

Full Length Research Paper

Cadastral services in Turkey within the framework of new public management

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Central, national, political-managerial actors and the organization, processes and personnel structure of the public administration are changing within the framework of the new public management paradigm that envisages the superiority of private sector and private sector management techniques over the public sector. Restructuring of public management has been put on the agenda in 2000s in Turkey and various regulations have started to be established accordingly. In this process, new expansions have been made in the roles of the cadastre sector -which is considered to be a traditional public service- by bringing new legal and public regulations. The most significant step taken in this regard is the purchase of technical services from the private sector and handover of demand-oriented tasks (amalgamation, position determination, type variations etc.) conducted by the General Directorate of Land Registry and Cadastre (TKGM) to the licensed private measurement offices. Therefore, thanks to its reduced work load, TKGM uses all its facilities to establish a guiding, supervisory and spatial information system. This study analyzes the advantages and disadvantages of private-sector involvement in providing cadastral services in Turkey. Various options for the role of the private-sector are examined.

Keywords: Cadastral services, New Public Management, private sector, Turkey.

INTRODUCTION

In a rapidly changing and globalizing world, it is inevitable that changes and restructuring occur in the understanding of classical public administration. The factors that trigger these changes and developments can be listed as the changes in the theory of economics, changes in the theory of administration, competitive structure of the private sector and its progress, social criticism and the development of civil society as a result of a demand for change. Social roles and functions of the public administration, the methods to be applied in the course of playing these roles and the institutional structures to be formed have recently been put on the agenda in line with the above-mentioned theoretical and real changes (Yılmaz, 2008).

As a result of the above-mentioned related to thought

changes and developments, the New Public Management (NPM) concept was proposed in the 1980s, which was regarded as a new paradigm at the time. The NPM approach is generally considered to be a perspective based on bureaucratic critics, which is the primary principle of public administration organization. In current situation, bureaucracy is based on complex, determination-oriented, rule-premised systems that include highest decision-making processes and that distract people from their expectations. The NPM movement envisions the superiority of the private sector and private sector management techniques over public sector and public administration (Metcalf, 1989). In this term, NPM is considered to be an internal endeavor of central, national and political-managerial actors to change and restructure the actual public sector, its processes and personnel regimes (Hood, 1991; Christensen and Legreid, 2002).

The NPM term was first used in the early 1990s in order to state public reforms in England and New Zealand.

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Increased debts of OECD countries; external environmental changes which OECD put on the agenda; delegation of authorities; and internationalization concept have brought the necessity to make changes to the public sector and to ensure its compliance with the new developments. Multinational structures like OECD, World Bank and International Monetary Fund have been effective in the spreading of the NPM concept throughout the world (McCourt, 2002; Talbot et al., 2000). This trend is evaluated as an important indicator of the extension of the NPM concept in the future in many more countries (Özer, 2008). The reform agendas of the above-mentioned institutions are determined by the factors such as “liberalization”, “avoidance of bureaucracy”, “privatization”, “budget reforms”, “performance measurements” and “competition” (Minogue et al., 1998).

These changes, which necessitate the redefinition of the public role, particularly support the trends toward privatization, civilianization (non-governmentalization) and localization. Public institutions do not continue their services in the fields in which the private sector makes more effective production. Today, even the fields which were previously controlled by the government, which was considered as “natural monopoly”, are now handed over to the private sector on the condition that regulatory boards are established. The local administration concept is becoming more popular than the central management structures (TBMM, 2008).

Some of the primary objectives of the new public management are the delegation of managerial authority, output control, separation and restructuring of units, emphasis on market and half-market oriented mechanisms, customer-oriented compliant service understanding and achievement of effectiveness and efficiency by utilizing private sector techniques (Hood, 1991; Christensen and Løgreid, 2002; OECD, 1995; Yamamoto, 2003).

The necessity of a comprehensive restructuring in public administration has been discussed for long years within the scope of the increasing and varying demands of Turkish people and the need to increase effectiveness and participation. The restructuring processes in the public administration take their roots from the attempts made in 1930s and 1950s. These attempts were followed by the project “Research on the Organization of Central Government” in 1960s. In 1988, within the scope of the 6th Five-Year Development Plan, KAYA Project (Public Administration Research Project) was prepared to put on the agenda the concepts of “compliance with European Union” and “citizen-orientedness”. Restructuring studies were also conducted within the scope of the 7th Five-Year Development Plan covering 2001-2005 period. However, Turkey failed to keep pace with the world-wide change process that gained momentum in the 1990s. The “first wave” structural reform policies which were pursued in 1980s and targeted at abolishing the obstacles could not be completed by the “second wave” structural reform policies which provided for restructuring and which were

more difficult to put into practice. Rather, the reforms were focused on “abolition of the obstacles and liberalization”, however, the reforms meant to redefine the role of the state and to ensure restructuring could not be successfully implemented (TBMM, 2008).

As a result of the great developments in technology, social changes, globalization, the increase in business relations resulting from legal and environmental factors and the changes in public administration understanding have caused a pressure on traditional cadastral systems. The main reason behind “Cadastre 2014 Vision” is the need to reform the Cadastre system. One of the main results of this vision is that “The importance of cost recovery and privatization problems increases in cadastral terms. Although public duties of cadastral institutions remain, land operations will be conducted by the private sector and 100% cost recovery will be guaranteed.” The results of the questionnaires conducted within the scope of Cadastre 2014 and the responsibility distribution between the public and private sector have shown that all the procedures necessitated by cadastral systems are generally undertaken by the public sector (Kaufmann and Steudler, 1998). Cadastre 2014 has made it clear that the economic part of the cadastral measurements and land registry should be conducted by the private sector as well. The NPM approach has been approved in Cadastre 2014 within the scope of reorganization of the inflexible public structure and a higher level of private sector participation. Personnel reduction and cost recovery are some other trends supporting this situation. Cost recovery is an important perspective in the NPM approach. Some of the cadastral development trends envisaged by Cadastre 2014 are land management; personnel reduction in cadastral institutions; increase in private sector participation and regionalization of this participation; and ensuring of the condition that cost recovery mechanism meets -at least- operation cost or investment cost. Some of the rules to be followed by Cadastre 2014 are as follows: “Cadastre 2014 will constitute a cooperative between the public and private sector”, “Public sector participation will assure sustainability of the system”, “Public sector will be concentrated on the duty of supervision”, “Efficiency and flexibility will be ensured by the private sector”, “At this point, the private sector will undertake the responsibility of conducting applied works” and “Such division of labor will balance and guarantee the public and private interests on the land” (Kaufmann and Steudler, 1998).

Furthermore, the cadastral cooperation of public and private sectors formed the agenda of the Working Party on Land Administration (WPLA) established within the scope of the United Nations Economic Commission for Europe (UN-ECE). A consequence was a workshop held in 2000 under the name “Public-Private Sector Cooperation in Land Registry Systems”. This workshop showed that private sector participation in land administration is necessary and inevitable; that the main duty of the public

duty of the public sector should be to safeguard social developments; that functional activities should be carried out mainly by the private sector; thus, it will be useful to enable the public sector to take part in legal aspects and the private sector in technical aspects; and that the persons licensed in the name of the state should take part in legal aspects of the processes as well (UNECE, 2000). "Private sector participation in cadastral activities" concept has also been defined in the Declaration on Cadastre in the European Union issued by the EU Permanent Committee on Cadastre. In this Declaration, the necessary characteristics of the cadastral systems of EU member states were summarized in 12 points. One of the points has been arranged as "public sector will cooperate with the private sector in order to elaborate and update the cadastre of member states (Anonymous, 2002). In the "Workshop on the Institutional Framework for Securing Real Property Rights" held in Tbilisi in 2006, it was proposed that private/ public partnerships should be strengthened and that the private sector should be involved in land administration processes (UNECE, 2006).

Turkey, which achieved 7.5% economic growth in 2001 - 2008 period, recorded 7% growth in the construction sector in the same period. All land-related support services -including land expeditions and parceling works- have also increased as a result of this growth in construction sector. For this reason, both the public sector and the private sector have encountered an increase in the demand for more focus on cadastral works. It has been observed that cadastral works serving as basis for many land-related engineering projects and investments can not be completed by the public sector. As a result, a basic policy change has been made after 2003 to benefit from the private sector in order to complete the country's cadastre. It has been decided to continue cadastral works by utilizing private sector facilities: three hundred and ninety-one villages / neighborhood in 2003; one thousand two hundred villages / neighborhoods in 2004; four thousand thirty-two villages / neighborhoods in 2005; three thousand five hundred thirty-five villages / neighborhoods in 2006 and two thousand three hundred ninety-seven villages / neighborhoods in 2007 were offered cadastral service by the private sector (Figure 1). Parcel cost was reduced from USD 44 to USD 30 in this production model; thereby, USD 112 million saving was made in 3 years. In addition, USD 100 million tax and fee revenue was generated annually for the state thanks to this production increase (Anonymous, 2009a).

THE ROLE OF THE PRIVATE SECTOR IN CADASTRE IN THE WORLD

When the current world situation is taken into consideration, it is clear that countries –especially the developed

ones- benefit from the private sector as a result of the openings of Cadastre 2014 and the changes in the public sector understanding. However, there are some differences in the level of private sector utilization by these countries. Cadastral steps in which the private sector can take part completely depend on the property policies of the countries. Hence, the private sector participates in different steps of the cadastral processes and there is no standardized policy in this regard.

Sweden case shows that private sector is not included in any steps of the cadastral processes and the Netherlands case shows that cadastral institution was turned into an independent institution after semi-privatized due to the big changes that occurred in the early 1990s and private sector does not participate in cadastral processes. The private sector has no role in land registry and cadastral measurements in Finland as well. However, only the technical aspects of the parceling - measurement and mapping- can be undertaken by the private sector if the person desires. Most cadastral measurements in India are conducted by the public sector, and the private sector takes place in the development of land information systems developed to ensure better management of the land resources (Yavuz and Biyik, 2004; Anonymous, 2008).

In many other countries like Denmark, Austria and Switzerland, however, the private sector has several roles from determination to registry (Anonymous, 2008; Enemark, 2006). On the other hand, the fact that the primary basis of the Cadastre is propriety and that propriety has an unquestionable importance results in performance of these works either by the governments or the private measurers authorized (licensed) by the governments. Licensing means authorization of any measurer in the issues that fall in the scope of the areas that are under the responsibility of the state. In Germany, as a matter of fact, the measurements related with the propriety rights are conducted by licensed measurers whereas no license is needed for other types of measurements. License conditions foreseen by some countries are shown in Table 1 (Yavuz, 2004; Zeddies, 2006). A license is required in European countries such as Germany, Belgium, Austria, France, Denmark and Portugal (Anonymous, 2008; Yavuz, 2004).

Another country where the private sector has a big pie is the United Kingdom. There is a general border concept in the United Kingdom and no cadastral measurement is made. However, upon the demand of the owner, the private sector can make such measurements as long as the costs are born by the owner (Yavuz and Biyik, 2004).

The general global trend suggests that cadastral services have been restructured and the private sector has been included in this process in many countries after the 1990s. For example, after the amendments put into effect in 1996, the authorized private measurers have undertaken many duties such as parceling, re-determination of the old borders, establishing frontier points in Hong

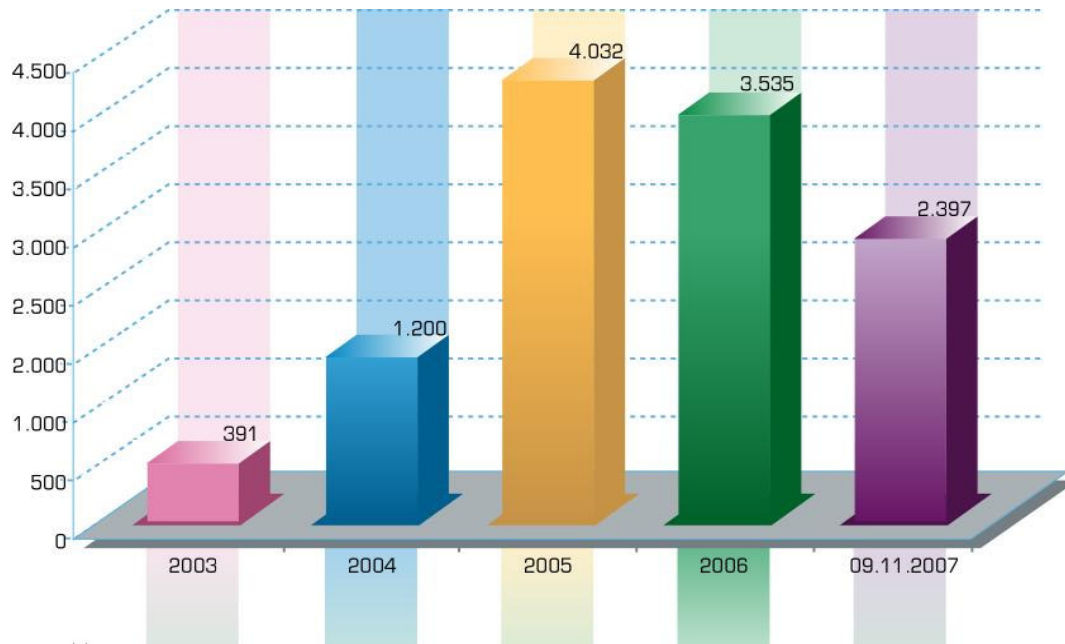


Figure 1. Cadastre by private sector according to years (Anonymous, 2009a).

Kong. The private sector has also started to take part in cadastral measurements in Luxembourg since 2002 (Anonymous, 2008).

According to April 2009 data, there are 1591 private mapping offices registered with the Chamber of Map and Cadastre Engineers (HKMO) (Anonymous, 2009b).

PRIVATE SECTOR IN CADASTRAL WORKS IN TURKEY

Private-sector mapping in Turkey

The involvement of the private sector in mapping began with maps in the name of İller Bank, in 1945. At the beginning of the 1950s, there were 7 private offices involved in mapping, which increased after Map Plan Regulation and Technical Regulation were published in 1973 and 1974, respectively. In 1983, the number of private mapping offices reached 240. The private-sector was permitted to produce 1/5000 and larger scale maps. The private sector therefore started producing maps using photogrammetric methods, which consequently provided the impetus for expansion of the sector. The emergence of Geographical Information Systems, Land Information Systems and City Information Systems had positive effects on the mapping sector. The private mapping sector is now involved in the production of mapping products which include the infrastructure of many engineering services. These include: Cadastre, consolidation, reconstruction, urbanization, environment monitoring, arrangement of tourism and shores, irrigation projects, improvement studies, dam, railway, highway, aerodrome, drainage, energy and communication line projects, nautical and reservoir maps, mining maps, spatial planning of housing developments (İpek, 2008).

The private sector in land registry Cadastre studies

Land registry and cadastral services have always been traditional public services in Turkey. With the proclamation of the republic, the responsibility to conduct land registry and cadastral services was given to the General Directorate of Land Registry and Cadastre (TKGM) under the control of the Ministry of Public Works and Settlement (Demir et al., 2008). TKGM is comprised of central and regional directorates (22), Real Estate Registration Offices (1018), Cadastral Directorates (325) and Cadastral Chieftainship (133). TKGM, which includes both cadastral services and land registry, is allocated a separate budget under the general budget. In addition, a revolving fund was established within the institution in 1988. Thus, all of the works carried out under the Institution are subjected to payment since that time. While some of these payments are collected within the scope of the revolving fund, others are collected directly in the name of the Ministry of Finance. That means that some of the revenues generated by the revolving fund are used by the institution. The revolving fund of TKGM transfers 30% of its gross monthly revenue to the general budget. This cadastral organization is financed by state funds and the fees charged in return for services. However, there are important differences between the budget allocated for the institution and the direct and indirect revenues generated by the activities of the institu-

Table 1. License conditions in some countries.

Country	Scope of authority	License conditions	Explanation
Turkey	All demand-based works.	<ol style="list-style-type: none"> 1) To be a citizen of Republic of Turkey 2) To be a graduate of the Department of Geodesy and Photogrammetric Engineering. 3) Not to be deprived of public rights. 4) To be eligible to enjoy civil rights. 5) Not to be subjected to punishment of dismissal from civil a servant position. 6) To be registered in Map and Cadastre Engineers Chamber (HKMO). 7) To have minimum 5 year experience as a map or cadastre engineer in either public or private sector. 8) Not to have been punished for permanent or temporary dismissing from profession as per Law Nr. 6235 on Turkish Engineer and Architects Chambers Union. 9) To be successful in the license examination and get the required score to be included in the acceptance list of the desired positions. 	
Germany	For only cadastral works (but the licensee can conduct other activities as well).	<ol style="list-style-type: none"> 1) Be an EU citizen. 2) To be a graduate of the Geodesy Department of a Technical University 3) To have Qualification Certificate. 4) To be successful in state level determination exam. 5) To have two-year internship in measurement administration. 6) To have at least one year experience in cadastral services after the examination. 	Could open offices only in the regions where they are authorized (Enemark, 2006; Zeddies, 2006).
Denmark	Cadastral measurements or legal measurements are conducted by licensed mappers.	<ol style="list-style-type: none"> 1) To have completed a five-year University degree, M.Sc. in Surveying, Planning and Land Management. 2) To have a three year experience in a private surveying firm. 	Licensed office operates at national level. The license is granted by the Ministry of Environment (Enemark, 2006).
Israel	Engineering, cadastral measurements, mapping and data collection for GIS.	<ol style="list-style-type: none"> 1) To be an Israeli citizen. 2) To be a graduate of Geodesy or Civil Engineering Departments (complete scholarly studies in geodesic subjects). 3) To have two years of professional experience. 4) To be successful in the examination. 	The main task of the licensed offices is to register apartment blocks. 95% of the land in Israel belongs to the state (Forrai et al, 2004).
Poland		<ol style="list-style-type: none"> 1) To have graduated from university in the field of measurement and to have three year professional experience or secondary technical experience and six year professional experience. 2) To be successful in written and oral examinations. 	The license is granted for different branches of the profession (development of control networks, cadastre and land administration, limitation of real estate parcels and their divisions). Persons can be granted a license in more than one field (Czarnecki and Wilkowski, 2002).

Table 1. Contd.

Austria	Deals with the division and the determination of the parcels.	1) To have a university degree in architecture; technological, scientific and mining areas; areas connected with environmental and soil sciences. 2) To have at least three years professional practice (after graduation). One of these three years has to be spent as an employee working under the instructions of the employer. 3) To be successful in the licensing examination (public oral examination).	Both natural persons and legal entities can be granted a license (Anonymous, 2008)
Slovakia		1) To have university degree in Geodesy and Cartography. 2) To have five year experience. 3) To be successful in the examination. 4) To be a member of the Chamber of Surveyors and Cartographers (Hardos, 2004).	

tion. Consideration of 2007 in this context shows that the appropriation allocation to the institution from the central budget was 402.822.000,00 YTL (USD 285.973.306,80 and EUR 218.095.289,70 according to the exchange rate on January 2007) (Anonymous, 2009c) that the amount transferred by the institution to the Treasury was 1.621.815.016,00 YTL (USD 1.392.474.471,00 and EUR 948.318.919,40) from land registry works and 30.000.000,00 YTL (USD 25.757.705,80 and EUR 17.541.807,90) from cadastral services (Anonymous, 2009a). Therefore, in 2007 the amount transferred from the institution to the Treasury was four times higher than the amount allocated from budget to the former.

The cadastral works which began in 1924 were in the state monopoly until the 1980s. However, it was stated by Article 4 of Cadastre and Land Registry Law Nr 2613 Dated 1934 and by Article 77 of Land Registry Law Nr 766 Dated 1966 that "When appropriate, scientific works under the cadastral services can be contracted to natural or legal persons to be performed either individually or in cooperation with the government". However, the above-mentioned provision could not be put into effect. Article 39 of Cadastre Law Nr 3402 Dated 1987, which is still in effect today, re-put on the agenda the provision "Some parts or all of the technical works under the cadastral services can be contracted to natural or legal persons" Upon the entry into force of the law, TKGM contracted triangulation affairs of 7 towns and 201 papers to the private sector in the same year. The triangulation works, parcel measurements and map preparations in Horasan town of the Erzurum Province were conducted by the private sector (Tüdeş, 1988). That was the beginning of the public-private sector cooperation in cadastral works in Turkey. However, private sector was not fully utilized except for only few cases.

According to 2003 data, although cadastral works have been carried out for 80 years, only 75.46% of the first establishment cadastres were completed and only a few

of these completed works were numerical. For this reason, cadastral works have gained momentum since 2004, through service purchase from the private sector. A total of 553 projects were contracted in 2008 and 223 projects were approved. As of the end of 2008, 96.94% of the urban cadastral works and 88.07% of the rural cadastral works were completed (Anonymous, 2009a). The first establishment cadastre is planned to be completed in 2009.

As the Cadastre has a dynamic structure, the process is not completed only by determining the borders, dimensions and the owners of immovables. Such information has also to be maintained and renewed. Such demand-based works as allotments, parceling and leaving to road are conducted, under the supervision of HKMO and TKGM, by the private sector without need for a license. Other works in this concept such as amalgamation, in-place investigation of the parcel, type variations and application are conducted by TKGM due to their significance (Figure 2).

Law Nr 5304, which was enforced in 2005, added the task of formulating the infrastructure of spatial information system to the existent tasks of TKGM. The institution's work load and responsibilities have increased as a result of this legal change. Taking into consideration the activities of Cadastre establishment, on the other hand, it is observed that the institution directs most of its human resources and its budget to maintenance services rendered on the basis of personal demands (the services such as in-place investigation, application and type variations), thus, it can not allocate necessary resource for the completion of the first establishment cadastre (a task of high priority). When 2007 activities of TKGM are considered, it is concluded that 315.728 demand-based works, 141.104 control services and 56.254 court and administrative reconnaissance were conducted. Real Estate Registration Offices completed 3.951.684 works as well (Anonymous, 2009a). Therefore, the restructuring

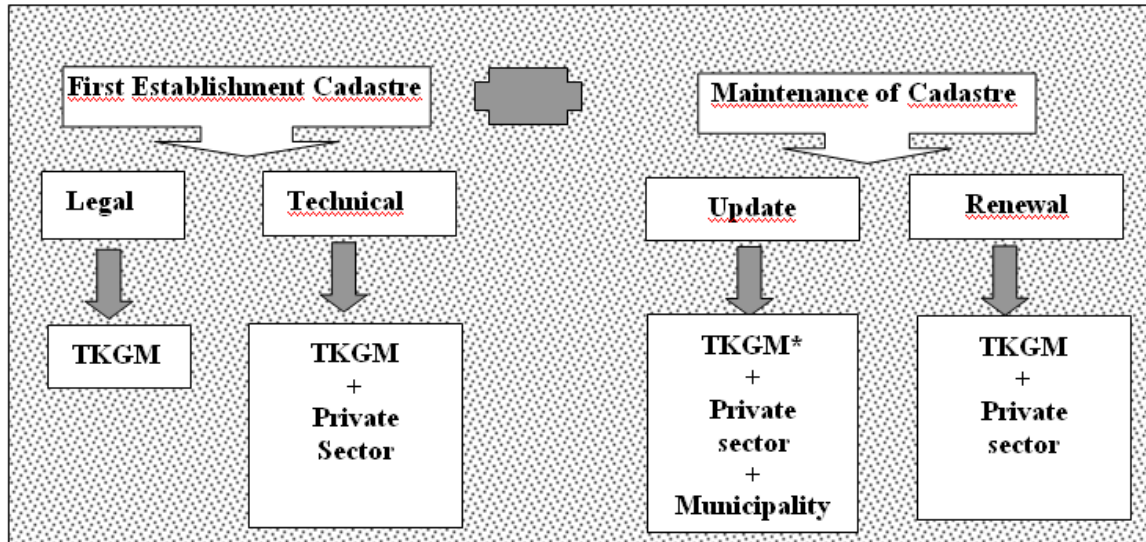


Figure 2. Cadastral process and responsible institutions and organizations.

* The licensed measurement offices after 2009.

of TKGM, whose duty field has constantly expanded, has returned to the agenda again.

The restructuring process of TKGM has been supported by the restructuring process undertaken in Turkey to ensure full compliance with European Union. As a consequence, some changes have been made in the legislation. Works have been initiated to transfer some of the services conducted by the public sector for many years to the private sector. An idea developed at this point: as required by the social understanding, the basic services such as education and health should be provided by the public sector, however, some services which are not directed at the whole society should be rendered by the private sector as long as costs are born by the demanding individuals and the state acts as a guide and supervisor in this process (Tümen, 1999). Thus, Law Nr 5368 on Licensed Mapping Cadastral Engineers and Offices was enacted in 2005. According to this law, technical cadastral services which are currently undertaken by TKGM and which are not subject to registration (application and in-place investigation of parcels) shall be performed and controlled by the licensed mapping cadastral engineer offices and the technical cadastral services which are currently undertaken by TKGM and which are subject to registration (type variation and granting, cancellation or amalgamations of easement) shall be performed by the same. It is also stated in the concerned law that working procedures and principles of the above-mentioned offices and the methods used in the conduct of these services shall be detailed with a by-law. However, it took a long time to prepare the by-law specified in the Law since these licenses offices are also entitled to do other demand-based works and there are some concerns about

possible monopolization regarding the demand-based works. Finally, a By-Law on Licensed Map and Cadastre Engineers and Offices was issued in 2008.

With the introduction of the By-law concerned, the process of transferring of the technical cadastral services to the private sector has gained momentum. In this scope, the Licensed Map Cadastre Engineers and Offices Commission was established under the General Directorate. The commission is comprised of 7 members: two from HKMO (one being an academician) and 5 from TKGM. The Commission sets the content and method of the license examination; arranges granting of license to the eligible applicants; determines the formats to be complied by the licensed offices while performing their duties; and lists the principles related with auditing of these offices.

According to the legislation, licensed offices can be opened on the basis of the annual work volumes of technical services in towns. Accordingly, a new office can be opened for an average of 1000 procedures (works) annually. If the work volume is lower than 500, TKGM has the responsibility to decide whether it is necessary to open a new licensed office or not. Given these conditions, 550 new licensed offices are estimated to be opened. Today there are 458 Cadastral units in Turkey, 325 of which are cadastral directorates and 133 of which are cadastral chieftainships. Data from Map and Cadastre Engineers Chamber (HKMO) (April, 2009) indicates that 1591 offices and companies are registered to conduct various topographical activities.

Licensed offices are planned to start working actively in 2009. Thus, TKGM will convey the demand-based works it carries out to the licensed offices will act as guide and supervisor and will focus on the establishment of the in-

Table 2. The results of Swot analysis, conducted for the status of the private sector with regard to the privatization of cadastre services

Strengths	Weaknesses
<ul style="list-style-type: none"> i) Having the necessary training and knowledge to provide appropriate services ii) The ability to follow new developments within the profession lii)The availability of qualified personnel iv) Rapid and qualified throughput power v) Being able to follow new software and equipment technologies vi) Abundance of software and equipment vii) Flexible structure and able to adapt to market changes more rapidly than state enterprises viii) The necessary experience to work anywhere in the world ix) Strong communication skills with the public which is offered service x) Having higher income 	<ul style="list-style-type: none"> i) Against unjust and competition-based bids due to decreasing of the labour offer ii) Operating costs that are much lower than the actual cost iii) Public perception is reluctant to accept the involvement of the private sector iv) An unstable set-up in which huge investments are made to software and equipment v) Loss of time due to disintegration of the land registry cadastre information vi) Loss of time due to data submitted by General Directorate of Land Registry and Cadastre, not being formatted according to the GIS/LIS vii) Loss of time due to insufficient update of the cadastral bases viii) The need for renewal of at least 60 % of Turkish cadastre and the effect of the disaccord of the ground and sheet over the works
Opportunities	Threats
<ul style="list-style-type: none"> i) Increased employment opportunities by allocating fundamental responsibility to the General Directorate of Land Registry and Cadastre, with the aim of developing Spatial Information System, thereby increasing the employment of qualified personnel ii) Positive alterations, likely to be made in occupational policies, particularly during the process of EU accession iii) The development of the immovable sector as a consequence of globalization iv) Putting renewal and updating studies of Turkish cadastre on the agenda of the relevant Government department 	<ul style="list-style-type: none"> i) Rapid and continuous alteration of current software and equipment ii) The expense of reinvesting in current technology being largely dependent on outside financial sources iii) Negative alteration, likely to be made to occupational policies during the process of EU accession iv) Reflection of the negativeness on the economical structure to the immovable sector v) Lack of legal structure for the protection of occupational rights vi) Giving work permits to overseas engineers vii) Monopolization risk stemming from giving limited license

frastructure of the spatial information system.

SWOT ANALYSIS

The effects of the privatization of Cadastre services was evaluated in meetings held in several regions of Turkey (İzmir, Adana, Diyarbakır, İstanbul, Trabzon, Erzurum, Bursa, Eskişehir) by the Chamber of Map and Cadastre Engineers. The results of Swot analysis, conducted for the status of the private sector with regard to the privatization of cadastre services is shown below (Table 2).

Conclusion

Increasing interest in the New Public Administration understanding, strengthening role of the private sector in

cadastral services and raise of cost recovery concept have been influential on cadastral sector and have lead to the start of the reform process. However, the legal importance of the cadastral services and the existence of private ownership -guaranteed in many countries by the Constitution- make policy makers more diligent in determining private sector policies in cadastral sector.

Land registry and cadastre sectors in Turkey have been affected by this process as well. As a result of this influence, a revolving fund was established in 1988 to ensure self-financing of the institution. Particularly after 2003, the process of service purchase from the private sector has started. The last step is to arrange the transfer of procedures performed by the General Directorate of Land Registry and Cadastre upon demand in this scope. When this arrangement is analysed, it is seen that the private sector is well-equipped to deliver services within this rapidly-changing sector. The private sector has the

skills-base and responsiveness, in addition to having the strong communication with the public, necessary to provide high-quality and relatively low-cost service to the public. Additionally, there is the potential for unfair competition in the private mapping sector, which has been established for approximately 60 years, by transference of work to a particular part of the current private sector. It is possible that this would be problematic for some sections of Turkey's domestic private mapping sectors, which would be less able to compete for these new contracts. Therefore, it is necessary to establish the implementation infrastructure in detail, through cooperation between the public and private sector, taking into consideration conditions within the sector. Currently, most of the cadastral bases are not digitized; hence, this presents a significant challenge to completing the procedures properly and within the necessary time-frame. Nonetheless, the General Directorate of Land Registry and Cadastre has been attempting to solve the problem by awarding the renewal and digitizing studies of the aforementioned bases to the private sector.

Consequently, the participation of the private sector is both beneficial and cost-effective, as it increases profitability and alters the current state structure, which is slow to update systems due to intensive bureaucracy. Thus, the General Directorate of Land Registry and Cadastre might be the institution which lays the infrastructure of the locational information system in the capacity of guidance and supervision, but not delivery.

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