

A Study on the Challenges and Prospects to Establish Cadastral System using Research Methodology in Finote Selam City, Ethiopia

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Abstract: *Land and its resources have been the basis of wealth for the societies since the beginning of civilization. It has reached a stage of scarcity especially in urban areas; thus, management of such land and its resources is vital. The cadastral system widely used as a tool for managing land. The objective of this study is to assess the resources, identifying actors and capacity building level. The study employed both qualitative and quantitative approach, descriptive & cross-sectional time, and descriptive research. In order to collect the required data survey methods such as questionnaire and interview instruments were incorporated in this study. Based on the study it is observed that occurrence of certificate ownership and Tax collected from land and property was not adequate, this hinders urban socio-economic growth. It is opined that the existing resources were not adequate; it requires 29-33 different experts' and 3.3 up-to 3.5 million birr per year. For capacity building at individuals, organizational and social levels were essential to establish cadastral system. Hence, practical recommendations are forwarded to make objectives of the town to be fulfilled. To mitigate the administrative problems in establishing cadastral system the local government will give urgent attention by making partnerships with stakeholders to become cost effective and productive. As a result of non-functional cadastral system in Finote Selam town it is recommended that to take up initiative to establish cadastral system. It is suggested that a legal type of cadaster in progressive manner, it would be developed in to fiscal and multipurpose cadaster. Use low profile approach and adopting innovative source finance like collect tax from property and tax increment in land. Thus, the creation of an up-to-dated & efficient land information system can provide much to alleviate problems.*

Keywords: Land, Cadaster, Registration

1. Introduction

The land is the most important and valuable natural resources from which mankind derives almost all its basic needs. Lots of effort was carried out to administer land, of which cadastral systems were one of these efforts that are developed all over the country. Land and its resources have been the basis of wealth for most societies since the beginning of civilization. Due to urbanization, the land today has reached a stage of scarcity in the urban areas. This situation calls for the economical and efficient utilization of this resource, which makes systematic planning and management of land very important (ALGAF, 2006).

Cadastral systems should be a core component of more comprehensive land administration systems or infrastructures concerned with the processes of determining, recording, and disseminating information about tenure value and use of land when implementing land policies. A land administration system can deliver sound land management towards economic, social and environmental sustainability. The cadastral system in the society is just taken for granted, and the impact of the system in terms of facilitating an efficient land market and supporting effective land-use administration is not fully recognized. In fact the impact of appropriate cadastral system can hardly overestimate. In reality the well-tailored cadastral system is acting as a backbone in the society (Enemark, 2005). Urban cadastral systems are the most precious resources to generate and distribute valid data during land administration and

management processes, and this can be considered as a keystone for efficient operation of any state (Dawidowicz, A.; Z'róbekR, 2018).

A properly organized and regularly maintained land registration provides security and clarity with respect to the legal status of the land. This eventually leads to the improvement of property, which at the same time contributes to the growth and economic development of the city concerned. Moreover, well-functioning Cadaster is useful for effective management of land as well as setting appropriate land-related policies, coordination efforts of different agencies, generally for better urban management and development.

In the Finote Selam city, significant proportions of residents do not have title or certificate of ownership to their property, which hinders incentive to urban development as a result of this the amount of revenue collected from land and property tax is very low as compared to other sources of revenue. Although to transfer land and property (including site mapping, titling, and registration) the procedures were too long and expensive payment. So, undertaking a study on the challenges and prospects to establish a cadastral system is very important in giving direction for decision-makers and administrative body of the town. Thus, the creation of up-to-date and efficient land information and registration systems can contribute much to alleviate these and other related problems by implementing the cadastral system.

1.1 The Cadaster System in Ethiopia

According to Pankhurst (1966), the land situation throughout much of the Middle Age in Ethiopia was influenced by the absence of a permanent capital city, a factor that prevented to a greater extent the emergence of urban property in the land until the establishment of Gonder around 1636. Several short-lived capitals such as Lalibela, Debre Brehan, etc. existed only for a few reigns. A real breakthrough came only after the establishment of Addis Ababa as the capital city of the country in 1886. The emergence of new urban land tenure structure after the establishment of Addis Ababa as a capital city, Pankhurst (1966), indicated that it was Menilik II who issued the country's first urban land-related proclamation at the end of 1907, which brought legislation stating the change in ownership of the land in the city of Addis Ababa. Rapid urbanization, construction booms, and slum re-settlement programmes necessitate effective urban and infrastructure planning/development, which in turn require a secure source of funding. Addis Ababa has one such source in its rent from land/fee charges paid by building owners and businesses. The systematic levying of such requires the establishment of a complete and reliable cadaster, property registration system in which all parcels of land and buildings and their owners as well as the data necessary for city administration are documented (Tarek Zein and Hansa Luftbild AG,2013). Even though there was a sporadic effort to establish a cadastral system some time ago in Addis Ababa, as it is not updated for a long time, it is almost non-existent as a system until very recently. It was Emperor Menilik who issued a decree that brought legislation to initiate the country's first cadastral survey in Addis Ababa in 1909. Thus, landowners were to be given a certificate refereed as "yeristworaqat" or "rist-paper" to be written in Amharic and French, with a map showing the boundaries of the land. Absence of reliable land information in urban Ethiopia is in evolution and faces many interrelated challenges. Most of the city municipalities in Ethiopia are suffering from increasing difficulties to handle the demand for registering process of land transactions. As well as the rapidly changing patterns of land use associated with the accelerated urban growth this was also happening in Finote Selam. Moreover, the absence of reliable information especially land-related is the most crucial impediment for the preparation and implementation of urban plans in the town. Solomon Dargie Chekole et al 2020, has carried out a study on "An Evaluation Framework for Urban Cadastral System Policy in Ethiopia". Ethiopia,

as an implementer of two types of cadastral systems (urban and rural), there is no nationally accepted methodology that can measure and evaluate the performance of the urban cadastral system Solomon (2020).

2. Location of the Study Area

This study was conducted in Amhara National Regional State (ANRS), Finote Selam town. Finote Selam Town Administration is one of the urban centres in the Amhara region. The town is in the Mirab Gojjam Zone of the Amhara Region, which is situated between 10°- 42°N latitude and 37°- 16°E longitude and shown in fig.1.1. It is located at a distance of 376 km north-west direction from Addis Ababa and 176km from Bahir Dar a capital city of ANRS. The Finote Selam town has an average of 1250 mm and 24° C, rainfalland temperature respectively. The foundation of Finote Selam is attributed to Emperor Haile Selasie, the king of Ethiopia. Its ancient name was "Wojet" which in 1933 re-named as Finote Selam by the emperor which means "peace road" when returning from England retreatment during the Italian invasion. The major landform of the city is plane;it has two main rivers from the east namely "Lahe" from the west "kerer" and also lake "Geray". Based on the plan commission projection, according to the second edition magazineoffice of the mayor of Finote Selam city the town has a total population of 64,821, of whom30,198 (46.6%) are men and 34,623 (53.4%)

Figure1.1 Map of study area (Source: Ethio-GIS)

3. Methodology

In this study the approach is use both qualitative and quantitative research methodology. The quantitative approach was used for numerical data and collection of both primary and secondary data. Whereas the qualitative approach was used for non- numeric data such as the challenges to establishes cadastral system and other conceptual discussions. In terms of time dimension the research is cross-sectional type, because of time and limited resources, it was preferred to use survey methods of data collection by using questionnaires and semi structured interviews to arrive at general information about the issue under study. Purposive or non-probability sampling allows the researcher to pick only those who best meet the purpose of the study.



4. Results and Discussion

Resources were fundamental for establishing cadastral system in the town, it needs both qualified manpower and efficient finance resources to direct the economic development process and improve the life quality of citizens. However, the existing situation of the town clearly shows immense gap between the existing resources and demand for launching the cadastral system. On the other hand, opinions from the experts were requested during the survey to assess

respondents' attitude towards the existing resources. Accordingly, table (4.1) show that 92.9% of the respondents confirm that the existing skilled manpower and finance not satisfactory to establishing system and only 7.1% endorse the existing resources was adequate. Moreover, from the interview confirmed that the current experts' and fund source were insufficient. Therefore, the existing situation of the town resources was not sufficient to launch the cadastral system in the town.

Table 4.1: Opinions of respondents on resource

		Frequency	Percent
To implement cadastral system, does the existing manpower and finance enough?	1. Yes	2	7.1
	2. No	26	92.9
	Total	28	100

Similarly, the respondents endorse that the existing manpower and finance was not enough, for the purpose of implementing cadastral system in the Finote Selam town. The researcher has asked respondents to estimate how many different types of experts' and finance do we required for the implementation of the cadastral system. Accordingly, as shown in figure (4.1) the 50 % of the respondents estimated that 29- 33 experts and 3,225,000-3,227, 500 birrs, while

21.43% of them expressed 23-28 experts and 3, 230,000-3,232, 500 birr. It is observed that 14.29% of each respondent estimated that 34-39 experts and 3,235,000-3,237,500 birr and 40-44 experts and 3,240,000-3,242,500 birr per year were required. So, to establish cadastral system in the town it needs high amount of resource for both manpower and finance.

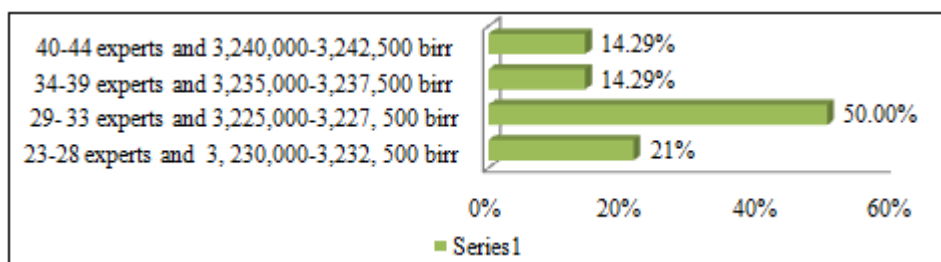


Figure 4.1: Respondents' estimation in experts' and finance.

Likewise, the researcher was requested experts to predict the type of cadastral system that depends on their use, finance, quantity, and quality of data which can be applied in the town. As figure (4.2) display that 43.48% of respondents confirmed that progressive type of cadaster was better. Whereas 26.09% of respondents ratify multipurpose type of

cadaster and 17.39% advocated that legal type of cadaster. The remaining 13.04% of support to apply the fiscal type of cadaster in the town. Therefore, progressive type of cadaster was advisable to establish in Finote Selam town. It would be developed into legal and multi-purpose cadaster when wealth accessible.

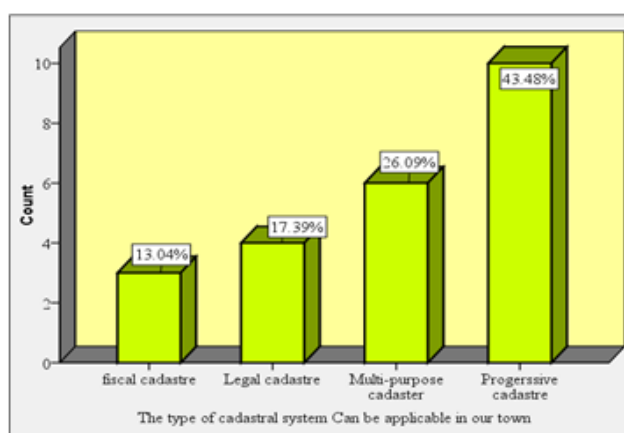


Figure 4.2: Respondents' estimation to the type of cadastral system

From the interview respondents also approved that resource although the existing office infrastructural facilities have not enough to implement the cadastral system and it needs additional office infrastructural facilities.

Based on the data result and the interview when assess the available man power in the town was not adequate and it needs additional resources around 23-28 skilled manpower's and 3,225,000-3,227, 500 birr in the annual budget with full

office infrastructure in order to start and to implement cadastral system in the Finote Selam city.

Table 4.2: Opinions of respondents in land units' legality

When we see the household in the town identified whether the land units are	Frequency	Percent
1. They are legally registered and surveyed	8	4.2
2. That are legally occupied but not registered or surveyed	22	11.6
3. That is informally occupied without any legal title.	3	1.6
4. All	156	82.5
Total	189	100

Based on the data collected and the result was obtained as given in table (4.2) the respondents 4.2% confirm that there was land units' legally registered and surveyed land, 11.6% accounts legally occupied but not surveyed and 1.6% informally occupied land units. But about 156 (82.5%) ratify all type of land parcels exist in the town. This result displays that both government and individual lose their advantages especially from legally occupied but not surveyed and informally occupied land units this also impede to urban development.

In order to get the opinion from the expert's questions were requested in order to weigh their approach towards having a title or certificate of ownership to their property for urban development. As shown in table (4.3) the experts confirmed that 96.4% of them, householders who do not have the certificate of ownership to their own land hinder encouragement of urban development.

This indicates that the establishment of cadastral system provokes to urban development although for both the government and society to get the merits. The remaining 3.6% approve that certificate of ownership cannot contribute to urban growth.

Table 4.3: Opinions of respondents on urban development

Does it house holder who do not have certificate of ownership to their property, which inhibit incentive to urban development?	Frequency		Percent	
	1. Yes	27	96.4	
	2. No	1	3.6	
ownership to their property, Which inhibit incentive to urban development? ownership to their property, Which inhibit incentive to urban development?	Total	28	100	

Finally, from the open-ended question and the interviewees, respondents explained their own attitude towards effective land administration. Cadasters have many advantages among the major one, it resolves boundary disputes, to know the urban land resources and well to administer. In addition to this, it used to confirm legal security of ownership and rise mortgaging, to collect appropriate levying of land and property tax, increase urban revenue and land developments. To avoid both land-related corruption and unaffordable land use. It also to make the decision on land use, to give effective services for customers and decrease rent-seeking. To organized land information system that use to control land transactions and transfer, to meet the require plan management in Finote Selam town.

Sound land management would help to encourage economic and social development in urban areas. Capacity building was progressively seen as a significant component of the land administration system this expected to understand the changes now towards a wider and more rounded view. Therefore, capacity building has a broader concept than just human resource development since it includes an emphasis on the overall system, environment and context in which individuals, organizations and societies function and interact.

As table (4.4) show that 28% of the respondents understand about what does mean cadaster on the other hand that 136 (72%) respondents ratify that they did not know what does mean the term cadaster. But males (18.5%) were better understanding than females (9.5%). This indicates there were a gap especially females' in recognizing the cadastral system and it needs a capacity building to establish the cadastral system in Finote Selam town.

Table 4.4: Opinions of respondents in knowing cadaster

		Sex		Total	Percent
		Male	female		
Do you know what does mean, cadaster?	1. Yes	35 (18.5%)	18 (9.5%)	53	28
	2. No	76 (40%)	60 (32%)	136	72
	Total	111	78	189	100

The second indicator is focused on to establish the cadastral system does it need a capacity building. Accordingly, as shown in table (4.5) it indicates that the respondents were asked to suggest their opinion whether essential or not to implement the system in the town.

Table 4.5: Opinions of respondents on capacity building

		Frequency	Percent
To establish the cadastral system does it need a capacity building?	1. Yes	27	96.4
	2. No	1	3.6
	Total	28	100

From table (4.6) as observed that 96.4 % of the expert respondents confirmed that capacity building was required to establish the cadastral system. To the opposite side, 3.6% of respondents replied that they did not need the capacity building to develop the system. Therefore capacity building was urgent necessity to establish the cadastral system in Finote Selam town.

The study also conducted to know the level of capacity building that will be required to make the cadastral system. As table (4.6) show that 96.4% of respondents ratify that the level of capacity building was at individual, organizational and society level. On the other hand, 3.6% of the respondent suggested that only at organizational level the capacity building were needed. Hence capacity building was necessary at individual, organizational and society level.

Table 4.6: Opinions of respondents on level of capacity building

In which level does the capacity building that need			
		Frequency	Percent
	1. At organizational level	1	3.6
	4. At individual, organizational and society level	27	96.4
	Total	28	100

From the interviewees also explained that they did not recognize much about the cadastral system and they did not take any training related to the cadastral system so far. As a result of this, it was observed that in the town to develop the cadastral system it requires extensive capacity building program at individual, organizational and social stages.

Although from the open-ended question respondents' addresses that the technologies that needed for preparing cadastral system were total station, computer, different software, UPS, Differential GPS, handheld GPS (Global positioning system), wide area network connection, generator, vehicles, surveying material, meter, Ortho photo, office material and furniture.

To establish and uphold the cadaster system the government would create partnerships with different stakeholders were crucial to implement more cost-effective and productive manners. The role of such partnerships would also support co-funding and investment.

The researcher asked respondents from the interviewees and open-ended question to put their outlooks about responsible stakeholders. Thus, they approved that government takes the lion shier. Also, non-governmental organization, private sectors, community, and the landholder were the main actors to implement the cadaster system in the town.

According to the table (4.7) indicated that 67.9% of the respondents validated that there was no problem allied to the legal frameworks to implement the cadastral system. On the contrary, 32.1% of respondents confirm that there was a problem on the legal framework. Besides the interviewees certify that there were not any legal difficulties, the local government enacted proclamation, rules regulation and directives to establish the cadastral system. This leads to there was no serious problem on the legal frameworks to establish the cadastral system.

Table 4.7: Opinions of respondents on legal framework

		Frequency	Percent
Dose it has a problem on the legal frameworks to implement cadastral system?	1. Yes	9	32.1
	2. No	19	67.9
	Total	28	100

The study applied a special interview for purposely selected sector office heads to critically examine existing opportunities and challenges to implementing the cadastral system in Finote-Selam town. The first mentioned opportunity is the existence of supporting national and international development plans including Sustainable Development Goals (SDG) specifically it has the nine goals, which adheres on the industry, innovation, and infrastructure. In addition, with the growth and transformation plan of Ethiopia, National urban land development and management policy document. The second opportunity is the presence of close collaboration and financial aid from international urban development partners like the World Bank.

Furthermore, from the interviewees and open-ended question the researcher asked respondents to suggest their attitude associated with challenges that to implement the cadastral system in the town. In which they expressed that financially problems; most of land registration activity was funded by the government this leads to the required excessive amount of budget. Institutional challenges with regard to this in order to establish the proper cadastral system in the town lack sufficient skilled manpower, absences of proper data related to land, lack of coordination between deferent actors and informal settlement was also another thoughtful problem. Moreover, modern technical devices, low level of community awareness in participating were the major challenges to establish the accurate cadastral system in the town. In the present study revenue data of five consecutive budget years (2007 -2011 E.C) were collected to examine the income gathering trends of the town from a different source of taxes. As figure (4.3) shows that the total income of the town has shown a progressive and sequential increase. The business income tax was the highest and which was the main source of revenue for the town. But levy collected from land and property tax was the lowest as compared to employment, rental, and service income tax. This displayed that the revenue gathered from land and property was not satisfactory thus a problematic to urban economic growth and narrow the tax base. The result could be emanated from deficiencies of well function land information system.

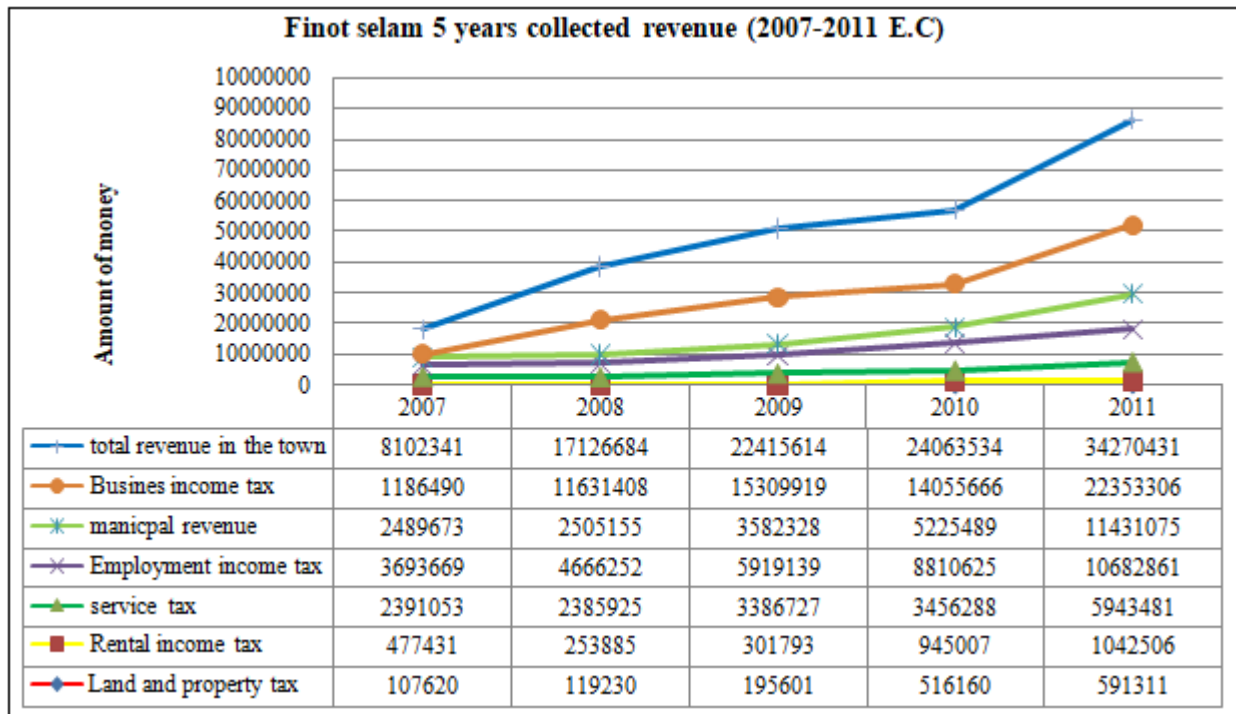


Figure 4: 3 Finote Selam town 5 years collected revenue (Source: Finote-Selam Town Municipality).

5. Conclusions

Urbanization has inevitable phenomena the rate of urbanization increasing worldwide while governments should pay systematic attention to the positive and negative effects of urbanization. However, the current fast-growing urbanization trend has brought up-to-date land information system to manage effectively land resources and use efficiently. Thus, cadaster as a tool for land management and very important for social stability, improve access to land, sustainable economic growth and increase efficient land markets. It also reduces poverty, support environmental management; promote the security of tenure and investment. While the local governments faced with challenges to establish the cadastral system in the town. This was a bottleneck for sustainable urban development.

The result of the study shows that even if the local government takes the lion shier it was not the single most actors other responsible stakeholders were existed to establish cadaster system in the town for achieving economic and social development.

To implement a progressive cadastral system in the town financial, institutional, technical, and motivational problems were the major challenges nevertheless the community prospects to be functional the cadastral system in the town would be encouraging.

It is also revealed that, the existing resources both skilled manpower and finance not satisfactory to establishing the cadastral system in the town. Therefore, it requires the approximation of 29-33 different experts' and 3.3 up to 3.5 million birrs per year budget with full office infrastructure facilities to implement the cadastral system in the Finote Selam town.

The responsible stakeholders were the government, non-governmental organization; private sectors, the community and the landholder were the main actors to establish the cadaster system in the town.

The problems that arise because of the non-existent cadastral system or inefficient land information were vast and need to be proper consideration. In the town tax collected from land and property was not adequate. It was the lowest as compared to employment, rental, and service income tax as a result it narrows the tax base. These hinder urban socio-economic development of Finote Selam. But there was no considerable difficult related to legal frame worked to establish the cadastral system that was ratified by respondents. Therefore, the establishment of the cadastral system in the town is an urgent necessity. Hence, the local government should take initiative to develop cadastral system and integrated to the federal government urban land information system at a national level.

In many respects, there is a lack of awareness and understand the proper policy to make available data to many of the urban dwellers. Thus, the local government should involve highly in capacity building towards a comprehensive and more holistic view covering at individual's, organizational and social level. In order to attract the participation of stakeholders that can increase the fund, to improve skilled manpower and creation of public awareness to know the purpose, benefits and obligatory procedures of the cadastral system and to inspire economic and social urban development.

For the establishment of cadastral system purchase of modern equipment is vital. There is a need for obtaining of modern technical devises, surveying, mapping, and data processing purposes. However, the purchase of these devices, maintenance and training costs can be extensive

hence their acquisition should be planned in a phased manner. Moreover, selecting the type of cadastral system should be based on an analysis of institutional, economic, financial, and technical considerations.

Adoptions of the innovative source of finance: It is advisable, to use innovative financial instruments such as collect tax from the property, tax increment in and, use low-cost or low-profile approach that is seek financing more directly from the user by making the customer pay or reducing the coast of the government. The cadastral organization are to be selling their information it is essential to clearly define and prescribe the ownership of the information associated copy-right rules and the responsibility for maintaining quality. As well as making public-public and public-private-partnership for establishing sustainable land information system.

The government should review existing proclamation, rules, and regulations particularly land-related in order to implement the cadastral system more easily and with a short period of time overall at the national level.

Finally, every effort to establish a cadastral system should gain the political support of authorities at every stage. Therefore, the tools should be settled as to how to make aware concerned body and the public on the purpose, significant and responsibility of the cadastral system for urban development.

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