

Role of Private Surveyors in Cadastre: The Turkish Case

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SUMMARY

Modern cadastre is not only a register of real estate but also a database for such activities as valuation, taxation, mortgage, agricultural product management. The growing demand for cadastral information has increased the workload of cadastral authorities in recent years. This situation has strained the capacity of those authorities and eventually facilitated private sectors' involvement in cadastre. The Turkish cadastre also takes its share from this privatization process for the purposes of completing and updating cadastral records in a short period of time and providing better, faster and flexible services in general. The governments no longer want to be the "doer" in cadastre, but to be the "controller" instead. Although cadastral works were started in 1923 in the country, the surveys and registries had not been completed until 2003 by the relevant authorities. In order to finalize the initial cadastral works, the General Directorate of Land Registry and Cadastre (GDLRC) commenced a new tendering process in 2004. In this process, cadastral works have been carried out in many areas by contracting surveying companies under the supervision and control of the GDLRC successfully. However, when it came to the privatization of cadastral surveys completely, it brought concerns about the reliability issue of private surveyors. Therefore, to provide a legal status to this issue, the Act about Licensed Offices of Surveying and Cadastre was enacted in 2005 in order to accredit surveyors who could perform cadastral services in the name of state and provide a certain security. According to the Act, accreditation of private surveyors requires written and oral exams, work experience and certain legal prerequisites. In this paper, the role of private sector in cadastral works is analyzed generally, and then the evolution process of cadastral services in Turkey is discussed together with scrutinizing the roles and duties of unlicensed and licensed private surveyors by means of literature review and statistical data.

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1. INTRODUCTION

Land registration and cadastre are fundamental elements of numerous public and private services such as recording real property ownership, taxation, city planning, agricultural management and geographic information systems. There are various approaches in different jurisdictions in the world in terms of cadastral systems. In recent years, it has become clearer that collecting and managing geo-referenced spatial data is critical for diverse needs such as legal issues, economics, built and natural environment. It is acknowledged that having the whole cadastral records at hand can give authorities superior powers in many different areas and enable them provide sustainable development. By saying the whole cadastral records, it means that having all cadastral records of real estate in the country without any separation of public or private property.

From the title registry perspective, there are two main types of registration systems in the world: deeds registration and title registration. The main difference between these systems is that the deeds registration recognizes legal documents as “chain of deeds”; while the title registration recognizes registration of the titles that are recorded by relevant authorities, and these records are protected and guaranteed by the state. There may be advantages in both systems; however title registration system seems to become more popular in recent years because of its obvious advantages in terms of cadastral data acquisition and maintenance. The obligation of registry in the title registration system provides an unescapable reason to record all kinds of parcels in a jurisdiction, whether they are public or private (Rajabifard, Williamson, Steudler, Binns, & King, 2007), and this establishes a powerful basis for proper land management system.

Because of the increasing demand on cadastral information together with the developments in construction sector, urban and rural economies require differentiated needs. As the speed of implementation and accuracy concerns rise, the need for competent technical personnel increases too. Therefore, the answer of the question of who will provide these services becomes critical.

Although it may be difficult to separate cadastre from land registry, this paper primarily focuses on technical services of cadastre and analyzes the role of private surveyors in the world and in the Turkish cadastral system.

2. ROLE OF PRIVATE SURVEYORS IN CADASTRE IN THE WORLD

The “Cadastre 2014” report of FIG Commission 7 which was published in 1998 (Kaufmann & Steudler, 1998) established a common language for the matter, and helped the idea of private sector involvement in cadastre gain ground. Statement 5 says: “*Cadastre 2014 will be highly privatized! Public and private sector are working closely together!*”. Today different jurisdictions have different systems in terms of who performs the cadastral works. As this study focuses on the role of private surveyors in cadastre in Turkey, it is required to view where the word is in this subject. Instead of giving details of every country in the world, few countries are explained in detail but the cadastral systems of many other countries are listed in Table 1 by showing who performs these works, i.e. public or private, in that list.

In Denmark, the cadastral system is based on fixed boundaries, and cadastral registers and maps are managed by the National Survey and Cadastre. Survey measurements and boundary surveys are performed by private licensed surveyors. The land registry records are maintained in local courts. The private and public sector collaborate to establish a digital cadastral database. Licensed surveyors are authorized to carry out all subdivisions or other shape-changes of parcels. One another important aspect is that when subdividing a land parcel, public landowners just like private landowners need to go to a private licensed surveyor. Surveyor’s license is issued by the Ministry of Environment. In order to obtain a license, one must have a university degree; master’s degree on surveying, planning and land management; and also must have a work experience of three years in a private surveying firm. Private licensed surveyors’ activities are regularized by the Survey Act in the county. Survey applications that are prepared by private licensed surveyors are submitted to the National Survey and Cadastre for approval. After approval, the documents are sent to local land registry offices to update registry records and to other relevant authorities. In addition to cadastral works, private licensed surveyors perform engineering surveys and mapping and also offer consultancy on real estate issues (Country Reports, 2003; Enemark, 2006).

In the UK, there is no parcel-based cadastral system. Although the land registration system has been shifted from deeds registration to compulsory title registration, “initial cadastre” surveys are not performed in the UK. Instead, cadastral records are left to sporadic events (such as sale, lease or mortgage) that trigger the first registration. Thus, there is no timetable for the completion of cadastral records, because it continues with sporadic transactions. According to Grover (2008), few British surveyors know what a cadastre is, therefore in discussions you need to explain them what it is (Country Reports, 2003; Grover, 2008).

In South Africa, the deeds registration system is in use. Cadastral surveys are done by the private sector. Registered private surveyors perform their surveying services and submit their documents for approval to Surveyor-General who is appointed by the relevant Minister, after approval, conveyancers submit approved documents to Registrars of Deeds for the registration (Chimhamhiwa, Mutanga, & van der Molen, 2011; Country Reports, 2003).

In Sweden, all cadastral works are carried out by Lantmateriet which is a governmental authority therefore private sector is not involved in cadastral services. Title registration system is in use and Lantmateriet is also responsible for the land registry. There are four types

of registry in Sweden: real property registry, land registry, building registry, apartment registry (Country Reports, 2003).

In Australia, most of the cadastral surveys are performed by private surveyors. It is a requirement for private surveyors to obtain a license (depending on the qualification standards of the federal state) in order to carry out cadastral surveys, however, there is no requirement for a license or certificate in order to perform other type of surveys such as construction surveys. It is the government responsibility to maintain the geodetic network of the country, however the updating and improving the system is generally outsourced to the private surveying firms (Country Reports, 2003).

In 2003, under the support of the UN-sponsored Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) Working Group 3 on Cadastre, the Cadastral Template Project was completed (Country Reports, 2003). It has collected data from 47 different cadastral systems in the world concerning their cadastral preferences. Cadastral profiles of the 43 countries can be viewed on its website. According to the information given in the website, a list is developed for the private sector involvement within those jurisdictions in Table 1.

Table 1. Private sector involvement in cadastral services (Country Reports, 2003)

Country	Sector	Country	Sector
Argentina (2003)	Private	Kiribati (2003)	Public
Australia (2010)	Private	Latvia (2013)	Private
Austria (2014)	Private	Lithuania (2010)	Public-Private
Belgium (2003)	Public-Private	Macao (2003)	Public
Brunei (2003)	Public-Private	Malaysia (2010)	Private
Bulgaria (2010)	Private	Namibia (2004)	Private
Cambodia (2003)	Public	Nepal (2003)	Private
Cyprus (2010)	Public-Private	Netherlands (2010)	Public
Czech Republic (2014)	Private	New Zealand (2003)	Private
Denmark (2010)	Public-Private	Norway (2007)	Public
Ethiopia (2011)	Public	Pakistan (2012)	Public
Fiji (2003)	Private	Philippines (2003)	Public-Private
Finland (2009)	Public-Private	Poland (2012)	Public
Germany (2003)	Private	Slovenia (2010)	Private
Hong Kong (2010)	Private	South Africa (2010)	Private
Hungary (2010)	Private	South Korea (2014)	Public
India (2003)	Public	Sri Lanka (2013)	Public-Private
Indonesia (2003)	Public-Private	Sweden (2011)	Public
Iran (2003)	Private	Switzerland (2014)	Public-Private
Israel (2006)	Public-Private	Tanzania (2005)	Public-Private
Japan (2013)	Private	Uzbekistan (2003)	Public-Private
Jordan (2003)	Private		

Table 2. Involvement types in cadastre (Country Reports, 2003)

Involvement	Number of Countries	Percentage
Public	11	26%
Private	19	44%
Public-Private	13	30%

Even though some of the countries have similarities, almost every country has a unique cadastre and land registry system based on their historical background, legal basis, institutions and traditions. It may be difficult to drive a conclusion from the statistics above, however the percentages of the three involvement types can yield some trends in the world (Table 2). According to it, cadastral services are carried out by the private sector in the 44% of the countries in the list. In 26% of the countries, cadastral services are performed by the public sector and the remaining 30% has the public-private sector collaboration. Today, Turkey falls into the last group.

3. CADASTRAL SERVICES IN TURKEY

The “title registration system” is in use in Turkey. According to the Turkish Civil Code, property rights become valid if they are registered in the land registry records. This is a very distinct character of the title registration system that differentiates it from the deeds registration system. Cadastral surveys on the other hand are carried out according to the *Cadastre Act 1987*. The purpose of the Act was renewed in 2005 and it is now defined as “Building the infrastructure of spatial information systems; establishing land registry records; determining legal status and boundaries of lands both on maps and on earth, based on cadastral maps in accordance with the national coordinate system.” According to the Act, General Directorate of Land Registry and Cadastre (GDLRC) is responsible for carrying out cadastral services in Turkey. The GDLRC performs its cadastral services in the country by the hands of its local directorates. The service area in the country is divided into 22 regional directorates. These regions are also divided into 81 local cadastral offices that report to the regional directorates. The number of local offices and their personnel are listed in Table 3. From this fact, it can be seen that land registry and cadastral services are carried out in two different local directorates of the GDLRC in the country. The cadastre directorates perform surveying related services, while land registry directorates are responsible for land registry records of property rights (Table 3).

Table 3. Number of directorates and personnel of the GDLRC (TKGM, 2013)

Offices of the GDLRC	Number of Offices	Number of Personnel	Number of Technical Pers.
General Directorate	Headquarter	1131	212
Regional Directorates	22	1464	329
Local Directorates of Land Registry	957	10230	744
Local Directorates of Cadastre	81	5514	4142
TOTAL		18339	5427

There are various services that are performed or inspected at the local directorates of the GDLRC. Without considering who performs these services, all the services that are carried out or inspected can be categorized into three groups: initial cadastre, sustainment of cadastre and non-registered services. These terms will be highly used in the following chapters (Fig. 1).

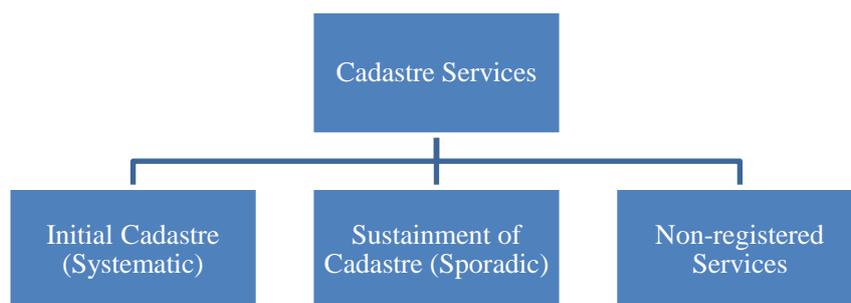


Fig. 1. Categories of cadastral services in Turkey

“Initial cadastre” can be defined as the survey and registration of real estate and its rights in a predetermined area for the first time, i.e. systematic adjudication. According to the law, it is carried out by a cadastral team consisting of two survey personnel of the GDLRC, a headman of neighborhood or village, and three local experts. Survey personnel perform the measurements of the lands and prepare cadastral maps, and headmen and local experts help for determining the legal parts, such as ownership rights.

“Sustainment of cadastre” in the Turkish context can be defined as renewing and updating cadastral information and documents that change in time (Erkan, 2010), i.e. sporadic adjudication. Changes in shape and legal status on real estate, or errors in previous cadastral surveys require updating and renewal. Improvements in surveying technology have also similar effects on cadastre because high precision survey instruments easily outpace the older technology by offering speed and more accurate coordinates. The most common services performed under the “sustainment of cadastre” category are:

- a. subdivision of parcels
- b. consolidation of parcels
- c. development plan implementations
- d. establishment or abolishment of easements
- e. changing land-use types
- f. renewal of cadastre
- g. and others

Non-registered services do not require any changes in the registry records. Boundary survey or other related surveys can be categorized in this section. Natural or legal persons or public authorities can require these services. Demarcation of parcels or determining the position of a building to be constructed can be some examples. Producing title plans and providing technical information are some other examples.

3.1. Increasing Participation of Private Sector in Cadastre

Because of the increasing demand on cadastral services, the GDLRC started to transfer some parts of the works on to private sector in the past. The easiest one to hand down was the non-registered services. These services have been done not only by the GDLRC, but also private

surveying offices, and even by people who do not have surveying education and formal qualification but learned themselves by working at a surveying office. Although the reliability of the latter can be questioned, still many people, especially in the rural, asked services from non-qualified surveyors for simple boundary surveys because of their affordable service fees. From this information, boundary surveys might sound like a shoddy service, however their importance and severity will be explained in the following chapters.

The second phase of the handing down process included the services in the sustainment of cadastre category. According to the regulation, surveyors who want to open a surveying office or company, or want to sign legal surveying documents must be registered to the Chamber of Survey and Cadastre Engineers (CSCE) in Turkey which is the professional board of surveying engineers. Therefore the CSCE has recorded surveyors since 1954. In order to understand the increasing number of the private sector surveyors, the number of registered surveying engineers and surveying offices/companies for specified years were taken from the CSCE for the last couple of decades. According to the statistics, the number of registered surveying engineers increased between 21-33% around every 5th year from 1985 to 2014 (Fig. 2). Although these numbers include private, public and even retired surveyors too, private surveyors had more reasons to be registered because of the obligation of registration when opening a surveying office. In 2014, the total number of registered surveyors was 13227 people and it included surveying engineers not only in cadastral services, but also in all kinds of fields such as construction surveying or real estate appraisal. However, it can be said that the majority should be in the surveying and cadastral services because surveyors in the fields other than cadastre generally do not need to register to the CSCE and pay a membership fee every year. Another important thing here is that in Turkey there are surveying technicians as well, and since there is no professional chamber for those, we do not know how many surveying technicians are out there. In cadastral services, surveying technicians can also perform surveys, however if these services require a change in the land registry, then a surveying engineer should sign their documents in order to accept the responsibility according to the laws.

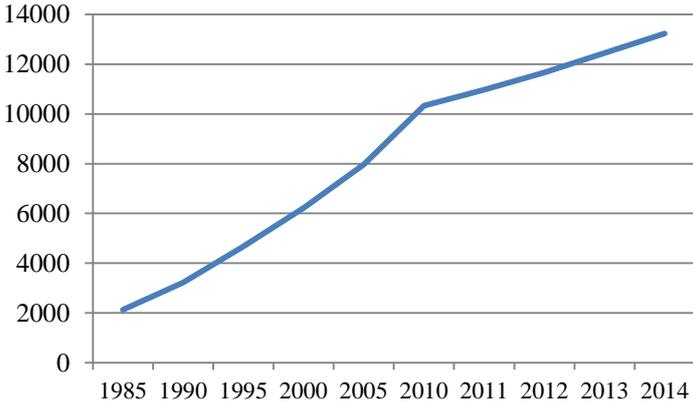


Fig. 2. Number of Registered Surveyors in the CSCE in Turkey (CSCE)

The second statistics is about the number of private surveying offices and companies (Table 4, Fig. 3). This figure is actually a more powerful indicator that how the interest on surveying and cadastral services in Turkey have increased because the services of the sustainment of cadastre require the signature of an owner of a surveying office or company (who must also be a surveying engineer). Engineers without an office are not allowed to take the responsibility of a work in the initial cadastre or sustainment of cadastre category. The number of surveying offices and companies for the specified years are taken from the CSCE. However there is no information about the number of employees in those offices and companies.

Table 4. The number of surveying offices and companies in Turkey (CSCE)

Year	Number
1960	2
1965	2
1970	2
1975	12
1980	43
1985	94
1990	229
1995	591
2000	1152
2005	1536
2010	2142
2011	2309
2012	2484
2013	2787
2014	3241

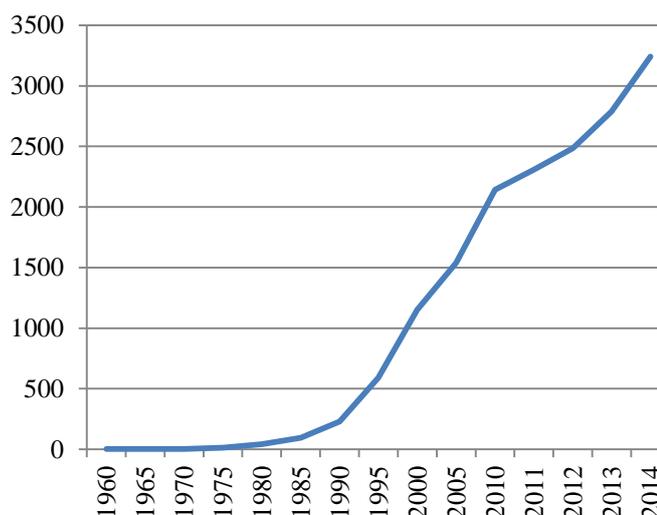


Fig. 3. Number of Private Surveying Offices and Companies in Turkey (CSCE)

3.1.1. Transferring Technical Parts of “Initial Cadastre” to Private Sector

Although the cadastre was always seen as a public work, according to the *Land Title Act* enacted in 1934, technical parts of cadastre could be outsourced to the private contractors (Çete & Uzun, 2005). The renewed version of it, *Cadastre Act 1987, Clause 39* (concerning initial cadastre and tendering) made a similar arrangement about tendering option. It says that “*The GDLRC, after the approval of the relevant Ministry, can put the technical parts of the cadastre out to tender.*” However this option hadn’t been used for a long time.

The need for the completion of the initial cadastre increased to the highest point in the early 2000s and it went into the 8th Five-Year Plan 2001-2005 of the State Planning Organization. According to the plan, “necessary arrangements should be made in order to make sufficient use of the private sector in mapping, cadastral and land registry services” (Akçın & Kamalak, 2011; DPT, 2000, 2001). Together with this vision, the participation of the private sector in initial cadastre finally started in 2004 and continued to gain ground thereafter within the framework of the Completion of Cadastre Project of the GDLRC. From 1923 to 2003, the cadastral units of 39319 (cadastral units are defined as neighborhoods and villages) were

completed that makes 350 units per year. After the commencement of the private sector involvement from 2004 until today, 12734 cadastral units were completed by directorates of cadastre and private companies and 12263 of which (96%) were done by private companies. Considering that there are 52439 cadastral units in total in Turkey, 24% of the cadastre of whole Turkey was completed within last ten years (TKGM, 2015). Around 1750 units per year were surveyed within the initial cadastre/renewal of cadastre projects since 2004. The productivity per year increased 500%. By this completion project, the costs were dropped; an electronic format was developed that functions better in information systems. According to the Annual Report in 2013 of the GDLRC, only 1.1% of the cadastral units of the country is left to be surveyed and to be registered (Table 5).

Table 5. Completion of Cadastre - 2013 Annual Report (TKGM, 2013)

	Completed	Ongoing	Remaining	Problematic	Total
Number of Units	51823	210	87	300	52420
Percentage	98.86%	0.40%	0.17%	0.57%	100%

After the completion of the problematic areas, the process of initial cadastre will be over. However, the services of sustainment of cadastre will always continue because of the never-ending process of the changes on shape and ownership of real property.

3.1.2. Transferring Services of Sustainment of Cadastre to Private Sector

In the past, all kinds of cadastral services were done by the personnel of the GDLRC. In time, those services were started to be transferred to the private sector step by step. This handing-down process however started much earlier than the tendering process of the initial cadastre started in 2004. However it should be noted that it has always been a rule of thumb that the services that cause a change in the registration have to be inspected by the GDLRC. The regulations and notices that were made by the GDLRC to its local directorates can show how this handing-down process took place in time.

Date: 06.08.1973

Regulation concerning Maps and Plans that are Subject to the Registration:

According to this regulation, cadastral maps and plans that were subject to the registration (sustainment of cadastre) were required to be inspected by local cadastre directorates of the GDLRC; however there was no specific addressing about who could perform those services, i.e. public or private. Considering that there were only two private surveying offices in whole Turkey until 1970, the services had to be performed by public authorities.

Date: 13.04.1989

Instruction about Changes in Cadastral Maps and the Implementation of the Regulation concerning Maps and Plans that are Subject to the Registration:

In this instruction, the distinction between the services of public and private sector was made:

- a) Cadastre Directorates of the GDLRC:
- Subdivision of parcels
 - Consolidation of parcels
 - Changing land-use types
 - Establishment or abolishment of easements
 - Correcting technical errors
 - Boundary survey and demarcation
- b) Private Sector:
- Land readjustment projects
 - Development plan implementations
 - Forestry mapping and etc.

It seems that the services that could be time consuming were left to the private sector. Of course, their inspection was always made by the GDLRC. Boundary surveys or demarcations could be done by private surveyors as well. There was no prohibition about it.

Date: 23.02.1993

Instruction about Revolving Funds of Directorates of Cadastre:

According to this Notice from the GDLRC to its local directorates, the cadastral services were divided into three parts and a new term was adopted: on-demand services.

- a) On-demand services performed by the GDLRC:
- Boundary survey and demarcation
 - Consolidation of parcels
 - Establishment or abolishment of easements
 - Changing land-use types
- b) Services performed by relevant bodies but inspected by the GDLRC:
- Subdivision of parcels
 - Contribution of lands for roads, reestablishment of parcels from abolished roads
 - Demarcation maps
 - Land readjustment plans
 - Development plan implementations
 - Expropriation maps and etc.
- c) Other on-demand and non-registered services provided by the GDLRC:
- Preparation of title plans and technical information

The difference from the earlier Notice was that this time the GDLRC handed down the service of subdivision to the private sector as well.

3.2. Emergence of Licensed Offices of Surveying and Cadastre (LOSCs)

As explained in the previous chapter, by the 1993, other than their core responsibility of inspecting cadastral works, the personnel of the GDLRC had only performed (as the doer) consolidation of parcels, establishment of easements, changing land-use types, boundary surveys (and showing parcels without a survey) and some other basic services such as producing copies of cadastral and title plans and providing technical information for court requests. These were the only services left for the GDLRC personnel to carry out and they are all on-demand services. The first three of them are in the sustainment of cadastre category; the others are not because they do not require registration.

As the policy of the state about the cadastre shifted from “being doer” to “being inspector” entirely in 2005 in order to enable faster and elastic services, the remaining services of the sustainment of cadastre category in the hands of the GDLRC were too required to be transferred to the private sector. This has raised concerns about the reliability issue. However, if the services of the public and private sectors until that point are compared, it can be thought that there are no obvious differences between the two, in terms of security. Why would subdivision of parcels or land readjustment projects (which are one of the most critical applications because of their potential on changing ownership rights of parcels) could be done by private sector without any concern of reliability, while it is inconvenient for them to perform boundary surveys, consolidation of parcels, establishment of easements and changing land-use types; and even though the GDLRC inspects all of the services anyway? Why the GDLRC did not leave them all to the private sector, and still keep its inspecting power in hand?

The authors think that the main reason for this may be because of the unique value of boundary surveying and demarcation services which will be explained in the follows. Boundary surveys could be done by both private sector surveyors and the GDLRC personnel. However, boundary survey incorporates a special value in boundary disputes. When boundary disputes were taken to the courts, judges recognized (and still do) the GDLRC as the ultimate authority about this matter. Therefore they always requested boundary surveys from local directorates of the GDLRC. The second is that most people recognized boundary surveys of the GDLRC personnel as “legal” or “official”. They valued and respected boundary surveys of the personnel of the GDLRC more than private surveyors due to conflict of interest of the private sector. It is expected by many people that since the GDLRC is a public authority, its personnel should be more fair-minded than private surveyors. Of course people trusted private surveyors and asked boundary surveys from them all over the country in peace times, but when it came to boundary disputes of two neighbors, the worries about the conflict of interest were setting in, therefore the personnel of the GDLRC were called to have the final say and resolve the conflict. Their survey then became “legal”. In most times, the contribution of the GDLRC ended the disputes. However, if the sides were not happy with the survey of the GDLRC either, they could still go to courts and ask for further investigation but this was a time consuming and costly process, so in most cases people agreed on the surveys of the GDLRC. Therefore people, courts and public authorities wanted to see the GDLRC in boundary survey and demarcation services. A decision of the GDLRC about abandoning boundary surveys could cause a gap that could not be filled.

Then, how do you privatize a public service and still provide a public legitimacy attached to it?

The answer of this question is probably one of the main reasons why “licensed surveyors and surveying offices” have emerged in Turkey based on the *Act concerning Licensed Surveying and Cadastre Engineers and Offices 2005*. According to this new plan, the GDLRC could then transfer its application power over chosen private surveyors and their offices by giving a “license” that could differentiate them from the rest of the thousands of regular private surveying offices/companies and attach them a public institution legitimacy by putting T.C. abbreviation which stands for Türkiye Cumhuriyeti (Republic of Turkey) at the top of their office signs and stamps, and recognize licensed surveyors as civil servants in some aspects that is backed by the law. This private-public officer now then works without any work-days and work-hours restrictions like a private firm, and still has to obey certain rules such as obeying the price list of their services determined by the GDLRC like a public organization. This approach can be considered as a unique and subtle way of combining the advantages of the public and private sectors together, and furthermore, it can be an example for many service areas in the public sector that needs to be privatized in a controlled manner.

After concluding the importance of boundary surveying, then what about the remaining three services which are consolidation of parcels, establishment of easements and changing land-use types? Why were they too required to be transferred to the licensed offices of surveying and cadastre (LOSCs), rather than regular surveying offices? For example, there seems to be no special value on land consolidation service since it is much simpler than the subdivision in terms of technical workload and accuracy. Subdivision incorporates many technical concerns and regulations such as minimum parcel size, road width, and parcel depth; while consolidation is almost as simple as deleting the line between two parcels on a map and unite them. Why would it be required to be performed by the LOSCs? The reason for this should be that transferring only boundary surveying and demarcation to the LOSCs would not be economic enough for the LOSCs to survive. Service fees of boundary surveys probably would not provide enough income for the LOSCs to keep them feasible. Therefore, it is concluded by the authors that the GDLRC transferred the boundary survey and other three services to the LOSCs as a package, to keep these offices alive. Otherwise, if it was not profitable for the licensed surveyors, then they could resign and close down their offices and the process could be a failure.

According to the Act, licensing requires certain conditions for the applicants which are: being registered in the Chamber (CSCE), work experience of 5 years as a surveying engineer in the public or private sector, succeeding in the licensing examination and some additional conditions. Licensing exam can be in written only or written and oral together. After succeeding in the exams and fulfilling other requirements, surveyors can receive their licenses and open their LOSCs in predetermined locations in the country. Today there are 195 LOSCs situated in all over the country (TKGM, 2015). Service requests to directorates of cadastre are immediately directed to the LOSCs. Unlike regular surveying offices in Turkey and licensed surveyors in some other countries (such as Denmark), the LOSCs can only provide services that are defined in the regulation of LOSCs, which are restricted to boundary surveys,

consolidation of parcels, establishment of easements and changing land-use types at the moment. The LOSCs are forbidden from carrying out any other type of commercial activity.

Lastly, the term “licensed” can have many different meanings in different jurisdictions. License could mean having a university degree in surveying; it could mean being registered to surveying institutions or boards; or it could also mean having a privileged representation of a public authority. The last one is applied in the Turkish context. The licensing process of a surveying engineer in Turkey is shown in Fig 4.

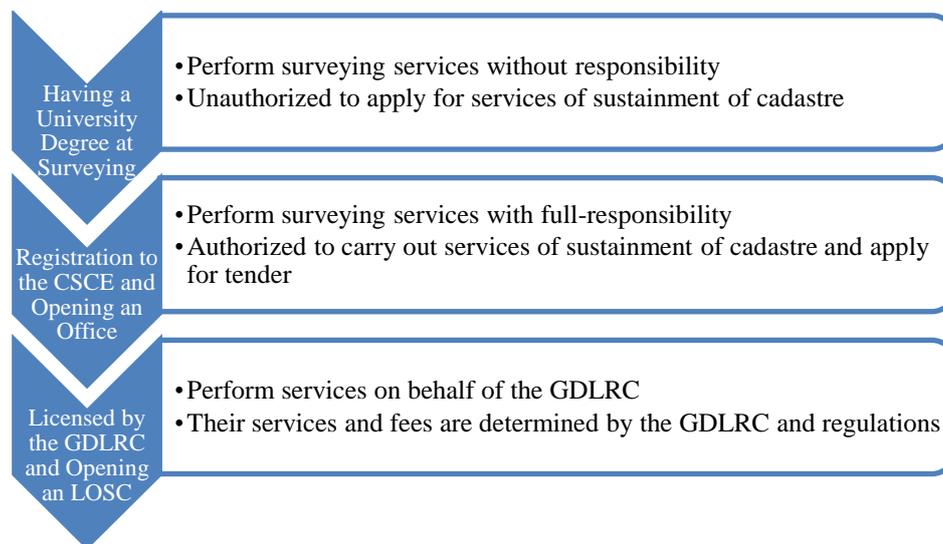


Fig 4. Different types of qualifications of surveyors in Turkey

Therefore licensing a surveyor in the Turkish context does not mean a university degree, nor does it mean a registration to a professional board. It actually means a privileged representation of the executive power of the GDLRC in predetermined administrative boundaries of a city.

4. CONCLUSION

An ingrained recognition of cadastre as a public service of the GDLRC in Turkey has changed in time. In this study, the step by step process of “handing-down” of the technical parts of the cadastre from the public sector to the private sector was analyzed. Considering the increasing workload of the GDLRC starting from the 1970s, how desperately it needed to transfer the services to the private surveyors can be understood. The number of private surveying offices/companies exploded during the 1970-2005 period (2005 is the year of the enactment of the Act about licensed surveyors) from 2 offices in 1970 to 1538 offices in 2005 within 35 years (Table 4 above). This explosion of private involvement can also be related to the significant construction boom in the last few decades. Therefore, services in the category of sustainment of cadastre have been required more in urban areas than in rural areas due to the fact that urban land is vibrant in terms of sales and construction while rural land is more static.

A distinction needs to be made between the two types of services of the GDLRC. The first group is for “performing” of services, and second group is for “inspection”. The privatized services mentioned in this paper are only the services to be “performed”, i.e. executive side of the GDLRC. The inspection side has always been a constant duty of the GDLRC, therefore it has never been privatized or there has never been any serious attempt on this issue.

Another distinction is made between “initial cadastre” and “sustainment of cadastre”. The difference is that the initial cadastre services are performed within a program in a predetermined area with a timetable, therefore those can be called “projects”. For this reason, outsourcing, i.e. tendering, can be made for the surveying part of those projects. However services in the sustainment of cadastre category are on-demand and sporadic activities, so tendering cannot be the case. It can either be left to the private sector, or be kept by the state. Due to the reasons explained above, the transfer of those services from the public to the private was made step by step in Turkey, each time leaving some parts to the private sector. In 2005, there were only four main services left in the hands of the GDLRC: boundary survey, consolidation of parcels, establishment of easements and changing land-use types. These services can actually be accepted simpler than the ones left earlier to the private sector in terms of technical knowledge and workload. However, due to the importance of boundary surveying as explained, the GDLRC could not abandon it. Therefore a “licensing” procedure has been developed in order to accredit surveyors who could carry out the boundary surveys together with the remaining three services on behalf of the GDLRC. By this, licensed offices of surveying and cadastre (LOSCs) were established. These offices now combine the elasticity of the private sector and security of the public sector. This public-private partnership can be accepted as a smart way of combining the advantages of the two sides and can be an example for other fields of the state that are needed to be privatized under regulations and within boundaries.

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