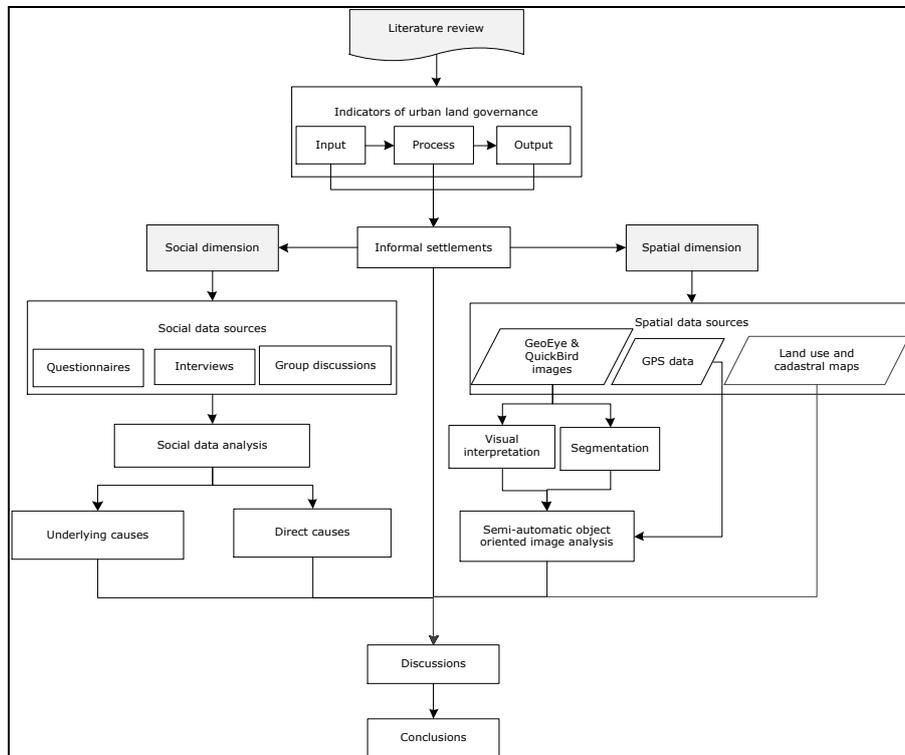


Figure 12 A socio-spatial research design

4.4 Description of the case study

The developed methodology was applied in Bahir Dar city, the capital of Amhara National Regional State in the Northwest of Ethiopia (Figure 13). The city is divided into nine administrative *Kebeles*. Like other cities and towns of the country, informal settlements in Bahir Dar are a common phenomenon. Informal settlements are locally called 'yechereka bet'. The literal translation is 'moon house': they are built in the night.

In Bahir Dar, new informal settlements are found in peri-urban *Kebeles*, whereas, the old ones are usually found in the central and sub-central parts of the city. To understand the social and spatial dimensions of informal settlements, a peri-urban Wuramit *Kebele* is chosen. The selection was made in consultation with municipality officials and people representatives from all the *Kebeles*.

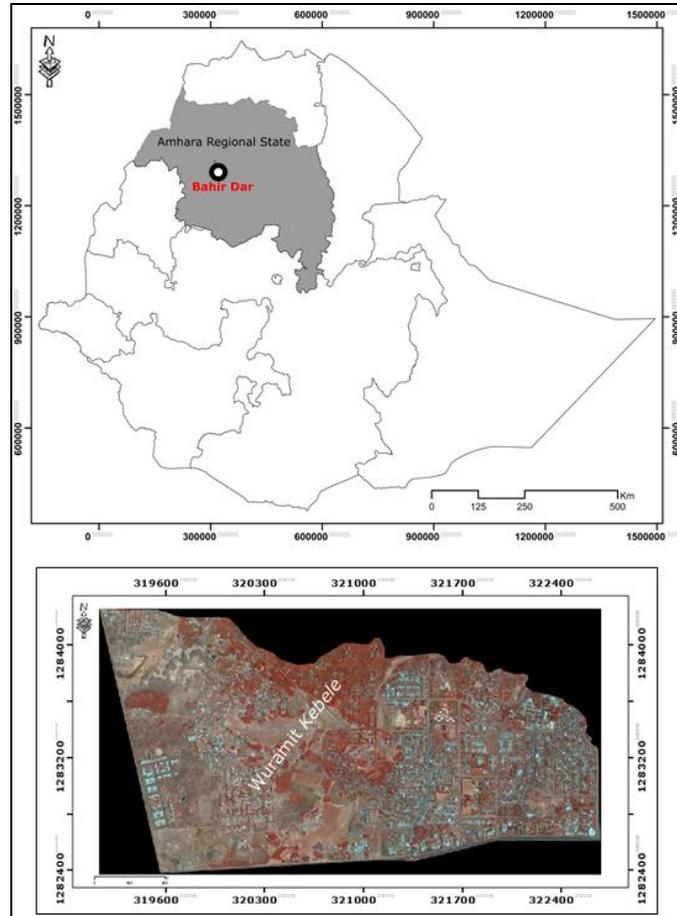


Figure 13 Location map of Wuramit Kebele

Wuramit Kebele is located in the northwest of Bahir Dar (Figure 13). From 2004 to 2012 rapid expansion of informal settlements was experienced especially in pocket¹⁴ areas that are covered by eucalyptus and khat plantations. This strategic situation make them far less visible to municipal and Kebele officials: for extended periods they can develop and expand.

The Wuramit Kebele administration office does not have official socio-economic data about the Kebele. The data in Table 10 is estimated from the discussion conducted with the Kebele officials' and the people living in the Kebele.

¹⁴ Current expansions are also taking place outside the pocket areas in Wuramit Kebele

Table 10 *Socio-economic characteristics of Wuramit Kebele*

Characteristics	Description
Estimated households	2000
Average family size per household	6
Job types	99% daily labourers
<i>Access to infrastructures</i>	
Water	- No access to water; they buy water from nearby formal settlements. The cost for 10 liter water is 1 Ethiopian Birr (ETB). Its price in city centers is 0.25 ETB.
Power	- No access to power; they buy power from nearby formal settlements. The cost for running on bulb is 30 ETB, whereas, its cost in city center is 10 ETB.
Health centre	- No health center within and around the informal settlements.
Police station	- A police station is recently built.

Table 10 shows the low income status of the residents in Wuramit informal settlements. The type and quality of the houses signify this. Most of the houses are single room, congested and poorly sanitized. The informal settlements in Wuramit *Kebele* lack access to basic infrastructures and services including road, water and electricity. They get water and power at unfair prices from the formal settlements. This has exposed them to additional living costs.

4.5 Results

In this section, the social and spatial data analysis results for Wuramit *Kebele* informal settlements are presented.

i. Social data results

The social data collected during the field survey were identified as direct and underlying causes of informal settlements in Wuramit *Kebele*. Additionally, data from the group discussions and interviews were used to complement the discussion. The results of social data analysis are presented in Table 11.

Table 11 Direct and underlying causes for expansion of informal settlements in Wuramit Kebele

Direct causes	Responses (%)				
	Very high	High	Low	Very low	No effect
- Election time political uncertainties	24.3	31.3	24.3	9.6	6.1
- Economic crises	58.6	27.9	5.4	8.1	0
Underlying causes					
- Inefficiency of local government	54.8	19.1	13.0	7.0	3.5
- Improper implementation of land and housing policy	19.1	43.5	20.9	9.6	3.5
- Weak urban land use planning and cadastre system	23.5	49.6	13.3	6.1	6.1
- Low price of urban land in the informal land market	11.3	58.3	13.9	5.2	6.1
- Shortage of houses at affordable rental price	55.7	14.8	13.9	6.1	7.0

The percentage of responses shows that both the direct and underlying causes exhibit very high to high contribution for the spatial expansion of informal settlements over time in the Kebele (Table 11).

ii. Spatial data results

The spatial analysis involves image segmentation and image classification. The results of these steps are now presented here.

Image segmentation

The first step in object based feature extraction is image segmentation. The purpose is to create image objects through partitioning the entire image into constituting objects (segments) based on spectral signature and geometric characteristics of features. A multi-resolution segmentation minimizes the average heterogeneity and maximizes their respective homogeneity (Trimble 2012). It is also used here. This step requires adjusting scale factor, shape, and compactness parameters. Different values for these parameters for QuickBird and GeoEye were used (Table 12) because the two images have different scene and geometric properties.

Table 12 Multi-resolution segmentation parameters

Segmentation parameters	QuickBird 2004	GeoEye 2012
Scale	50	70
Shape	0.3	0.3
Compactness	0.5	0.5

Image classification

The second step in object oriented analysis is image classification. The segments identified by the segmentation process are now assigned to classes. The dominant classes identified during the field study are vegetation, roads, building, and open spaces (Table 13). The criteria presented in Table 9 were applied here to discriminate one class from the other. For example, vegetation was identified from other classes using Normalized Difference Vegetation Index (NDVI). Roads were discriminated using width and asymmetry parameters. However, a number of elongated house roofs and open spaces were misclassified as roads. In such cases, manual techniques, which were supported by visual image interpretation and knowledge of the area, were applied to classify the misclassified ones to their appropriate class. The building class, which was further classified to formal and informal building during level 2, was discriminated using shape index and brightness. Finally, the unclassified objects were assigned to an open space candidate class.

Table 13 Parameters for discriminating candidate classes

	Candidate classes	GeoEye 2012	QuickBird 2004
Level1	Vegetation	NDVI ≥ 0.37	NDVI ≥ 0.4
	Road	Width $\geq 7m$ asymmetry ≥ 0.84	Width $\geq 7m$ Asymmetry ≥ 0.76
	Building	Shape index ≤ 3.4 Brightness > 134	Shape index ≤ 2.5 Brightness ≥ 120
	Open space	Unclassified to open space	Unclassified to open space

Buildings in informal settlements have different characteristics from those in formal settlement. It was recognized during the fieldwork that the average maximum distance between road and formal building is 50m. Distance of roads from buildings is used in Owen (2011) to discriminate informal settlements. Thus, the 50m threshold value was used in a level 2 classification to discriminate informal buildings from formal buildings (Table 14).

Table 14 Parameters for discriminating informal settlements from formal settlements

	Class	Parameters
Level2	Formal building	Building within distance $\leq 50m$ from roads
	Informal building	Building with distance $> 50m$ from roads

However, a few old informal settlements, which are close to roads, were misclassified as formal settlements. In such cases, a manual technique was applied to classify them to their appropriate class. Figure 14 shows the image analysis results for QuickBird 2004 and GeoEye 2012.

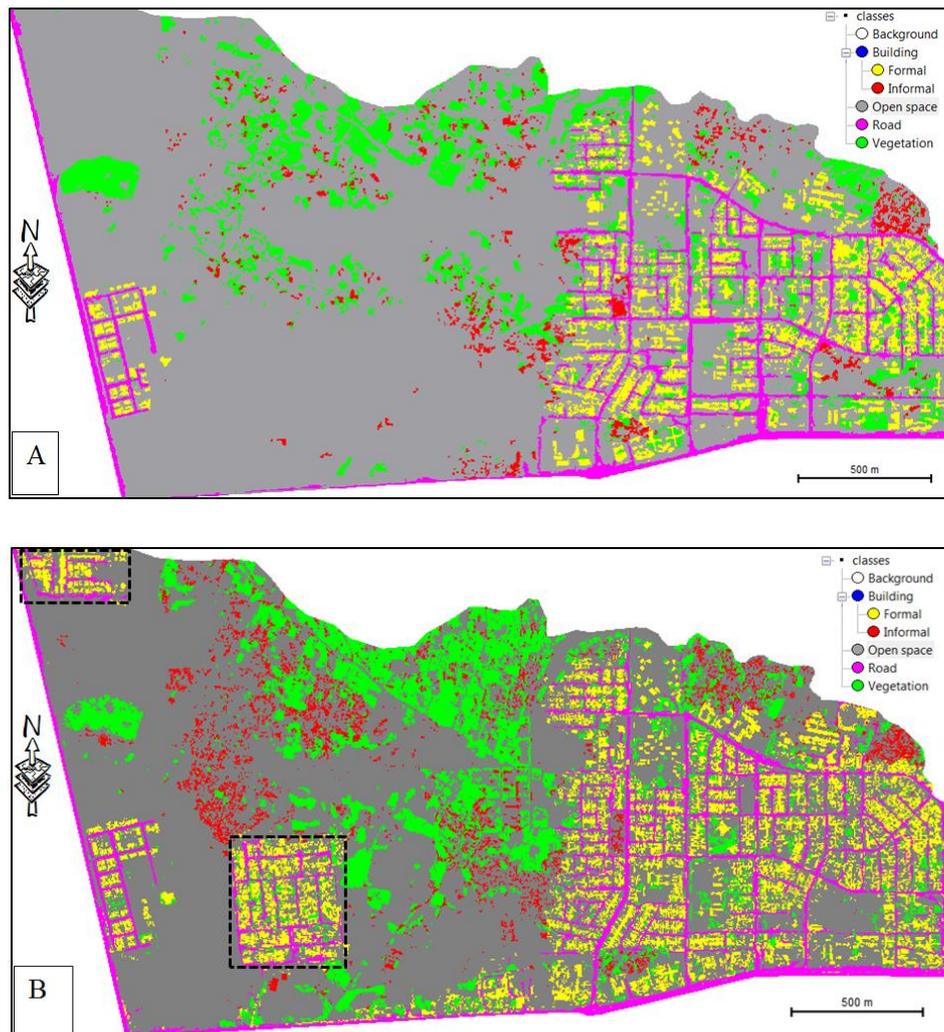


Figure 14 Informal settlements in Wuramit Kebele: A - QuickBird 2004, B - GeoEye 2012

Figures 15A and B show a GIS overlay analysis of informal settlements in 2012 with the land use plan and cadastral map respectively.

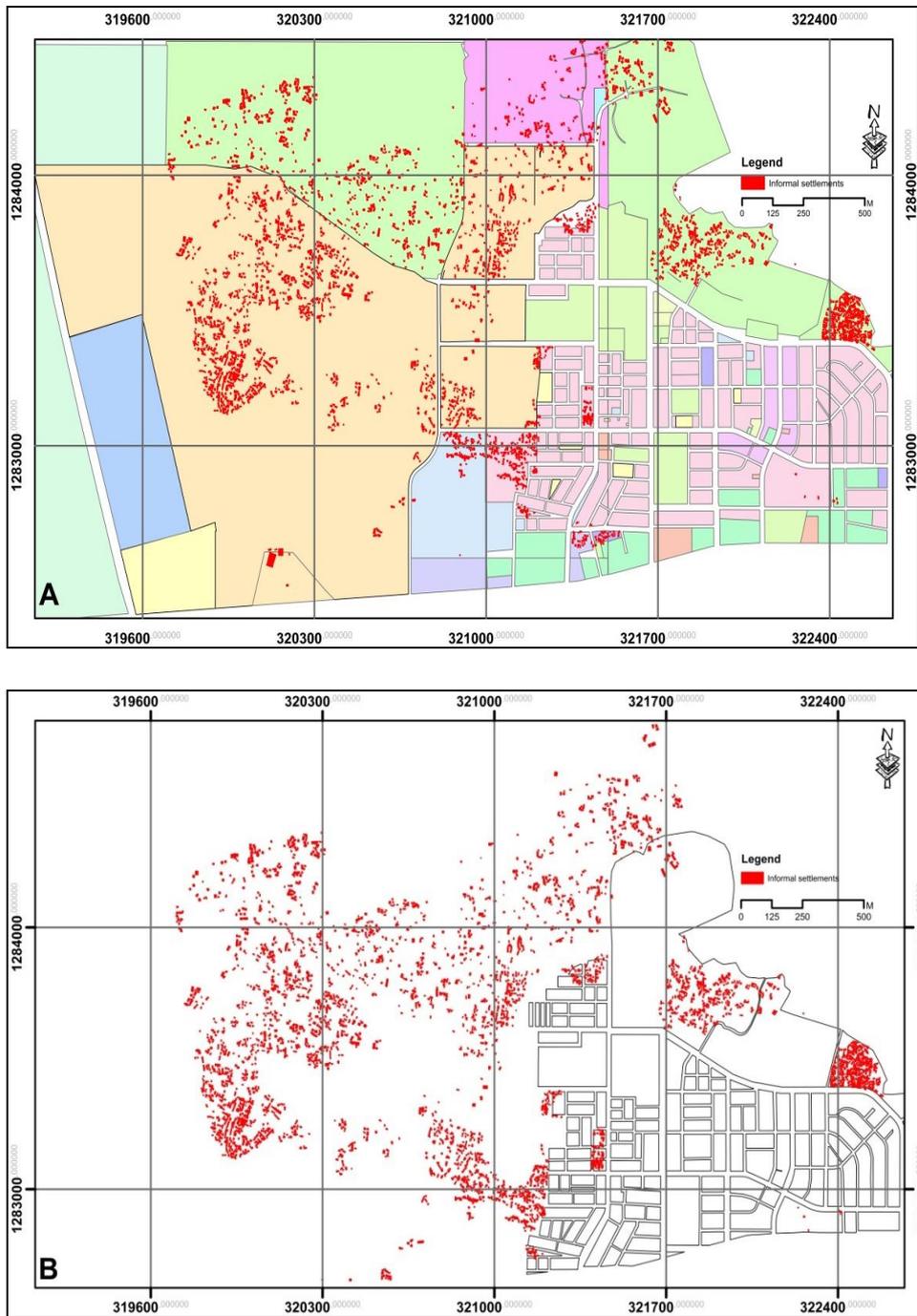


Figure 15 GIS overlay analysis of informal settlements in Wuramit Kebele with: A – Land use plan map, B – Cadastral map

4.6 Discussions

This section discusses three main outcomes of the research: the developed methodology, causes for the spatial expansion of informal settlements and their implications for urban land governance.

i. The socio-spatial methodology

In section 4.1, two contemporary gaps were mainly discussed: 1) the data poor nature of existing social inclined land governance evaluation approaches; and 2) the lack of methodologies that integrate the social and spatial dimensions in the evaluation of land governance. Whilst the socio-spatial approach is not novel in general sense and is applied in other domains (e.g. sociology (*c.f.* Vis (2012))), it remains theoretical in other domains, and was certainly yet to be applied to the land governance domain. In this research, a socio-spatial methodology specific to evaluating urban land governance is developed and tested with empirical evidence. The developed methodology enabled both an understanding of the spatial expansion of informal settlements and their socially driven causes, which are identified as direct and underlying causes. The methodology developed here clearly demonstrates the 'where', 'how' and 'why' of the informal settlements developing in Wuramit Kebele.

To be more specific, the 'where' question clearly portrays the spatial dimension (see Figure 14) in different epochs. Linking the spatial analysis results with social data from the ground provided answers to questions about 'how' and 'why' the informal settlements exist. A detailed analysis of the 'why' and 'how' questions led to identification of causes as direct and underlying causes (Table 11) that are responsible for the effects on the spatial dimension as shown by informal settlement (Figure 14). Another capability of the spatial analysis as demonstrated in this research is that its potential to drive understanding of temporal trends of informal settlements (in this case between 2004 and 2012). This was not possible to do solely by using the social analysis results. Similarly, the direct and underlying causes were also not possible to extract from spatial analysis alone. Tackling of such gaps calls a socio-spatial methodology.

However, a case study specific limitation is observed on the spatial analysis. Literature (e.g., Kohli *et al.* (2012)) considers the color of roofs as a useful indicator for informal settlements discrimination, whereas, this indicator is found to be less useful here. This is because there are people both in the informal and formal settlements that have similar low socio-economic status and they use similar roof materials both in type and quality. In such cases, the roofs do not show much difference in the remotely sensed images.

ii. Causes of informal settlements in Bahir Dar

Figure 11 shows that the causes of informal settlements originate when the social dimension composed of land policies, laws, diverse actors and their continuous interactions are poorly functioning. Based on the discussions provided in section 4.2, the direct and underlying causes of informal settlements in Bahir Dar are analyzed (Table 11). These causes combined put effects on the urban land (Figure 14). Detail of these results is now discussed here.

Direct causes

The results in this research show that election time political uncertainties and the economic crises were the main direct causes of informal settlements in Bahir Dar. Obviously, both originate from problems associated with the social dimension. The government administration vacuum, resulting from the 2005 national election, and the effects of the 2008 and 2009 global economic crisis, motivated the urban and peri-urban poor to take immediate action: they acquired land through informal means and constructed illegal houses. The causes and resultant effects of such uncertainties are illustrated in Figure 11. More specifically, the physical effect in the real situation is shown in Figure 14. The responses from respondents regarding the two instances are now discussed.

Election time political uncertainties

The response in Table 11 show that 55.6% of the respondents believe the election dispute in 2005 had high to very high contribution for the expansion of informal settlements in *Wuramit Kebele*. According to the respondents in the group discussion, the election dispute was the prime cause for the proliferation of informal settlements in this particular *Kebele*. This is also witnessed from Figure 14A that few farmers were settled in 2004. People were motivated by the administration vacuum created following the unstable moment to get land in an informal way. Respondents, both in the group discussions and the questionnaires, claim that the government was reluctant to take immediate action against such illegal activities because it was taken as one means to divert the attention of the people from taking part in the political dispute processes.

Economic crises

Table 11 shows that 86.5% of the respondents agreed that the economic crises of 2008 had high to very high direct cause for the development of the informal settlements. In the group discussion, respondents mentioned that

about 50-60% of the expansion of informal settlements in Wuramit *Kebele* took place in 2008 and 2009, peak times for the global economic crises. According to the respondents, the prices of food items and commodities grew exponentially between 2008 and 2009 and the low income people were unable to cover different expenses including paying house rents.

Overall, the two direct causes of informal settlements in Bahir Dar are in agreement with Abbott (2002): a correlation between informal settlements expansion and uncertain political and economic situations exists. Next, the underlying causes that underpin the direct causes are discussed.

Underlying causes

The low income people in Bahir Dar were motivated to get land informally and construct illegal houses during the instances discussed earlier. This illustrates dissatisfaction with existing service delivery (in this case lack of affordable houses and access to urban land). Such problems are attributed by numerous and interrelated underlying causes. They are also considered in the socio-spatial framework (Figure 11) and their effect in the real situation is shown in Figure 14. Specific to Bahir Dar, the following major underlying causes are discussed.

Inefficiency of local government

Local governments are the main actor in people-to-land interaction. The effect of policies and laws on the spatial system is dependent on how the local governments are efficient in implementing them. Table 11 shows that 73.9% of the respondents mentioned that inefficiency of the local government in Bahir Dar contributed high to very high underlying role in triggering informal settlements. It was mentioned during the group discussion that the municipality of Bahir Dar came to know about the informal settlements in Wuramit *Kebele* long after they were established. This indicates that the capacity of the local government to cope with the different strategies used by the local people was low. In this research, inefficiency of local government is appeared to be the major underlying cause for the expansion of informal settlement in Wuramit *Kebele*.

Improper implementation of land and housing policy

Table 11 shows that 62.6% of the respondents mentioned that weak implementation of land and housing policy contributed high to very high roles that lead to informal settlements. The case of the condominium housing policy, which was principally meant for low income people, was mentioned in the group discussion: the initial down payments to get the condominium

house and monthly payments to return the bank loan were high. In addition, large numbers of condominium houses were sold for government agencies and some condominium houses were sold through bidding at high prices where the low income people were unable to compete financially. Such unintended outcomes of condominium policies are also observed in Addis Ababa (Wubneh 2013). The low income people feel neglected from the government's housing scheme.

Weak urban land use planning and cadastre system

Land use planning and cadastral systems play important roles in urban development. Table 11 shows that 73.1% of the respondents agreed that weak urban land use planning and cadastre system triggers informal settlements. The spatial analysis results in Figure 15A shows both the formal and informal settlements in Wuramit *Kebele* are taking place on areas designated for other land use classes on the land use plan. Contemporary urban developments are also taking place outside the cadastral boundary of the city (Figure 15B). This depicts that both the urbanization and associated land demands exceeded the capacity of the existing land use plan and cadastre system. According to experts in Bahir Dar municipality and Amhara Region Industry and Urban development Bureau, a lack of national land use and information system policy and related laws are reasons for the existence of weak urban land use planning.

Low price of urban land in the informal land market

Shortage of land supply and high price of land in the formal land market triggers informal land transactions (Jones 2012). Table 11 shows that 69.6% of the respondents agreed that low prices for urban land in the informal land market contribute to the development of informal settlements in Wuramit *Kebele*. According to the group discussion, the lease price of land in Bahir Dar is keeping on rising over time. This makes land to be unreachable, in a financial sense, to the urban poor. On the other hand, the low price, less complex and less bureaucratic processes in the informal land market, as compared to the formal processes, means it becomes an option for the urban poor. According to Adam (2014), the non-state institutions also play a role in the informal land market in Bahir Dar.

Shortage of houses at an affordable rental price

The continuously increasing population in Bahir Dar creates shortage of houses and consequently the rise of rental prices. Table 11 shows that 70.5% of the respondents agreed that shortage of houses and high rental price of the existing houses lead to informal settlements in Wuramit *Kebele*. In the

group discussion, it was mentioned that due to the price inflation of goods during the periods of the economic crises, the urban poor could not afford to pay rent for a house. This pushes the urban poor to become involved in informal land occupation.

Overall, the socio-spatial analysis clearly scrutinizes the two types of causes that are mainly attributed by the social dimensions and their effects on the spatial dimension. Such an integrated assessment of causes and effects of social dimensions on the spatial dimensions is useful to understand the workability of government urban land policies and laws, and the capacity of diverse actors in particular and situation of urban land governance in general.

iii. Implication to urban land governance

Analysis of informal settlements through a socio-spatial approach has different implications to urban land governance. The spatial analysis results in Figures 14 and 15 depict that the situation of service delivery (e.g., formal land delivery) in Wuramit *Kebele* is poor. In addition, these results also show trends of inequity from 2004 to 2012. Here, one should note that a great majority of the people live in the informal settlements are poor day labourers (Table 10). Without the spatial results one could argue that there is no change to the informal settlement over time. This is because there is no a well-organized current data, let alone time-series data of the informal settlements. Furthermore, Figures 15A and B indicate the poor implementation of the land use plan and cadastre systems and Figure 14B¹⁵ also demonstrates that the current formal urban expansions are taking place outside the cadastral boundary and on land uses that are designated for other purposes. Overall, the combined results from the social and spatial analysis clearly show how the government is efficient in dealing with the unprecedented urban growth in Bahir Dar.

Referring back to the spatial results in Figures 14 and 15, they are derived from independent data sources. According to Geoghegan *et al.* (1998), human interference is low in raw satellite images: satellite sensors provide data as it happens insitu. Analysis of such independent data fills the gaps that existing social data collection, which is often encountered by a lack of transparency, unreliability and bias. In this way, the spatial results improve informed decision making, especially in data poor contexts. From the spatial results one can also infer the social causes and assist in tracing the accountable parties.

Overall, the coupling of social and spatial dimensions, via a socio-spatial approach, helps in forming understandings of governance principles such as

¹⁵ The black broken rectangle shows formal buildings

quality of service delivery (e.g., shortage of affordable rental houses), inequity (e.g., lack of access of urban land and infrastructures by the low income people), and inefficiency of local governments. The nature of the satellite data provides results that are transparent and assist decision making to be based on a transparent data.

4.7 Conclusions

This paper creates a conceptual, methodological and empirical link between indicators of urban land governance, social and spatial dimensions, and informal settlements. This assists the evaluation of urban land governance: outputs can be traced back to the contributing inputs and processes. In this regard, informal settlements appeared to be a useful example: causes are easily understood from social analysis and the effects on the spatial dimension are easily mapped using modern geospatial tools. In this context, this research has brought the social and spatial dimensions together, which previously were distanced from one another in evaluations of urban land governance.

Governance is about making decision-making and service delivery to be transparent, efficient and equitable. In the context of urban land, this relates directly to land and housing access. A lack of access leads to informal settlements. The socio-spatial methodology developed in this research demonstrates the intertwined cause and effect roles of the social and spatial dimensions in the proliferation of informal settlements, and thereby draws an improved understanding of equity, government efficiency, and transparency, as compared to existing approaches which are solely based on limited social data sets. Land governance is not limited to issues of informal settlements: it embraces all the activities in the urban people-to-urban land relationships. Thus, the methodology developed can also be used beyond the context of informal settlements. For example, creating spatial and temporal understandings of infrastructural delivery, mapping potential conflict areas, and examining urban land uses are all potential application areas.

Specific to the case study, this research showed that recent formal and informal developments in Wuramit *Kebele* do not correspond with the *de jure* land use and cadastral map. Overall, this research indicates that the government should work towards improving the direct and underlying causes of informal settlements and urban land governance in general.

Chapter 5

Developing an integrated conceptual model to understand types on urban land governance across a continuum*

* This chapter is based on the book chapter accepted for publication on:
Alemie, B. K., Bennett, R.M. & Zevenbergen, J. 2015. Urban land administration and governance. In: Zevenbergen, J., de Vries, W. & Bennett, R.M. (eds.) *Advances in Responsible Land Administration*: CRC Press (Taylor and Francis).

5.1 Introduction

The growth of urban environments, particularly in the form of cities, delivers both positive and negative outcomes. Cities are engines for economic and technological transformation, however, they are also the places where slums, informal sectors, inefficient urban services, and conflict over land resources manifest (UN-Habitat 2012b). The duality of outcomes draws attention to improving urban land governance (Dobson *et al.* 2014).

Governance is argued as both a cause and a solution for the challenges inherent to contemporary urban environments. The former because many urban challenges are the result of weak governance (Szeftel 2000). The latter because the challenges can be addressed through so-called good governance, involving informed and transparent decision making, that results in prosperous and equitable cities (*c.f.* UN-Habitat (2012b). In this work, land governance refers to “the policies, processes, actors¹⁶ and institutions by which land, property and natural resources are managed through decisions on access to land, land rights, land use, and land development” (FIG/World Bank 2009).

Whilst the concepts of ‘governance’ and even ‘land governance’ are adequately covered in literature, little attention is given to the specific case of urban land governance. There are various reasons that support the separate study of urban land governance from land governance more generally. In some countries, Ethiopia for example, there are separate land policies and laws for urban and rural land: urban and rural land are administered by independent institutions and organizations. In addition, urban and rural settings have different physical and social dynamicity. Urban areas are usually more dynamic both physically and socially as compared with rural areas. The magnitude and consequences of poor land management is ultimately different in urban and rural areas, and the spatial accuracy of information required for decision making in rural and urban areas are also different. Furthermore, urban environments, in their current new sizes, for example mega-cities of over ten (10) million inhabitants, are quite unprecedented in human history, particularly with regards to the number that will exist globally. These are new environments with new challenges; challenges relating to land provision, housing, food and water security, infrastructure provision, waste management, and transport/movement. The vertical growth of cities along with their temporal dimension also adds further need for inquiry into information on 3D/4D properties. The need to study urban land independently is clear.

¹⁶ Actors refer to representatives of organizations and interest groups in urban land.

Governing urban land is about dealing with the *urban people-to-urban land* relationships. Information regarding the people-to-land relationships such as descriptions of ownership, the type of land rights, values and uses are all pertinent in this regard. In other words, the support of cadastres, land registers, or and administration systems is crucial. In this chapter, Williamson's *et al.* (2010) definition of cadastre is used: "an official record of information about land parcels, including details of their bounds, tenure, use and value". In addition, cadastre is considered as a system comprising both the cadastral map and land register. The same is applied in Bogaerts and Zevenbergen (2001) and Silva (2005). Land registration here is considered as a subset of the cadastre system and is defined as "the process of recording land ownership, rights to land, and obligations of land owners and users" (van der Molen 2011).

Previous works affirm the central support cadastral information can play in sustainable urban development (Williamson *et al.* 2010) (*c.f.* Bennett *et al.* (2012); Zevenbergen *et al.* (2013)), economic development (*c.f.* de Soto (2000)), environmental protection (*c.f.* Guo *et al.* (2013)) and land governance (UN-FIG 1999). However, Barry and Fourie (2002) also argue that the cadastre can also impede development. Undesired outcomes of cadastral implementation are common especially in developing countries though (*c.f.* Obeng-Odoom (2012)), including Ethiopia (*c.f.* Alemie *et al.* (2015a)).

Meanwhile, most representations or conceptual models that attempt to link cadastres with urban land governance appear to have at least one of two limitations. First (1), they tend to focus on describing either a positive or negative viewpoint: the range of potential outcomes is not displayed. For example, the 'Land Management Paradigm' (Enemark 2005) only depicts the positive relationship: the scenario of unsuccessful and undesired outcomes of a cadastral implementation on land management are not considered. However, as discussed earlier, cadastres may be detrimental to good land governance in some cases. Thus, conceptual models should also portray the pitfalls that lead to the possibility of unsuccessful outcomes. A more balanced, if not holistic, representation would provide decision-makers and practitioners with a multidimensional understanding. Second (2), many models do not represent the importance of spatial component in terms of land governance inputs, processes, and outcomes. The physical context plays a significant influence in all these elements. Third, (3) they tend to be linear in nature: they do not provide for understandings of land rights and tenure security as a continuum (GLTN, 2008). Arguably, land governance actors and processes, where the issues of land rights and tenure security are embedded, can also be viewed as a continuum of different types of land governance. However, existing models lack a comprehensive characterization of the types

of land governance across the land governance continuum. Therefore, a conceptual model that fills these gaps is required to improve understanding of urban land governance.

In response to the above issues, the aim of this chapter is to develop a conceptual model that is: 1) more neutral on positive and negative linkages between cadastres and urban land governance, 2) more inclusive of the spatial component; and 3) demonstrates the types of urban land governance across a continuum by integrating the inputs, processes, cadastral influences, and spatial outputs of land governance. First, the underlying theoretical perspective is further described. A description of the research methodology follows. The results, along with the developed conceptual model, are then presented. Discussion follows and major conclusions regarding the conceptual model are forwarded.

5.2 Theoretical perspective

This section discusses theoretical concepts that underlie urban land governance and debates relating to the role of urban cadastres.

Urban land governance

Urbanization increases the demand for land: more land users and land interests are involved than in rural areas. The new interests can put enormous stress on land (Thuo 2013). Well organized decision-making processes regarding urban land is vital. However, this is often a challenge in developing countries: the new actors and interests are diverse and not easily harmonized (Ligtenberg *et al.* 2009); weak institutions and the high land values mean land is the focus of corrupt actions (Burns and Dalrymple 2008); the rapid and often unplanned illegal conversion of rural land to urban land leaves many actors out of the decision-making process, for example, in Ethiopia (Melesse 2005); urban land laws are often subjected to constant change meaning actors are misinformed, confused, or untrusting (e.g. in Ethiopia the urban land leasehold proclamation was modified three times since its inception in 1993, and in China the land policies have changed dramatically since 1949 (Gao *et al.* 2014)); the growth of cities and associated land demands are supported by obsolete spatial plans (Dawson *et al.* 2014, Fekade 2000); the laws are usually formulated and implemented without an underlying policy (Africa Union Commission (AUC) 2010); the institutional and organizational functions that are responsible for dealing with issues of people-to-land relationships are weak and fragmented (Williamson *et al.* 2010); and the cadastres are not pro-poor and may serve only more elite social groups (*c.f.* Zevenbergen *et al.* (2013)). These issues combined

deter policy implementation, decision-making, and consequently leads to undesirable outcomes.

McNeill *et al.* (2014) suggest that incorporating governance concepts into policy making and implementation is central for tackling the challenges mentioned above. This is because applying a governance concept creates a platform that encourages different actors to participate, various interests to be discussed and argued, and collaboration during policy making and implementation to be strengthened. In the context of urban land, for example, incorporating governance concepts has at least three advantages. First, it pinpoints the exact causes of the urban people-to-urban land problems such as urban land access and land use at the local level, where the epicenter of urban development is located (Rakodi 2003). Second, a governance approach provokes discussions among the diverse actors, including urban people, to scrutinize alternative solutions to the problems identified. Third, it forms a shared platform to follow-up proper implementation of the solutions identified. These factors combined can lead to the achievement of the desired policy outcomes and thereby the goals of sustainable urban development.

Land governance benefits broader public governance (*c.f.* Burns and Dalrymple (2008) and FAO (2007)) especially in urban areas. This is because contemporary urbanization and associated public governance problems such as provision of housing, utilities, infrastructures and waste management have urban land dimensions and obviously can be dealt with via the notion of urban land governance. Solving these problems can improve the lives of the urban poor and consequently supports the realization of sustainable development in a country or nation more broadly (*c.f.* Williamson *et al.* (2010) and Bennett and Alemie (2014)).

Urban land governance as a continuum

The range of possible forms of land tenure is increasingly considered a continuum (GLTN 2008). In the context of land governance, it refers to the forms or types of land governance that can exist during urban people-to-urban land relationships. Across this continuum, three broad types of urban land governance are considered in this chapter. These include good urban land governance, good-enough urban land governance, and bad urban land governance.

In Grindle's (2011) views, good governance is the type of governance that could tackle all the problems that emanate from institutional, actors, and political constraints at once. However, this is perhaps more a vision than a reality: achieving good governance in 'one hit' is difficult, if not impossible.

This is well described by Foster (2000) who suggests that 'good governance is easy to talk about but hard to do': it is difficult to achieve good governance at the operational level. According to Grindle (2011), attempting to create resolve all governance issues and create 'good governance' is a waste of time and resources.

The second type of urban land governance in the continuum is 'good-enough urban land governance'. It considers an intermediate set of options, based on the basic needs of the society, at a given time and socio-economic condition. The good-enough ideology is flexible to future upgrading when and if the appropriate resources and capacities prevail. In this sense, good-enough land governance is similar to the description of 'intermediate tenure options' (Payne 2005) or 'fit-for-purpose' land administration (Enemark 2013). For example, prioritizing the establishment of a legal land right and guaranteeing land tenure security can be an option to support the emerging market economies for countries that lack resources and skills to establish a good system, in all its aspects. The third type of governance in the continuum is bad governance. This refers to a situation where neither the good nor the good-enough governance objectives are attempted or achieved.

The three types of urban land governance are described by inputs and processes and constitute of policies, laws and diverse actors, cadastres of different quality, and the resultant outputs indicators, such as informal settlements. The inputs and processes determine the nature of urban land governance outputs that can be easily understood through spatial analysis (Alemie *et al.* 2015b). For example, in a good governance situation, policies and laws exist and are appropriately designed and implemented by participation and collaboration of the diverse actors; cadastres are efficient and support the achievement of good quality output indicators. In good-enough urban land governance, the formulation and implementation of policies and laws, the actor participation and collaboration, and the influence of the cadastre, combine to support achievement of an intermediate quality of output indicators. In bad governance, policies and laws may or may not exist, actors are very few and do not collaborate; cadastres are poor perhaps even playing an undermining role in the community. The situation results in bad quality of output indicators. Across this land governance continuum, spatial analysis can enhance the understanding of the spatial manifestations of indicators in particular. Meanwhile, the roles of cadastre in land governance continue to be debated in contemporary literature. Some of the key arguments are now discussed.

The debated role of the cadastre in urban land governance

This section presents debates on the roles of the cadastre in land governance, and urban land governance more specifically.

i. The cadastre in support of land governance

Cadastrals, including those used in urban areas, can potentially serve to improve urban land governance: they can support both the good and good-enough urban land governance if properly applied. Table 15 summarizes the major arguments made in various literature sources that argue the positive role cadastrals can play in land governance. Sources include academic journal articles, and reports from the UN and World Bank.

Table 15 A summary of the supportive roles of cadastrals in land governance

Supportive roles of urban cadastrals	Description of the different supporting roles of cadastre	Source(s)
- Improves tenure security	<ul style="list-style-type: none"> - Cadastrals facilitate creation of land rights and tenure security. - Cadastral development encourages formalizing of informal settlements: it serves to improve tenure security for the unsecured urban poor. 	(Henssen 2010b, Deininger and Feder 2009, van der Molen 2011)
- Improves transparency and participation	<ul style="list-style-type: none"> - Cadastral developments, including the needs assessments, cadastral policy making, and cadastral surveying and adjudication activities require participation of citizens and stakeholders. If the cadastre is developed under such conditions then it enhances transparency. 	(UN-ECE 2005, Williamson <i>et al.</i> 2010, Roberge <i>et al.</i> 2011)
- Provides easy access to information	<ul style="list-style-type: none"> - The digital nature of modern cadastral data, and contemporary information technologies, provide the opportunity for easy access to parcel information. 	(Williamson <i>et al.</i> 2010, UN-ECE 2005, Deininger and Feder 2009, Arko-Adjei <i>et al.</i> 2010)
- Improves governments' and citizens decision-making and efficiency	<ul style="list-style-type: none"> - Easy and timely access to cadastral information reduces land transaction costs and also facilitates decisions making and service delivery to citizens. - Easy access to information may help citizens gain access credits, and decide where to invest and others. - Easy access to cadastral data helps the local government to establish a transparent, equitable and fair system of land allocation and land taxation. 	(Williamson <i>et al.</i> 2010, Henssen 2010b, UN-ECE 2005, Deininger and Feder 2009, van der Molen 2011)
- Reduces rent-seeking	<ul style="list-style-type: none"> - Recording parcel geometries and other details including rights, uses and values reduces the room for rent seeking. 	(Williamson <i>et al.</i> 2010, van der Molen 2011, Dale and McLaughlin 1988)
- Improves equity	<ul style="list-style-type: none"> - Cadastrals help to provide an overview of the distribution of land: it identifies who holds what and assists reforms for equitable redistribution. - Cadastrals support formalization of land rights: the urban poor can get tenure security and creates a sense of equity. 	(UN-ECE 2005, Dale and McLaughlin 1988, Barry and Fourie 2002)

ii. *The cadastre undermining land governance*

Deininger and Feder (2009) reveal that governments in developing countries may take the envisioned benefits of cadastres for granted: the undermining roles are not always considered. Indeed, cadastres may not always serve the society, and can even undermine its functioning (*c.f.* Zevenbergen (1999)) (also see Table 16).

Table 16 A summary of the undermining roles of cadastres in land governance

Undermining roles of urban cadastres	Description of the different undermining roles of cadastre	Source(s)
- <i>Limits the traditional freedom of use of land and can create mistrust</i>	- For customary societies, the cadastre can be regarded as an increasing form government control and interference: a loss of freedom and rights is perceived, and mistrust can result	(Dorosh and Thurlow 2011, Henssen 2010b, Deininger and Feder 2009, Arko-Adjei <i>et al.</i> 2010)
- <i>Can have haphazard consequences for social equity</i>	- Cadastres in developing countries are inappropriately used to legalize existing inequity rather than improving it. - Tenure security stimulates abnormal increases in land prices causing socially undesirable land sales that lead to land monopolies, landlessness, disputes, inequity and social exclusion.	(Demsetz 1967, Henssen 2010b, Deininger and Feder 2009, van Gelder 2010)
- <i>Opens opportunities for rent-seeking and litigation</i>	- The open and complicated nature of cadastral design and implementation is open to manipulation by influential elites and those who know the system.	(Zevenbergen <i>et al.</i> 2013, Loehr 2012, Benjaminsen <i>et al.</i> 2008)
- <i>Weakens efficiency of institutions and organizations</i>	- Due to its exposure to rent-seeking, human resource building can also be hampered. This leads to inefficiency of attempting to implement policy goals.	(Payne 2000, Deininger and Feder 2009)
- <i>Financially encumbers the state in the short and even longer run</i>	- Costs of cadastral development and maintenance are high while its outcomes may be either contrary to the expectation or are manifested in the long run: these combined creates financial strains on the national economy.	(Atwood 1990, Henssen 2010b, Barry and Fourie 2002)

In summarizing the theoretical underpinnings of this chapter, it can be observed that urban land governance is the paradigm through which urban environments are studied holistically. Moreover, instances of urban land governance can be understood as residing on a continuum, whereby specific indicators could be used to define cases of good, good-enough, and bad governance, and perhaps even more refined categories. Cadastres are argued to play a determinant role in where a given context sits on the continuum, however, until now most discussions on the role of cadastres concentrate on either of the two extremes. Attention is now given to methodology used to synthesize the ideas from this theoretical backdrop.

5.3 Methodology

Overall, a literature review focusing both broadly and on two exemplary cases, and the systems design approach are used to develop the conceptual model. Details of the specific steps and subsequent integration are now provided.

i. Literature review

Existing literature including scientific, academic and policy and legal documents were reviewed. The objective of this review was to draw a conceptual understanding of concepts in land governance (see, section 5.1 and 5.2), and to elucidate how urban cadastre ought to, and ought not to support urban land governance (see, section 5.3), and to scrutinize important exemplary cases on cadastres and land governance from the global south (Ethiopia) and the north (Netherlands). On this last point, since the 1990s, best practice approaches have been frequently applied in land administration and cadastral system comparison and evaluation (*c.f.* Williamson (2010)). They create a benchmark for comparison and evaluation of the strength and weakness of a specific country's land administration and land governance systems against other countries with better functioning systems. However, in this research an exemplary case is preferred over the best practice due to the fact that the meaning of best practice tends to refer a 'perfect system', which is not the case in cadastre and land governance. The type of analysis helps to identify the requirements for systems reengineering and reform for improvement. Apart from the review of the different secondary literature sources (see below and also section 5.1), prior knowledge on both the Netherlands and the Ethiopian cadastres and land governance systems by the authors was also taken into account to decide the cases for comparison.

For the part of the Netherlands component of the literature review, existing literature were reviewed on the Netherlands cadastre (Wakker *et al.* 2003, Williamson *et al.* 2010, Zevenbergen 2002), overall governance in general (Kaufmann *et al.* 2010, Huther and Shah 1999), land policy (Needham 1997, Buitelaar 2010), land legislation (van Rij and Altes 2010) and spatial planning and mapping (van Rij and Altes 2010). Apart from these, land use data from Enschede was accessed from the ITC Remote Sensing laboratory, University of Twente for illustration purposes.

For the Ethiopian exemplary case, results from chapter two to chapter 4 on Ethiopian urban cadastre and urban land governance, conducted on multiple case study cities by the authors were utilized. These include: urban land governance in Ethiopia (chapter two), urban cadastres in Ethiopia (chapter three) and the spatial analysis of output indicators land governance such as

the cases of informal settlements (chapter four). In addition, the urban land leasehold laws including proclamation 721/2011 (FDRE 2011a) and proclamation 272/2002 (FDRE 2002a) and the urban land management policy (FDRE 2011b) were also important sources of information regarding the laws and policies on urban land in Ethiopia.

ii. Systems approach

Decision-making regarding issues related with contemporary challenges such as urbanization remains a challenge. This is because these challenges are the derivatives of a number of interconnected interactions between different components (*c.f.* Duit *et al.* (2010)). In the context of urbanization, for example, urban land users, urban land, urban land policies and laws, and actors contribute their own influence on the urbanization process. Thus, to apply governance concepts to deal with all the issues of urbanization in general and urban people-to-urban land relationships in particular, an integrated understanding of these components was essential. In these regards, a system approach is frequently applied (Checkland 1999). According to Zevenbergen (2002), systems are sets of elements and their relationships with each other during an operation to attempt a certain defined goal such as a land administration goal. The systems approach has been frequently applied in land administration, cadastre, land registration and land tenure analyses (*c.f.* Zevenbergen (2002), Rakai (2005) and Simbizi *et al.* (2014)).

In the context of this work, as already discussed, the urban cadastre is considered as a system that is described by the combination of urban land (subject), urban people (object) and the rights (Navratil and Frank 2004, Henssen 2010b, Lemmen 2012). In a formal situation, the urban people use the urban land through the established legal right. People-to-land relationships outside or without a legal right are often considered as informal. In other words, the right is a connector between the subject and the object. The same is also applied in this work (see figure 16). The broader Land Administration Domain Model (LADM) is built based on these components and their relationships (Lemmen 2012). Similarly, land governance can also be viewed as a system that comprises of inputs (policies and laws), processes, information (in this case the urban cadastre), and the urban land. Therefore, the systems approach is employed here to integrate the different components of governance, with the resulting indicators, and their spatial outputs, to derive a holistic understanding of the types of urban land governance, and the role of urban cadastres, in the urban land governance continuum.

5.4 Results

This section presents the literature review results on best practices from the Netherlands and exemplary cases of Ethiopia, and the design of the conceptual model.

Literature review results from the exemplary cases

i. Exemplary cases of the Netherlands

Summary of the exemplary cases from the Netherlands' land governance and cadastre experience is now provided.

- The Netherlands' cadastre is described by Williamson *et al.* (2010) as one of the most successful cadastres in the world in terms of its efficiency in supporting the land market, spatial planning and land development activities. Zevenbergen (2002) also reveals that all land in the Netherlands is recorded under the system of land registration and this greatly helped to establish an active land market and acceptable levels of legal security. From the technical point of view, Zevenbergen also explains that the national geodetic framework is well established and maintained, the cadastral register is fully digital, and can be accessed on-line. Zevenbergen also describes the Dutch cadastre as legally simple and organizationally sound.
- The governance index report by the World Bank (Kaufmann *et al.* 2010) indicates that the Netherlands scores high value on all six indicators of governance including rule of law, government efficiency, quality of regulations, control of corruption, voice and accountability, and political stability. Previous works of the World Bank by Huther and Shah (1999) also reveals that the Netherlands fulfilled the good governance criteria.
- The Netherlands experience on harmonizing the spatial planning with land development is considered an example of successful practice by van Rij and Altes (2010),
- Rural and urban land accessibility in the Netherlands shows that the existing systems of the cadastre, spatial planning, and legal enforcement are properly functioning. Accordingly, land is offered in good time, for the proper function, with a reasonable price (Needham 1992), and the existence of informal settlements is thus unlikely.
- The policy and laws making in the Netherlands allows the participation of diverse actors including the public, stakeholders, and local governments among others: the local governments or municipalities are empowered to lead all the activities at the operational level including land development (Needham 1997, Buitelaar 2010).

- Dutch legislation stipulates clear and detailed procedures for actors such as the municipalities to follow in dealing with people-to-land relationships (van Rij and Altes, 2010).

In the case of the Netherlands, the combination of a well-functioning cadastre, spatial planning systems, involvement of diverse actors in policy formulation and implementation, and the significant role of local governments, all enhance urban land governance. The Netherlands can be considered as an example of a good land governance. In other words, the system support the realization of good governance indicators such as tenure security, a formal land market, equity, information access, transparency, and others.

ii. The exemplary case of Ethiopia

Previous works by the authors on urban land governance (chapter 2), urban cadastres (chapter 3), and the spatial output of governance indicators (chapter 4) especially before 2011 are now summarized.

- The case study results in three cities in Ethiopia reveal that tenure insecurity, inequity, and inefficiency of the local government amongst others were the major problems in urban land governance in these cities.
- There was no an underlying policy for urban land before 2011.
- Policy and law making and implementation lacked transparency and participation of diverse actors.
- The local governments were weak in terms of human capacity, decision making, and finance, and this lead to growth in the number of informal land-to-people relationships in the three cities.
- The urban cadastres in the three cities show inefficiency. The issues of cost recovery and supporting urban land governance remained a distant goal.
- In technical terms, they are also technically heterogeneous in terms of the spatial frameworks, software, and surveying instruments used.
- The spatial or urban land use plans did not cope with rapid urbanization: in most cases they were obsolete and incomplete.
- The spatial analysis conducted to map urban land governance indicators such as informal settlements depict that informal settlements were increasing both in space and time.
- However, after the implementation of the 2011 urban land management policy, there is a slight improvement in transparency and consequent reduction of informal settlements. Contemporarily, a legal cadastre is considered to be a fit-for-purpose cadastre for the current socio-economy situation of the country.

Overall, the Ethiopian urban cadastre and urban land governance before

2011 reflected a characteristics of bad urban land governance, albeit with the tendency of moving towards good-enough urban land governance after the 2011 policy implementation.

The conceptual modelling

Previous discussions made clear that the types of urban land governance can be characterized through combined consideration of the inputs, processes, urban cadastres, output indicators, and spatial outputs involved. A close study of each components both at the operational level and conceptual level (see section 5.2) of cadastral and land governance helps to understand the conceptual and operational relationships that exist amongst the components. Overall, a systems approach is employed to bring these components together and show how they interact with each other and can be used to help scrutinize the types of urban land governance. Each component and the interactions within the conceptual model are now summarized.

i. Inputs

Inputs include country specific urban land policies, laws and regulations. Inputs are sets of rules that are applied to govern or manage the urban people-to-urban land relationships in a nation or region. In this sense, inputs are foundational for the urban land governance processes: the way they are formulated and implemented by the actions of actors are central in understanding governance. Overall, the contribution of policies and laws to urban land governance or sustainable development in general depends of the nature and capabilities of actors both in formulating and implementing the inputs.

ii. Processes

Meanwhile, processes refer to the interaction between different actors including urban people, who are the primary user of the urban land, the different stakeholders that work on urban land sectors such as municipalities and others. Attempting a policy goal is a function of the roles and capacities of actors both in policy making and implementation. Actors transform the inputs that exist on paper into physical activities on urban land. This implies that actors are bridges to connect the inputs with the outputs on urban land. Overall, processes of policy making and implementation by actors contribute to the success or failure of urban land governance and urban cadastres.

iii. Urban cadastres

Urban cadastres refer to the spatial and attribute information about urban land (subject), urban people (object), and their relationships created through legal rights. This information is useful in decision making and governance of urban land. The qualities of decision making, in this regard, rely on the availability and quality of the information being used (Dale and McLaughlin 1988). Overall, cadastral information are seen as essential inputs both to formulate and implement policies and laws related with urban land.

iv. Indicators of urban land governance

The intention of this section is to show how the different types of urban land governance are characterized from the perspective of the different components. Thus, indicators of urban land governance, which are derivatives of the interaction between the previous discussed components, are also important to consider here. For example, if the urban land policy is formulated based on the involvement of actors in a transparent way, and decision making is supported by appropriate information sources (e.g., cadastral information), then the outputs of decision making and governance can benefit the majority of the urban people. The cases of Ethiopia presented in chapter two, together with the contemporary government's focus in the urban land sector, the following indicators are relatively more important and hence used in the conceptual model. These include: the issues tenure security, equity, local government capacity, informal settlements and transparency.

v. The spatial outputs

Urban land is a spatial object of focus in urban land governance. The outputs of urban land governance processes are manifested on urban land. In this regard, informal settlements that are the combined results of tenure insecurity, inequity, weak local government among others can be considered as examples. The spatial analysis of satellite images on the urban environment provides the spatial and temporal effects of informal settlements on the urban land (see chapter four). The spatial and temporal manifestations of informal settlements differ from one type of urban land governance to another across the governance continuum. Thus, the spatial outputs of urban land governance indicators are considered useful in the conceptual model. Figure 16 shows the conceptual model between the different components and the types of urban land governance in the continuum.

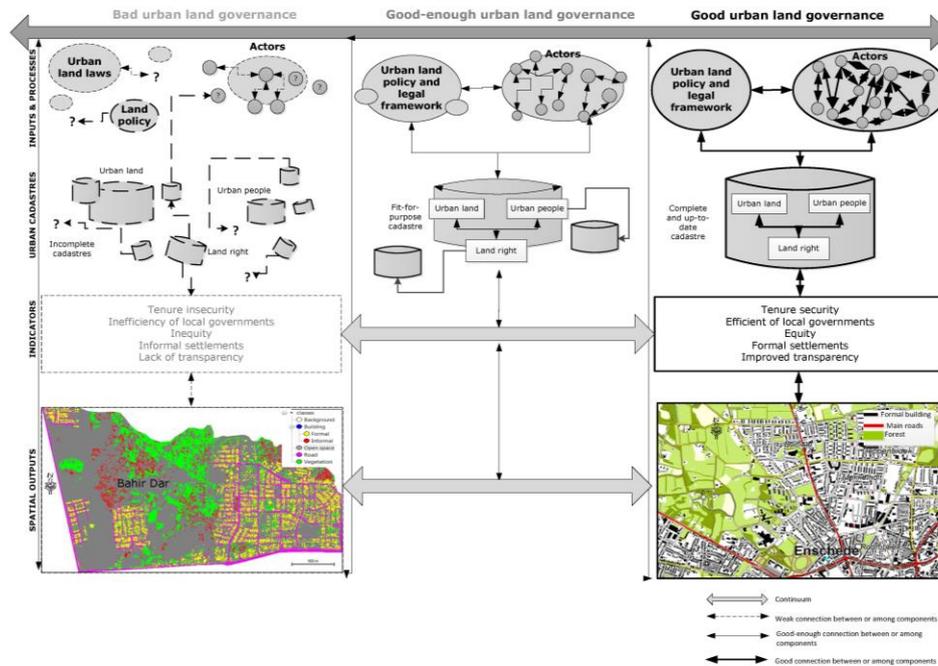


Figure 16 A conceptual model depicting the types urban land governance across a land governance continuum

5.5 Discussion

The systems approach to developing conceptual models can be applied in two ways. The first approach relies only on the use of literature sources to understand and clarify theoretical concepts and their conceptual relationships. The assumption is that there will not be uncertainties during the analysis process. A conceptual model design process follows (*c.f.* Simbizi *et al.* (2014) and White *et al.* (2009)). Testing of the model is conducted thereafter. The second approach prefers first to draw a clear understanding of both the conceptual and operational levels through case studies or exemplary cases. The information from these will be input for the design of the conceptual model (*c.f.* Faehnle and Tyrvaänen (2013)). In this work, the second approach was applied. This is because there are uncertain situations that hinder proper implementation of the model that is developed solely from the consideration of the theoretical concepts. Thus, such conceptual models cannot be useful to solve real urban land governance problems. Especially, in cadastre and land governance discourses where the concepts are subjected to both frequently evolving theories and country specific policies, laws and actors, a combination of the two approaches are argued sharpen the conceptual models. As discussed, the operational situations of cadastre and

land governance of the Netherlands were obtained from the review of literature that was originally the result of detailed empirical and policy analysis.

The conceptual model in Figure 16 demonstrates the types of land governance in a continuum versus the different components including input, process, cadastre, indicators, and spatial outputs. The inputs and processes influence the cadastre, the resulting land governance indicators, and their spatial outputs. This suggests an important messages for decision makers, especially in those countries where the benefits of cadastres are taken for granted: both the success of cadastres and achieving improved land governance indicators in any country is dependent on the inputs and processes. In other words, improvement of the inputs and processes needs to be the first step towards improving the cadastre and land governance more broadly.

The conceptual model also shows the nature of actors in the three urban land governance types: they formulate and implement policies and laws. For example, in a bad governance situation, actors are few and their communication is restricted: there is no integration, decision making is unidirectional, and obviously it is a top-down process. In this case, policies either may not exist (e.g., the cases of Ethiopia before 2011), or if they exist they are poorly formulated and implemented due to the poor performance of actors. Under such contexts land rights may not exist or may be poorly defined, and consequently tenure insecurity problems cannot be resolved. This also has effect on the recordation of land-to-people relationship information in a cadastre. Overall, the cadastre cannot support the improvement of urban land governance. Indeed, it may play an undermining role as seen in Ethiopia, prior to 2011 (*c.f.* Alemie *et al.* (2015a)).

In a good governance situation, diverse actors are involved in an integrated way, both during policy making and its implementation. The policy and laws will clearly address how to deal with people-to-land relationships such as urban land rights and guaranteeing tenure security. This situation creates an efficient urban cadastre that can support a great deal of planning and land management as depicted from the Netherlands examples: urban land are utilized based on the legal rights recorded in the urban cadastre and designated uses in the land use plan. Good quality output indicators, for example, no informal settlements is achieved (see the map of part of Enschede, the Netherlands at the right bottom of Figure 16). Overall, the cadastres significantly contribute to the improvements of urban land governance.

Attempting good governance, particularly in countries with institutional and organizational pitfalls, however, is not an easy task and cannot always be possible: it remains a distant goal. The capacity of actors, simplicity of policies and laws, and efficiency of cadastres are all the product of times. In this regard, considering an intermediate option, such as a good-enough urban land governance, is important. As shown in Figure 16, the number of actors in the good-enough governance case is higher than in bad governance and lower than in a good governance situation. In addition, policies and laws exist, at least at the theoretical level, that are in line with governance concepts. In this regard, the situation in Ethiopia since 2011 can be an example. The first urban land management policy was established, laws to improve informal settlements such as formalization laws were issued, and actors tended to commence exercising a mix of bottom-up and top-down decision-making activities during policy implementation. The government identified issues of tenure insecurity and informal settlements as the major problems in contemporary urban development. Following this, an urban legal cadastre is identified as fit-for-purpose in the immediate context: it would help to solve the identified problems as opposed to the previous ambition for a multipurpose cadastre. According to Alemie *et al.* (2015c), some improvements are evident at the initial stages of the 2011 policy implementation. These include improvements in transparency and reductions in rent-seeking. This implies that there is a tendency of moving towards a good-enough urban land governance.

The conceptual model shows that the urban land governance situation of any country can fall in any of the three types of urban land governance in the continuum. This indicates that the conceptual model can be applied in any country situation. In addition, this work adds further conceptual scrutiny to the existing land governance works of international organizations such as the World Bank and FAO (*c.f.* FAO (2012)). For example, the Voluntary Guideline for Governance of Tenure are considered quite comprehensive, however, attempting to satisfy all the land governance principles discussed in the guideline at once, or in a short timeframe, seems to be unrealistic, at least in the current *status quo* of most developing countries. In many cases a focus on good-enough land governance appears a more workable option.

The contemporary situations in Ethiopia shows a move towards fit-for-purpose land administration and good-enough land governance. In line with the contemporary socio-economic development in Ethiopia, a legal cadastre is found to be fit-for-purpose and relevant to support the marketization of urban land. The tendency in Ethiopia towards a fit-for-purpose cadastre and good-enough land governance can be a lesson for other countries with similar socio-economic situations and current land governance problems.

5.6 Conclusions

The conceptual model developed in this work brings a holistic understanding of urban land governance and the relationship with cadastres. It differs from other existing models in several aspects: 1) it presents a continuum of urban land governance and cadastral interactions – it present more than a simple positive or negative relationship; 2) it is based upon both theoretical concepts and empirical evidence, whereas, existing models are usually confined to theoretical concepts; 3) the model considers inputs, processes, and outputs of urban land governance, whereas, existing models are inclined to focus only on inputs and processes; and 4) the model considers both the social and spatial dimensions of urban land governance, as opposed to existing models focused only upon social understandings. The cases of specific countries are provided for the three types of urban land governance: the bad urban land governance is illustrated by the situation in Ethiopia before 2011, the tendency towards the good-enough urban land governance is exhibited in the contemporary Ethiopia, and good urban land governance situation is demonstrated in the cases of the Netherlands. This implies that the model can be applied to different country contexts. The model also shows that the roles of cadastre in urban land governance range from minimal to substantial. For example, the fit-for purpose cadastre can support the realization of the good-enough urban land governance. Finally, future works should focus on scrutinizing the components of the conceptual model, and examination of the fit-for-purpose cadastre (the legal cadastre in the contemporary situation in Ethiopia), and its contribution for good-enough urban land governance.

Chapter 6

Synthesis

6.1 Introduction

The recognition of the roles of cadastre and governance in sustainable development is gaining momentum in contemporary policy and scientific debates. Chapter one of this work commenced by relaying current sentiments regarding people-to-land relationships in Bahir Dar, around the Institute of Land Administration of Bahir Dar University. The extent and complication of the nature of the people-to-land relationships, especially in ongoing urbanization, challenges the realization of sustainable urban development in most third world countries. The lack of sound and workable cadastral systems and land governance practices to cope with the growing concern of the people-to-land relationship underpinned the research problem, objectives and research questions of this work. Chapter two was devoted to the examination of the cases of land governance both at the conceptual and case study level and chapter three investigated the conceptual dimensions of urban cadastres along with its evolution across three governing regimes in modern Ethiopia. As stated in the proposition in chapter one, the findings in chapter two and three also further affirmed the need for an integrated methodological approach. In addition, empirical and conceptual linkages in dealing with the prevailing problems of the urban people-to-land relationships improves the understanding of urban land governance. As a result, chapter three explored the possibility of creating integration between social and spatial dimensions of urban land governance in order to enhance and complement the shortcomings in existing social-centric understandings of land governance. Furthermore, the results from chapter two to chapter four called for a holistic conceptual model that integrates the different components of urban land governance to create a rigorous understanding of the types of land governance across a broader continuum.

This chapter synthesizes the findings from chapter two to chapter five based on the four research objectives proposed at the beginning. These objectives were:

- Examine urban land governance across government levels in Ethiopia.
- Examine urban cadastres and their roles in urban land governance in multiple cities in Ethiopia.
- Develop and test a socio-spatial framework for evaluating urban land governance.
- Develop an integrated conceptual model to understand types of urban land governance across a continuum.

Section 6.2 provides discussion of the main findings of each specific objective and section 6.3 discusses the implications of these results for knowledge and literature, policy formulation and implementation, tackling other

contemporary challenges and benefits to the case study cities. Finally, section 6.4 provides future research suggestions.

6.2 Main findings from the research

This section summarizes the main findings attempted in each of the research objectives listed above.

i. Examine urban land governance across government levels in Ethiopia

Land governance is gaining in popularity in developmental discourse. International donor organizations such as the UN, World Bank and others consider the issues of governance as their priority agenda: a large amount is invested in institutional strengthening, capacity building and organizational reforms. In addition, different tools are developed by these organizations to support and improve land governance. Some of these tools include the Land Governance Assessment Framework (LGAF) of the World Bank and Global Land Tool Network (GLTN) by UN-Habitat. Despite the comprehensive nature of these tools and their fundamental contribution to improving and understanding land governance, until recently these tools focused on the national and super national levels. Different studies such as Reimer and Prokopy (2014) reveal that the different layers of a government play their own unique contribution in development and urbanization and thereby in land governance. For example, the people-to-land relationships occur at a specified grass-root level or local spatial location. Likewise, other layers have also their own contribution. Especially in a federal political system like Ethiopia, the roles of the different layers can be even more important in all aspects of policy formulation and implementation. Thus, an across level assessment of governance, which is referred to as multilevel governance, is argued to fill this gap. Backed by such theoretical and conceptual understandings, empirical examinations of urban land governance were conducted both at the national, regional and city levels in Ethiopia.

This work brought the governance and management discourses into land in the urbanized world through conceptual, empirical, policy and actors analyses. The case study results demonstrate that urban land governance is weak due to arrangements at national, regional and city levels. In addition, land governance problems identified across these levels appeared to be similar. The policy and actors analyses in the regions and cities show similarity and are almost replications of the national government: only minor differences are exhibited regional legislation. However, improvements are evident since the implementation of the 2011 urban land management policy. This is because the 2011 policy set out the goals of achieving urban land management through creating governance platforms supported by a land

information or cadastral system. The initial implementation of the policy shows that there is a slight improvement with regard to transparency and rent-seeking problems. Overall, the results in this work reveal that urban land policies that are in line with the contemporary conception of governance can benefit the practical implementation of governance and management of urban land across the government levels.

ii. Examine urban cadastres and their roles in urban land governance in multiple cities in Ethiopia

The values of information such as cadastral information in decision making and governance are increasingly recognized. For example, the work of Enemark demonstrates the prevailing move from cadastre to land governance (Enemark 2010). Other studies such as Zevenbergen *et al.* (2013) and Roberge *et al.* (2011) also affirmed the benefits of land recordation in the form of cadastre and land certification systems respectively of improving land governance. However, in Ethiopia there is a scant and grey literature on urban cadastre and its links with urban land governance.

This work was conducted to examine the evolving urban cadastres and their roles in supporting urban land governance in modern Ethiopia. The recognized cadastral 'toolbox' approach informed the analysis of comparing the roles of cadastres in delivering urban land governance across the three study epochs. The results revealed that during the Imperial and Military regimes, there was a scant attempt of realizing fiscal cadastres which encountered a lack of support from the political body: the cadastres during these periods were not serving the land governance: the concept of governance itself emerged in the 1980s. Meanwhile, during the early EPRDF regime before the 2011, even though the concepts of governance were well recognized both at the global and national levels, the urban multipurpose cadastres in the case study cities were not benefiting land governance, perhaps they even contributed to undermining it. Cadastral developments lacked government commitment and were conceived by the society as a means of rent-seeking and posing disputes among neighbours, especially during the demarcation of uncertain boundaries during the cadastral survey. However, since 2011 the government focused on developing a legal cadastre. Obviously, such a move will reduce costs and technical and administrative complications. If properly applied, the legal cadastre can solve the problems with land rights and tenure security. This is important in order to encourage land market investments and is also a basis for other advanced cadastral developments such as the multipurpose cadastre. Different literature such as Williamson *et al.* (2010) acknowledge the pertinent contribution legal cadastres serve in supporting land markets and planning activities. In this regard, it supports the emerging economies in Ethiopia. Overall, the contemporary situation shows evolving processes into a less ambitious design

approach i.e. the legal cadastre, with the possibility to upgrade, is perhaps a more appropriate approach. Some early stage improvements are also observed.

iii. Develop a socio-spatial framework and test it with empirical data for evaluating urban land governance

The current state-of-the-art of geospatial technologies is recognized to be a source for timely and accurate information about features that are the product of people-to-land relationships. Land governance deals with the people-to-land relationships and has both a social and spatial dimension. Literature on its evaluation, however, is tended towards and merely focused on social dimensions of land alone. The data from the social dimension are subjected to biasness and unreliability: they are susceptible to subjectivity. Considering the social dimension alone does not lead a meaningful and thus complete assessment: the data from the spatial dimension is missing. Spatial data especially raw satellite images are less exposed to manipulation. In this regard, it complements the pitfalls of the social data. Therefore, a meaningful land governance assessment should consider both the social and spatial dimensions. Chapter four of this work discussed the design and testing of a socio-spatial methodology to evaluate urban land governance.

A socio-spatial framework for evaluating urban land governance was developed by linking the social and spatial dimension of land governance. It was tested with both social and spatial data derived in a specific area in one of the case cities. The validation implied that the socio-spatial methodology improved the understanding of equity, efficiency and transparency. The results show that informal settlements are spatially increasing from 2004 to 2012. Direct and underlying causes of the expansion of the informal settlements appeared to be triggered by weak urban land governance. This methodology can be used beyond informal settlements such as understanding infrastructural delivery and quality, mapping potential conflict areas and urban land use where governance plays a great role. Overall, the socio-spatial methodology enabled an all-encompassing evaluation of urban land governance.

iv. Develop an integrated conceptual model to understand types of urban land governance across a continuum

As it is stated in the proposition provided in chapter one, the results of the three earlier objectives synthesized called the need for an integrated conceptual model between the social dimension, cadastres and the spatial dimension. Such a model should portray the types of urban land governance by (1) describing both the positive and negative roles of cadastre in supporting the range of potential outcomes of land governance, (2) incorporating the importance of the spatial dimensions in terms of land

governance inputs, processes, and outcomes, and (3) improving a characterization of the types of land governance across a land governance continuum. Overall, such models support decision making on how to deal with people-to-land relationships.

Chapter five of this work presented a conceptual model with key components including inputs and processes, urban cadastre, indicators and their spatial outputs. The model shows the different types of urban land governance across a continuum unlike the previous models. The example cases of specific countries were provided for the three types of urban land governance: the bad urban land governance was illustrated by the situation in Ethiopia before 2011, the tendency towards the good-enough urban land governance is exhibited in the contemporary Ethiopia and good urban land governance situation is demonstrated by the cases of the Netherlands. This implies that the model can be applied to any country situation. The model also shows that the roles of cadastre in urban land governance ranges from no support or having an undermining role to a high support. In addition, the model also created a link between the contemporary conception of the fit-for-purpose cadastre and land administration for developing countries with the good-enough land governance. In this sense, the conceptual model has a pro-poor dimension due to the fact that it is applicable to all countries including the so far less developed ones.

Meanwhile, some limitations were observed in this research. The first is that the issuance of a new land policy after this research started. It was also in its initial implementation during the remaining course of the research. This creates a problem of getting complete empirical data regarding its implementation. This puts its own limitation to examine the 2011 urban land management policy impacts on land governance in detail. The second limitation was associated with the spatial data. The imagery data used in this research were from two different sensors (QuickBird and GeoEye) although these two sensors have closely similar spatial resolutions. Obviously, this has its own limitations on the results. In addition, it would also be good if images from more than two epochs were considered. This was important especially to exactly identify when each direct and underline causes had high or low effect on land governance.

6.3 Implications of the results

This section discusses the implication of the results for: 1) contribution to knowledge and literature in urban cadastre and land governance; 2) policy making and implementation; and 3) tackling other contemporary challenges and the case study cities in Ethiopia.

i. To knowledge and literature

As discussed in the different chapters, governance in general and land governance in particular are widely used concepts in contemporary literature and donor organization reports. However, there is limited literature on urban land governance. This research brings the issues of urban land governance into the urban literature. This is important because the current rate of growth and challenges in urban areas of the world need a special attention to deal with (UN-Habitat 2012a). The results here can enhance understanding land governance as compared with knowledge from the existing unified consideration of rural and urban land.

Different literature (*c.f.* Weinberg (1974) and Hadorn *et al.* (2008)) revealed that integrated approaches such as applying mixed methodologies or interdisciplinary research enhance knowledge production. This research contributes to scientific researches and knowledge production from two aspects. The existing knowledge of land governance is dominated by the social dimensions of urban land: the spatial dimension is less considered. Meanwhile, land governance is the result of interplay between social and spatial dimensions. This research developed a socio-spatial methodology. Unlike in other fields of studies, this methodology has not yet been applied in the field of urban land governance. In this regard, this research contributes the knowledge of spatial dimension into the land governance discourse. In addition, the existing conceptual models lack articulation of the types of land governance across the governance continuum. In this regard, the model developed in this work through the integration of cadastres, processes and inputs, and the spatial outputs versus the types of urban land governance contributes to the literature of governance in general and land governance in particular.

ii. To policy formulation and implementation

Policies and laws are foundations for governance: the process of their formulation and implementation underpin the concepts of land governance. The results of this research presented in the different chapters clearly portrayed this. This research also demonstrated the significance of spatial analysis to evaluate the effects of policy implementation on managing urban land. For example, the spatial analysis results presented in chapter four showed an expansion of informal settlements between 2004 and 2012. This result shows the effectiveness of policies and laws within this time frame. Overall, the spatial results in the form of maps assist the visualization of the impact of the policy implementation and consequently help to infer the shortcomings encountered during implementation. Therefore, such results can assist the formulation and improvement of the existing policy or to improve other processes of its implementation.

The conceptual model in chapter four depicted that in a weak policy situation, or policy void situation, both the cadastre and the land governance outputs are poor. The existence of policy and proper actions of actors, however, lead to better land governance and cadastral outputs. This is an important lesson for decision makers in countries where they try to realize a functioning cadastre and improve urban land governance and sustainable development without or with poor underlying land policy.

iii. To tackling other contemporary challenges

Governance is a cross cutting theme across the contemporary challenges including climate change and poverty alleviation. Land is a common denominator in all of these challenges. On the other hand, land is also a basis for sustainable development and prosperity of life. This work presented how to govern and manage land in the urban context. For example, good governed or managed urban land creates a prosperous city where people equally enjoy the benefits of sustainable urban development. In this case, equity in accessing resources such as land and infrastructure as well as environmental issues are protected and managed.

Different works such as by Corfee-Morlot *et al.* (2009) reveal how issues of climate change are underpinned by understandings of governance at different layers including the local level. Arguably, the tools and approaches used in this research consequently enhance the understanding of governance to tackle other contemporary challenges such as climate change: it improves decision making and policy formulation towards dealing related challenges.

Governance is both a solution and a problem for urbanization. For example, the issues of slums and informal settlements are the products of weak governance: they are recognized as a governance challenge in contemporary urbanization (World Bank 2013b). Solving them by providing services such as housing or land for housing and establishing appropriate institutional and organizational frameworks are part of the ongoing challenge especially for the local governments. In this regard, the integrated approach such as the scale of examination and the methodology and conceptual model developed in this work would improve informed decision making in helping how to understand and deal with such problems.

iv. To the case study cities in Ethiopia

This study examined cadastre and land governance in a series of case cities in Ethiopia. Chapter two and three articulated the weaknesses and strengths of the case study cities land governance and cadastre respectively. This implies that the case study cities' can directly apply the results in this thesis to reengineer and reform institutions and organizations. This study can also be extrapolated to other cities and towns in Ethiopia. The case study results

from chapter two to chapter four demonstrated that there is not much difference in the institutional and organizational setups between case study cities and this will not be exceptional for other cities and towns. The exemplary case from the Netherlands is also useful for the case study cities and consequently to the country as a whole to get lessons on how the Netherlands manage to realize a good cadastre and land governance. The recommendations provided in the different chapters also pointed out the different issues where the decision makers should focus on to improve land governance and urban development.

Overall, the concepts and tools applied in this work, in general, are relevant to allow an inclusive and shared problem solving approach about the pressing issues of people-to-land relationships which the present and common futures entirely depend upon. In this regard, crucial components of our common future such as the environmental and economic problems will not be overcome without integrated and inclusive approaches discussed in this work.

6.4 Future research recommendations

This work showed the potential of the added values of the spatial dimension in the developed socio-spatial methodology to assess urban land governance. Future research should focus on applying similar techniques on a series of imagery and create a statistical correlation between the different direct and underlying causes to enhance an understanding of the contribution of each of the causes to the situation of the land governance.

In addition, future works should focus on applying and testing (pro-poor) land tools such as the Land Administration Domain Model and (LADM) and the Social Tenure Security Model (STDM) and understanding their contribution to improve urban land governance. In addition, the potential of different technologies such as 3D, UAVs and Crowd Sourcing to improve land governance should also be researched.

Proper spatial planning and its conversion into action is an important tool in improving governance. However one of the shortcomings in the case study cities was the lack of updated and complete spatial planning. In the 2011 urban land management policy it is stated that harmony between spatial planning and land development needs to be established. Thus, future works should focus on how to create a harmony between spatial planning and land development, and their positive and negative effects on urban land governance.

This work has demonstrated the concept of integration, and its benefits in the realm of urban cadastre and urban land governance. However, as discussed

in the different chapters, urban and rural land in Ethiopia are independent from each other in terms of institutional and organizational frameworks. Due to this divide, the peri-urban areas where much of the contemporary urban dynamicity occurs appear to be a zone of vacuum: there is often no specific policy or law for the peri-urban areas. This encourages illegal activities such as informal settlements and informal land markets. However, contemporary development paradigms especially in emerging economy countries demand an inclusive and interconnected approach to urban and rural areas. Thus, future research should focus on how to deal with issues of urban and rural integration under different policy and legal frameworks.

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Summary

Governance is considered as central in contemporary developmental philosophies including in poverty alleviation programs, environmental protection agendas and climate change mitigation efforts or more generally in sustainable development agendas. Leading international organizations such as the United Nations (UN) and the World Bank also accepted this notion of and mainstreamed governance as a prerequisite to sustainable development and human rights. Literature also reveals that those countries with meaningful governance show progress and registered track records in development and human right protection. Likewise, land and its access to people are the nexus for development or livelihood in general. Beyond that, owning land and properties constitutes part of the human rights as declared in the UN human right declaration. However, the existing people-to-land relationships are recognized as root causes for the contemporary challenges and the conventional ways of dealing with this are often far from sustainable. From these points of view, land and its relation with the people is an important governance issue and applying governance here is vital in creating a harmony between land and the people and this fosters sustainable development in countries.

Existing literature on the conceptualization and understanding of governance, at least until recently, considers unified systems or generalized consideration of urban, peri-urban and rural land. In addition, existing understanding and assessment of governance mainly focused on the national level and portrays a tendency of towards the social dimension alone. In this regards, the comprehensive work of the World Bank in its Land Governance Assessment Framework (LGAF), the Global Land Tool Network (GLTN) assessment of the UN-Habitat and land policy assessment of the Lincoln Land Institute can be mentioned. However, such generalized understanding has limitations: (1) the level of understanding and assessment of land governance is coarse – people-to-land relationships are local phenomena and a grassroots assessment and understanding is vital, (2) unified consideration is misleading – because there are countries where the urban and rural lands are independent both in terms of institutional and organizational frameworks, (3) the existing social dimension inclined consideration does not show the full picture of land governance – because people-to-land relationships is the interplay between both the social and spatial dimensions. This research was underpinned on these justifications in an urban context.

The general objective of this research was to apply a socio-technical analysis to urban land governance to enhance understanding of the people-to-land relationships across governing levels including multiple cities. Under the umbrella of this overarching objective, four specific objectives were

attempted: (1) examine urban land governance across multiple layers in Ethiopia, (2) examine the evolution of Ethiopia's urban cadastres in support of urban land governance, (3) develop a socio-spatial methodology for evaluating urban land governance and test it with case studies, and (4) develop a holistic conceptual model that supports understanding of the types of urban land governance across a broader governance continuum. The overall research design applied to accomplish the four research objectives can be viewed as a socio-technical analysis where specific methods such as social, spatial and system analyses and their integration were applied as explained in the different chapters of this thesis.

This work brought the governance discourse into urban land in the urbanizing context through conceptual, empirical, policy and actors analyses. The case study results demonstrated that urban land governance is weak in Ethiopia due to arrangements at national, regional and cities levels. The policy and actors analyses at the regions and cities showed almost replications of the national government: only minor differences are exhibited. This may have an impact in altering urban land governance across levels perhaps in the long run. However, improvements of urban land governance are evident after the implementation of the first ever urban land management policy in 2011. This implies that underpinning the governance activities of people-to-land relationships by an underlying land policy with clear objectives and goals is important.

This research found that the evolving urban cadastres and their roles in supporting urban land governance in modern Ethiopia differ from regime to regime. The analysis via the recognized cadastral 'toolbox' approach revealed that the Imperial and Military regimes cadastres were not in line with the principles of land governance even though these concepts were emerged later. Meanwhile, during the early EPRDF, which is before the 2011, the multipurpose cadastres in different studied cities were not benefiting the land governance, perhaps, they attributed in undermining. The basic requirements needed for the operation of multipurpose cadastres including political steadiness, policy and legal clarity, technical capacity, sound organizational design and societal support were missing. The contemporary situation shows improvement. The choice of a less ambitious design approach i.e. the legal cadastre, with the possibility to upgrade, is perhaps pertinent approach. This shows that the urban cadastres may start to play a positive role in improving urban land governance in the decades ahead.

The first two objectives of this research created an in situ understanding of people-to-land relationships across government levels in Ethiopia. The third objective applied integrated spatial and social analysis techniques. A socio-spatial framework for evaluating urban land governance was developed and

tested by analysing the trend of informal settlements on a case study: informal settlements were argued as the result of bad governance. The integrated analysis results implied that the developed framework improved understanding of land governance more specifically land equity, efficiency and transparency. The developed socio-spatial framework can also be applied beyond informal settlements such as understanding infrastructure delivery and quality, mapping potential conflict areas and urban land use where governance plays great roles.

The results from the previous three objectives were integrated through the system approach to develop a holistic conceptual model that demonstrated the types of urban land governance versus the social, cadastral and spatial dimensions across the broader land governance. Specific exemplary cases are linked with three types of land governance: bad urban land governance was illustrated by the situation in Ethiopia before 2011, the contemporary situation of Ethiopia showed a tendency of shifting towards the good-enough urban land governance, whereas, the exemplary case of the Netherlands showed the good urban land governance. The model also linked with the fit-for-purpose cadastre conception for developing countries with the good-enough land governance. This implies that the conceptual model has a pro-poor notion: the model can be applied to both developed and developing countries.

The results in this research have different implications to knowledge, policy making and implementation, and tackling contemporary challenges. In the existing literature, the knowledge of land governance is limited dominantly to the social dimensions of urban land albeit land governance is the result of interplay between social and spatial dimensions. Thus, this research adds the knowledge of spatial dimension and a socio-spatial framework to the existing literature. In addition, the existing conceptual models lack articulation of the types of land governance across the governance continuum: the model developed here through the integration between cadastres, processes and inputs, and the spatial outputs versus the types of urban land governance adds new perspectives to the literature of governance and land governance more specifically. The results in the different chapters showed the workability of applied land policies and laws in dealing with the people-to-land relationships or sustainable urban development more generally. For example, the spatial results in the form of maps assist the visualization of the impact of the policy and its implementation. The conceptual model can have similar role as well. Overall, the different knowledge contributed in this research sharpens understanding of urban land governance or governance broadly and this can be conceived as an essential input to tackle the present and future challenges that are primarily underpinned on the people-to-land relationships.

Samenvatting

In hedendaagse ontwikkelingsopvattingen staat het begrip 'governance' centraal, enerzijds ten behoeve van duurzame ontwikkeling in het algemeen, anderzijds voor armoedebestrijding, milieubescherming en aanpassing aan klimaatverandering in het bijzonder. Het begrip 'governance' is omarmd door de Verenigde Naties en de Wereldbank, die het als een belangrijke voorwaarde beschouwen voor duurzame ontwikkeling maar ook voor het bevorderen van mensenrechten. Onderzoek wijst uit dat landen die governance serieus nemen, op deze gebieden inderdaad betere voortgang boeken. Toegang tot het bezit en gebruik van land (grond) zijn cruciaal voor burgers in hun streven naar een betere levensstandaard. Dat is bovendien in overeenstemming met de internationale en regionale mensenrechtenovereenkomsten die (grond)bezit, huisvesting en voedselzekerheid als mensenrechten definiëren. Er is een overdaad aan research die concludeert dat de wijze waarop landen thans omgaan met de relatie tussen mens en grond oorzaak is van vele hedendaagse problemen. Duurzaamheid is vaak ver te zoeken. Deze wetenschap leidt ertoe dat bezit en gebruik van grond door burgers als een belangrijk onderdeel van governance wordt gezien, en dat de toepassing van de uitgangspunten van governance moeten bewerkstelligen dat harmonie ontstaat in de relatie mens-grond, aldus bijdragend aan de duurzame ontwikkeling van landen.

Daar waar het gaat om de relatie mens-grond, wordt in de literatuur omtrent governance het begrip grond over één kam geschoren, zonder onderscheid te maken in stedelijke, randstedelijke en agrarische grond. Verder ligt bij het bestaande begrip en de beoordeling van governance de nadruk sterk op het nationale niveau en legt men de nadruk op de sociale dimensie. Als voorbeelden kunnen de 'Land Governance Assessment Framework' (LGAF) van de Wereldbank, het Global Land Tool Network (GLTN) van UN-Habitat en de grondbeleidsbeoordeling van het Lincoln Land Institute worden genoemd.

Echter, een dergelijke algemene blik kent zijn beperkingen: (1) het niveau van begrip en beoordeling van governance met betrekking tot de relatie mens-grond is vrij grof – mens-tot-grond relaties zijn een lokaal fenomeen en beoordeling en begrip op het laagste niveau ('grassroots level') is lijkt vereist, (2) gebiedsoverstijgende overwegingen zijn misleidend – vooral omdat er landen zijn waar de grond in stad en op het platteland onafhankelijk van elkaar (juridisch) is vormgegeven en (organisatorisch) wordt beheerd, (3) de bestaande nadruk op de sociale dimensies geeft niet het gehele beeld van governance met betrekking tot grond – nu mens-tot-grond relaties een samenspel zijn van niet alleen sociale, maar ook van ruimtelijke aspecten. Dit onderzoek beoogt deze beperkingen te overkomen, en focust zich daarbij op de stedelijke context.

Het hoofddoel van dit onderzoek is om een socio-technische analyse toe te passen op governance van stedelijke grond, en zo het begrip van de mens-tot-grond relatie op verschillende bestuurlijke niveaus te vergroten, gebaseerd op onderzoek in meerdere steden. Onder dit overkoepelende hoofddoel, zijn vier subdoelen geformuleerd: 1) om de stedelijke-grond-governance op het niveau van meerdere bestuurslagen in Ethiopië te onderzoeken, (2) om de evolutie van het stedelijk kadaster in Ethiopië ter ondersteuning van de stedelijke-grond-governance te onderzoeken, 3) om een sociaal-ruimtelijke methode voor de evaluatie van stedelijke-grond-governance te ontwikkelen en middels casestudies te testen, en (4) om een holistisch conceptueel model te ontwikkelen dat bijdraagt aan het begrip van verschillende types van stedelijke-grond-governance als onderdeel van een algemeen governance continuüm. Het algemene onderzoeksontwerp dat is toegepast om deze vier subdoelen te bereiken kan worden beschouwd als een socio-technische analyse waarbij specifieke methodes, zoals sociale, ruimtelijke en systeem analyse en hun samenspel, zijn toegepast, zoals nader omschreven in de verschillende hoofdstukken van dit proefschrift.

Dit onderzoek brengt het stedelijke-grond-governance discours in verbinding met urbanisatie, via conceptuele, empirische, beleids- en actoranalyses. De casestudieresultaten laten zien dat stedelijke-grond-governance zwak is in Ethiopië vanwege de manier waarop dit op nationaal, regionaal en gemeentelijk niveau is vormgegeven. De beleids- en actoranalyse op regionaal en stedelijk niveau laat een vrijwel volledige kopie van het nationaal bestuur zien; slechts kleine verschillen komen aan het licht. Dit kan op de lange duur invloed hebben op het aanpassen van de stedelijke-grond-governance. Echter, verbeteringen van de stedelijke-grond-governance zijn evident sinds de invoering van het eerste stedelijke grondbeleidskader in 2011. Dit suggereert dat het onderbouwen van governance activiteiten inzake mens-tot-grond relaties middels een specifiek grondbeleid met duidelijke doelen belangrijk is.

Dit onderzoek laat zien dat de evolutie van het stedelijke kadaster en zijn rol in het ondersteunen van stedelijke grondbeleid in hedendaags Ethiopië met iedere regime-overgang veranderde. De analyse via de erkende kadastrale 'toolbox' benadering toont aan dat onder het Keizerlijke en Militaire regime het kadaster niet in lijn was met de principes van grond-governance zoals deze concepten later naar voren kwamen. Tijdens de vroege EPRDF tijd, voor 2011, werd naar het meer-doelen kadaster gestreefd, maar dit bleek in geen van de onderzochte steden van enige invloed op een betere grond-governance, en misschien droeg het zelfs bij aan de ondermijning daarvan. De basisvoorwaarden noodzakelijk voor de werking van een meer-doelen kadaster, zoals politieke stabiliteit, duidelijk beleid en wetgeving, technische kwalificaties bij de staf, een logische organisatorische setting en draagvlak

vanuit de maatschappij, ontbraken namelijk. De huidige situatie vertoont verbeteringen. De keuze voor een minder ambitieus ontwerp, namelijk een juridisch kadaster, met de mogelijkheden van latere uitbreiding, is wellicht een betere aanpak. Dit onderzoek laat zien dat het huidige stedelijke kadaster een positieve rol kan gaan vervullen in het verbeteren van de stedelijke-grond-governance in de komende decennia.

De eerste twee subdoelen van dit onderzoek creëren een in situ begrip van mens-tot-grond relaties op de verschillende overheidsniveaus in Ethiopië. Het derde subdoel past geïntegreerde sociale en ruimtelijke analyse technieken toe. Een sociaal-ruimtelijk raamwerk voor de evaluatie van stedelijke-grond-governance is ontwikkeld en getest door het analyseren van de trends van de sloppenwijken in een casestudie: sloppenwijken worden meestal gezien als het resultaat van slechte governance. De resultaten van de geïntegreerde analyse suggereren dat het ontwikkelde raamwerk het begrip van grond-governance verbetert vooral rond eerlijke grondverdeling, efficiëntie en transparantie. Het ontwikkelde socio-technische raamwerk kan ook worden toegepast buiten sloppenwijken om de levering en kwaliteit van infrastructuur, het in kaart brengen van conflictgebieden of stedelijk grondgebruik waar governance een belangrijke rol speelt, te beschrijven.

De resultaten van de voorgaande drie subdoelen zijn samengebracht door middel van de systeembenadering om tot een holistisch conceptueel model te komen dat aantoonde dat de verschillende typen van stedelijke-grond-governance m.b.t. de sociale, kadastrale en ruimtelijke dimensies ~~over~~ sporen met een breed grond-governance perspectief. Specifieke voorbeelden zijn gelinkt aan de drie typen van grond-governance: slechte stedelijke-grond-governance werd gekenschetst door de situatie in Ethiopië voor 2011, de huidige situatie in Ethiopië vertoont tekenen van een verschuiving richting 'goed-genoeg' stedelijke-grond-governance, waarbij Nederland als voorbeeld van goede stedelijke-grond-governance kan worden gezien. Het model linkt ook het doelgericht kadaster concept voor ontwikkelingslanden (fit-for-purpose) aan het goed-genoeg grond-governance idee. Dit laat zien dat het conceptuele model zicht ook richt op de situatie van de armen (pro-poor): het model kan zowel in ontwikkelde als in ontwikkelingslanden worden toegepast.

De resultaten van het onderzoek hebben verschillende implicaties voor kennis, voor beleidsvorming en beleidsuitvoering, en voor het aanpakken van hedendaagse problemen. In de bestaande literatuur is de kennis van grond-governance beperkt tot hoofdzakelijk de sociale dimensies van stedelijke grond, terwijl grond-governance het gevolg is van het samenspel tussen sociale en ruimtelijke dimensies. Dus, dit onderzoek voegt de kennis van de ruimtelijke dimensie en een sociaal-ruimtelijk raamwerk aan de bestaande

literatuur toe. Verder ontberen de huidige conceptuele modellen de nadruk op de verschillende overheidsniveaus: het hier ontwikkelde model voegt door het samenspel van kadasters, processen en input, en de ruimtelijke output, afgezet tegen het soort stedelijke-grond-governance een nieuw perspectief toe aan de literatuur over governance, en grond-governance in het bijzonder. De resultaten in de verschillende hoofdstukken laten de bruikbaarheid zien van toegepast beleid en wetten inzake mens-tot-grond relaties en duurzame stedelijke ontwikkeling in het algemeen. Bijvoorbeeld, de ruimtelijke resultaten in de vorm van kaarten dragen bij aan de visualisatie van de gevolgen van het beleid en de uitvoering daarvan. Het conceptuele model kan een vergelijkbare rol vervullen. Samengenomen kan de uiteenlopende kennis uit dit onderzoek het begrip van stedelijke-grond-governance of governance in het algemeen aanscherpen. De kennis kan dienen als een essentiële input voor het aanpakken van de huidige en toekomstige problemen waar die primair hun grondslag vinden in de mens-tot-grond relatie.

Biography



Berhanu Kefale Alemie was born on the 1st of May 1977 in Gojjam, Ethiopia. He obtained his BSc. (in Geology) from Addis Ababa University, Science Faculty, Ethiopia in 2000. He joined the International Institute for Geoinformation Science and Earth Observation for the MSc. study in 2003 and graduated with a master of science (MSc.) in Geoinformation Science and Earth Observation, specialization Geoinformatics.

Since August 2010, he is working on his PhD research at the university of Twente, Faculty of Geoinformation Science and Earth Observation. His study focuses on integrating cadastres with urban land governance through a socio-spatial approach. During the course of his PhD research, he has attended different advanced courses and presented his research outputs in various international conferences. He also published his researches finding in highly reputation journals. Berhanu has several years of service in research, teaching and consultancy in the areas of cadastre, natural resources management, GIS and Remote Sensing, and earth science related fields. Some of his recent publications are the following.

List of publications

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1. **Alemie B.K.**, Bennett R.M., Zevenbergen Z. (2015). Evolving urban cadastres in Ethiopia: the impacts on urban land governance, *Land Use Policy*, 42, 695-705.
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