



Evolving urban cadastres in Ethiopia: The impacts on urban land governance



Berhanu Kefale Alemie, Rohan Mark Bennett*, Jaap Zevenbergen

Faculty of Geo-information Science and Earth Observation (ITC), University of Twente, Hengelosestraat 99, P.O. Box 7500 AE, Enschede, The Netherlands

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ABSTRACT

Literature on urban land governance suggests 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: research synthesis 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.

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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, 2010). 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 Stubkjaer (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

* Corresponding author. Tel.: +31 534874339; fax: +31 053 487 44 00.
E-mail address: r.m.bennett@utwente.nl (R.M. Bennett).

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 lands. 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 Treib et al. (2007): “the steering and coordination of interdependent (usually collective) actors based on institutionalized rule systems”.

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 (2004), Nega et al. (2003)). Other research focuses specifically on rural lands, 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 (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 gray literature describing works in progress for the urban context is 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 forecast future needs in terms of interventions and research for urban cadastres in Ethiopia.

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, 2012) 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 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 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 uses and the levying of appropriate land taxation.

Meanwhile, the cadastre's role in dealing with contemporary 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 coherent institutional frameworks (Shabane et al., 2011; 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, among others, forced governments and international organizations to change their approach (FAO and UN-HABITAT, 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 (Bezlepina and Brouwer, 2014). Such a system enables bottom-up decision making: pivotal for identifying the causes of many problems and ensuring decisions equally benefits more citizens and their livelihoods. In the complex case

of densely populated urban land and 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) explains 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.

Research method

Primarily, the research underpinning the paper is observational and qualitative in nature: a case study (Yin, 2003) 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 to 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 (Stuedler 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; Stuedler 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 (Stuedler 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, 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 and data access.
- *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 regimes, data was collected and analyzed using research synthesis. 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, 2002) and proclamation 721/2011 (FDRE, 2011a) (as some towns and cities did not implement the 2002 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). 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 districts were conducted in each case study city.

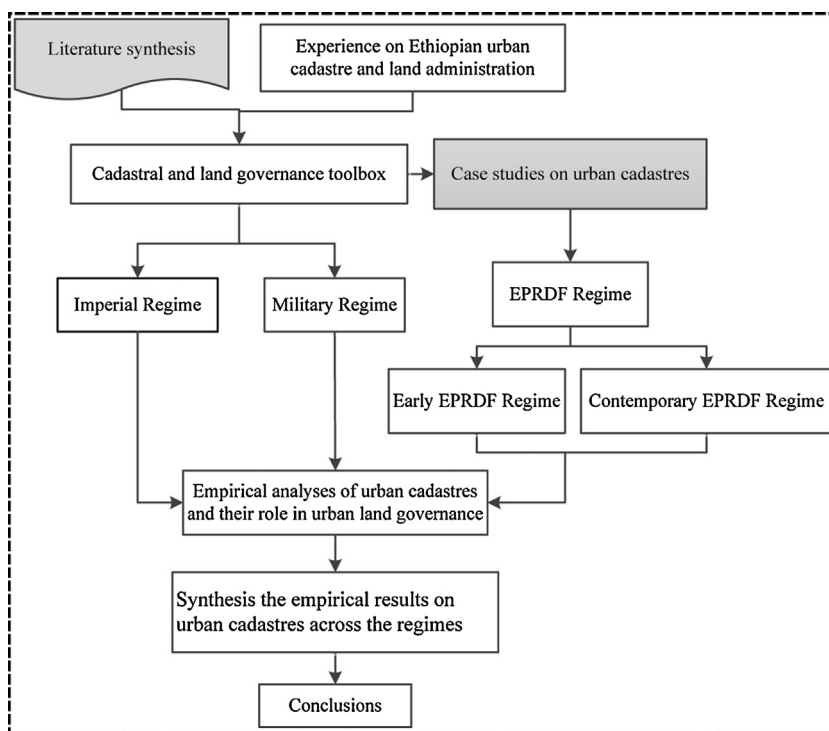


Fig. 1. Research design process.

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 among 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 Fig. 1.

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. The first land tenure law was promulgated 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 1.

The Military regime's urban cadastres

The land to people relationship during the Imperial regime was in favor 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 (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 proclamation aimed to create land to people relationships that were equitable for all urban dwellers (shaded rows in Table 3) 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 2).

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.

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 proclamation allowed the sale, transfer, mortgage and rent of urban land. This law was consecutively altered by proclamation 272/2002 (FDRE, 2002) 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 (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 labeled 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 3) and their roles for urban land governance is provided (Table 4).

Table 4 shows that the case study cadastres have similar characteristics: the differences across the case study cadastres (the shaded rows) are minor and inconsequential 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 4 provides a summary of the cadastral 'toolbox' elements viewed through the lens of land governance.

The contemporary EPRDF regime's urban cadastres

In the contemporary situation, 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

Table 1
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 - Political strain due to tenancy system	- Inequity - Instability led to the change of the political system
Policy and legal	- Complex land tenure systems - Issues of transparency and participation were not in the policy agenda	- Inequality - No transparency and participation
Organizational	- Only the Ministry of Land Reforms and Administration takes care of land issues - No decentralization levels - Resistance by government officials to implement cadastre	- Inefficiency - Non-sustainable - Inefficiency
Technical	- Traditional means of measuring land was used such as rope, footstep, and stick - No computerization	- Time demanding lead to inefficiency
Societal	- No need assessment - Only the landlords and dominant land classes were involved in government decision making	- Inefficiency - Inequality - Non-transparent and non-participatory

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 National Real Property Registration Law, which was not available during the earlier cadastral development, was issued in early 2014. This law provides rules and regulations for 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

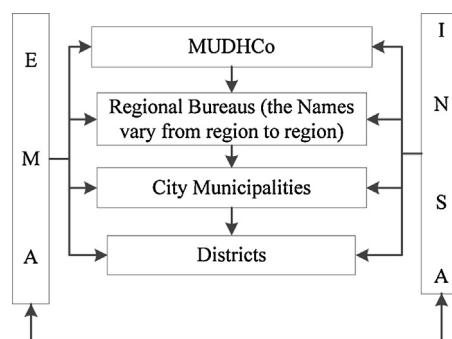


Fig. 2. Organizational integration for the contemporary urban cadastre development.

Information System Project Office for the design of cadastral systems and the National Real 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 stakeholders work in collaboration with MUDHCo and regional organizations in an integrated way (Fig. 2).

Table 2
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 - Political strain that led to civil war	- Equity in urban landholding - Disputes that led to the change of the political system - Inefficiency
Policy and legal	- To create equity in urban land and house holding - No rules and procedures regarding issues of transparency, participation	- Equity - Insecurity because compensation was not paid for landlord holdings - 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
Technical	- Traditional means of measuring land was used such as rope, footstep, stick, and so on - No computerization	- Poor data quality and time demanding lead to inefficiency of the cadastre
Societal	- No needs assessment analysis - Urban cooperatives, which includes urban people, were involved in government decision making	- Inefficiency - Sort of participatory and transparency

Table 3
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, dispute resolution and input for court cases	Serves limited role in parcel boundary identification and dispute resolution
Political	- Drivers of the cadastre development - Regional governments commitment	Donor driven The regional government lacked both technical skills and managerial confidence, and political commitment to implement the cadastre	Donor driven The city administration lacked both technical skills to implement the cadastre. Nevertheless, they managed to implement on their capacity They preferred to follow their own approach.	Donor driven The regional government lacked both technical skills and managerial confidence, and political commitment to implement the cadastre
	- Relationship with the MUDHCo - Period of managers stay on their post	The regional government was resistant and inflexible. They clashed with the MUDHCo people Managers not staying on their jobs for a long time. Three Bureau heads are changed within four years	Managers stay in their position for a long time. One bureau head is still leading cadastre activities for the last four years	As compared to the other two, there was smooth relation with the MUDHCo Managers are not staying on their jobs for longer time. Two bureau heads are changed in the last four years
Policy and legal	- Cadastral laws - Roles and responsibilities of actors	No cadastral laws. This makes cadastres in the same region heterogeneous Not in national and regional rules and regulations	No cadastral law, however, there is only one cadastre system for the city administration Not in national and city administration rules and regulations	No cadastral laws. This makes cadastres in the same region heterogeneous Not in national and regional rules and regulations
	- Type of cadastres - Geodetic Reference frame	Multipurpose WGS 84 and Adindan	Multipurpose Adindan	Multipurpose The database does not have metadata information to see the detail. However, the cadastral map has some shift with the true North
Technical	- Type of data - Spatial softwares	Spatial and attribute The geodatabase is developed using ArcGIS. The spatial and attribute data are integrated	Spatial, attribute and archival data The geodatabase runs on local customized software developed by the contractor and it integrates the spatial, attribute and archival database	Only spatial data AutoCAD software is used for the spatial part and not linked with the attribute and archival data
	- Updating of the cadastre - Place of the cadastre office	No updating It is situated within the Industry and Urban Development Bureau	No updating It is situated within Land Development and Management Bureau	No updating It is situated within Trade, Industry and Urban Development Bureau
Organizational	- Levels - Staff turnovers	The cadastre is one core process in the bureau Very high staff turnover. Only few senior staff remain after four years	The cadastre is one department in the bureau There is staff turnover, but better as compared to the other two. Most of the senior staff from 2010 remained in their post in 2013 as well.	The cadastre is now upgraded to agency level Relatively high staff turnover
	- Data sharing - Integration among and within organizations	There are no rules for data sharing There is no strong working relationship among organizations working on the urban land	There are no rules for data sharing There is no strong working relationship among organizations working on the urban land	There are no rules for data sharing There is no strong working relationship among organizations working on the urban land
Societal	- Societal need assessment - Societal and stakeholders participation	Not conducted Almost none except showing their parcel boundary during the cadastral survey	Not conducted Almost none except showing their parcel boundary during the cadastral survey	Not conducted Almost none except showing 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 the cadastre system	Little expectation from the efforts to formalize informal settlements	The current gov't commitment of the federal government to realize a functional cadastre system gives hope to the society to expect the future

Table 4
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	<ul style="list-style-type: none"> - The cadastres development was donor and technology driven, not political - Decision makers lacked managerial, technical skills and commitment to lead the cadastre - Political ambition for multipurpose cadastre without considering the needs and resources at disposal 	<ul style="list-style-type: none"> - Non sustainability - Inefficiency - Lack of commitment - Lack of capacity - Inefficiency
Policy and legal	<ul style="list-style-type: none"> - Urban land leasehold policy - Lack of national and regional rules for technical standards, data sharing and access. 	<ul style="list-style-type: none"> - Equity is one of the policy agenda - Lack of integration between systems
Organizational	<ul style="list-style-type: none"> - Lack of coordination among central, regional, local organizations - Lack of responsible institutions at higher level (e.g., ministry) to urban land issues - Lack of accountability and transparency in the organizations - Poor human resource capacity building 	<ul style="list-style-type: none"> - Poor service delivery - Inefficiency - Inefficiency - Rent seeking - Inefficiency - Poor service delivery
Technical	<ul style="list-style-type: none"> - The cadastres relied on few geodetic control points - No cadastral data updating - Various spatial software used 	<ul style="list-style-type: none"> - Poor data quality (e.g., positional shifts; a source of instability and dispute) - Decision making relies on non-current data - Difficulty of integrating the different cadastres
Societal	<ul style="list-style-type: none"> - Lack of societal need assessment - Lack of societal awareness creation - Poor stakeholders and society participation 	<ul style="list-style-type: none"> - Inefficiency of the system to address societal needs - Source of disputes especially during policy endorsement and cadastral surveys - Obstacle for implementation - Public distrust on the system - Non-participatory and non-transparent

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 lands. 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 atop in 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.

Synthesis: urban cadastres across the three regimes

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

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 lands 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 lands, were focused on political machinations. Among other core reasons, the situation ultimately led to the overthrow of the regime.

During the early EPRDF regime, urban cadastral development was neither politically nor citizen initiated (Table 4): the cadastral development program started spontaneously and in a fragmented way (see also Woldemichael, 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 level 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 4 shows that these organizations lacked financial and human resources. In addition, leaders of these organizations lacked the confidence to make 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 4). 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.

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 1). 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 2). 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 lands were made unreachable to the majority of the poor (Alemie et al., 2014) 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, real property registration, data sharing and access regimes, and responsibility and accountability for stakeholders (Table 3). 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 National Real Property Registration law issued early in 2014 is intended as the basis for creating a harmonized cadastral system in the country and improving some of the shortcomings in Tables 3 and 4.

Organizational: from few and fragmented toward 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 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 among 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 increasing a vacuum zone for rent seeking (Table 4).

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 programs 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.

Technical: from heterogeneity toward 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 (Tables 1 and 2).

In the early EPRDF, major differences existed between the cadastres of the case study cities, especially in relation to technology (Table 3): 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 neighbors 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.

Societal – an often forgotten context throughout

Decision-making on land access during the Imperial regime favored of the landlords (Table 1). 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 2). 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.

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 4). However, the contemporary cadastral development works toward improving these shortcomings (Tables 3 and 4): 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 contemporary Ethiopian context also illustrates that choosing a less ambitious design approach, with the possibility to upgrade, is perhaps 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 (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 National Real Property Registration Law, 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.

Regarding future research, a focus should be placed on developing solutions to the problems identified in each 'toolbox' element, specifically, those identified in the EPRDF case studies.

Additionally, contemporary development paradigms, particularly those in transition economies, integrate both rural and urban lands: as discussed, the implications of this approach for the context of Ethiopia also demands further investigation.

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