

A General Approach for Cost Recovery of the Cadastral Products in Turkey

Osman DEMİR, Bayram UZUN and Ayşe YAVUZ, Turkey

Key Words: Cost Recovery, Cadastral Products, Public Service and Turkey.

SUMMARY

Public service is such a service resulted from common requirements of the community and can be produced only by the State. It is not possible that individual producer and customer in the market economy realize public procedure and services such as inner and outer security, justice and land registry-cadastre. As the State only produces and supplies these services in the name of community, the State provide financing required by levying money from the community. The financing required is provided from various sources such as mainly tax and fee. In this context, taxes are levied to meet public services but not being divided to the degree of benefit from public services of individuals. On the other hand, the degrees of individuals' benefit from some public services, which can be divided or individualized, can be partly determined. For example, because owners' own rights are protected against the third person by land registry, owners gain a special profit via land registry services At this juncture; the fees are prices received in return for such special services. On the other words, the fees are the other name of cost recovery approach. Indeed in the world, a general tendency concerning cost recovery is of a great importance in concept of new public comprehension.

In this paper, some approaches and recommendations are given concerning how the cost of cadastral services, public service whose benefit can be divided, can be received from owners that the degree of their benefits is evident by explaining Turkey as sample. As a result of this study, it is anticipated that these opinions will be useful on the cadastral systems of different countries, particularly in developing countries.

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1. INTRODUCTION

Public service is such a service resulted from common requirements of the community and can be produced only by the State. As the State only produces and supplies these services in the name of community, the State provide financing required by levying money from the community. The financing required is provided from various sources such as mainly tax and fee. In this context, taxes are levied to meet public services but not being divided to the degree of benefit from public services of individuals. On the other hand, the degrees of individuals' benefit from some public services, which can be divided or individualized, can be partly determined.

In this context, the subject of land registry can be given as a sample. As follows, because owners' own rights are protected against the third person by land registry, owners gain a special profit via land registry services At this juncture; the fees are prices received in return for such special services. On the other words, the fees are the other name of cost recovery approach.

Recently, a general tendency concerning cost recovery has existed in the world. This tendency is also present in the field of cadastre. In this sense, various investigations and workings have been done. Eventually, in many workings, it is agreed on the importance of the cost recovery in cadastre sector.

Indeed, one of the most important factors in the "Cadastre 2014 - A Vision For A Future Cadastral System" published with the aim of shaping the future cadastre is the cost recovery in cadastre. According to Cadastre 2014, modern cadastre will be cost recovering. Cadastral systems need considerable investment. But the land documented and secured by the cadastre represents a multiple of the investment. The investment and operation costs have to be paid back at least partially by those who profit (Kaufmann and Steudler, 1998).

However, in this point, that what the scope of cost recovery should be and how the cost recovery can be applied is put on the agenda.

With the aim of clarifying the mentioned questions, in this paper, Turkish cadastral system has been handled. Because, Turkish cadastre organization has established the Revolving Fund and thus it started to sell the cadastral products to the related people in return for fee in 1993. And now, the Revolving Fund has become the most important source of this organization. So, this formation is a good example. For this reason, it is anticipated that these opinions will be useful on the cadastral systems of different countries, particularly in developing countries.

2. THE CADASTRE IN TURKEY

The cadastre arranging man-land relationship is a service sector. Thanks to these services, while offering the guarantee of the State to owners, the income has also been provided for the state and its organizations with taxes levied directly or indirectly. In Turkey, the aim of cadastre is to record the properties in the name of owners to the Title Register (Tapu Kütüğü in Turkish) by defining their boundaries and areas. It is possible to classify in three stages the cadastral works done in our country since the beginning (Bıyık, 1999). These are as follows:

- Written cadastre (in this stage, cadastral works aren't based on any cadastral measurement and map),
- Graphic cadastre (in this stage, cadastral works are based on either local or national coordinate systems or the using of triangles (here, there is only the lengths of edges of triangles, not coordinates of parcel corner points)) and
- Digital cadastre (in this stage, all parcels are defined with coordinates in digital format).

In the consequence of the written cadastre works, Records concerning working fields have been constituted. In addition, some statistical information about mentioned fields has also been recorded. Today, these records can be used instead of title deed in places where the graphic cadastre or the digital cadastre hasn't been done yet. However, the graphic and digital cadastre works have been implemented in the following ways (DPT, 2001):

- With graphical drawing in using classical tacheometer,
- With drawing according to coordinates in using classical tacheometer,
- With the method prismatic measurement,
- With the method of Photogrammetry
- With EDM.

Consequently, cadastral products have been produced in different methods, in different scales, with coordinates or without coordinates and in different accuracy. In addition, the cadastre in Turkey has not been completed yet. Thus, the cadastre is insufficient to cover the requirements the cadastre needs to review in many aspects such as technical standards, de facto land use, geodetic network points, the contents and the accuracy (Bıyık, 1999).

The Turkish Land Registry and Cadastre (LRC) has attached much importance that geodetic networks forming the base of cadastral works should be robust and reliable to increase the quality of data. In this context, it is important that the production of cadastral map should be based on national geodetic network and that cadastral map should be produced in digital format by benefiting from the possibilities of modern technology. Besides, it is necessary that old cadastre should adapt to requirements and expectations of today (Demir, 2000).

For this reason, the LRC started the project named Turkish Land Information System (TAKBIS) in the beginning of 1990's. This project is to aim the production of cadastral information based on national coordinate system and the establishment of cadastre information system by benefiting from the power and possibilities of private sector. And this project has been continued. But it is stated that in the context of this project, crucial problems exist because of the products at different qualities (Şahin and Şişman, 1999).

3. THE REVOLVING FUND SERVICES IN THE CADASTRE

The giving of cadastral products to relevant people in return for fee by means of the revolving fund was started with a directive concerning the application of the revolving fund in cadastre office enacted in 1993. This directive has arranged the procedures concerning the giving of cadastral map and technical document samples to relevant people and the implementing of alteration and control services. Besides, it has aimed to provide equality in practice. Looked at the practice, it can be said that the similar one of cost recovery method expected from modern cadastre in the world has been applied in Turkey since 1993. In this context, cadastral products sold to the relevant people by means of the revolving fund and their fees have been given in Table 1.

Table 1: Cadastral Products And Their Price List

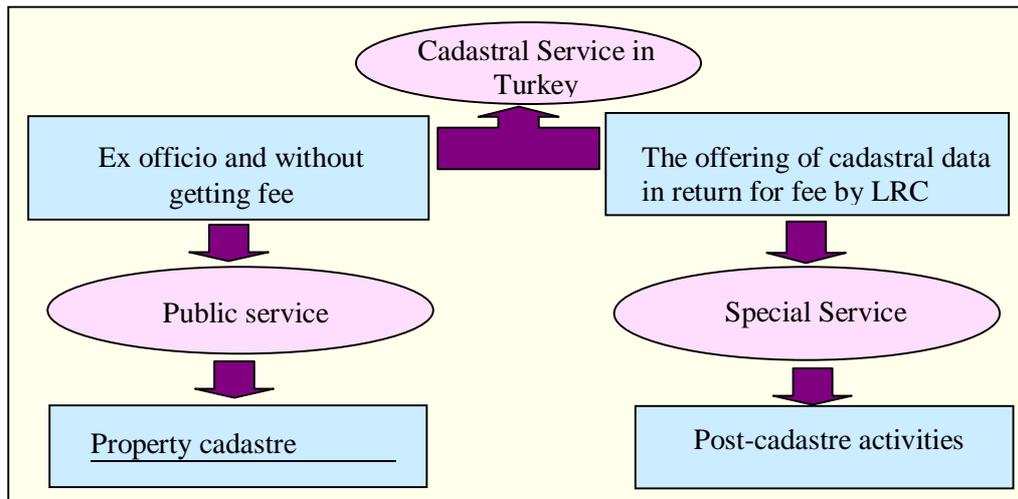
The technical documents	Unit	Price (Euro)*
First order geodetic network coordinate and its sketch	1 number	33.33
Second order geodetic network coordinate and its sketch	1 number	20
Third geodetic network coordinate and its sketch	1 number	13.33
Forth triangulation coordinate and its sketch	1 number	6.67
Bench mark	1 number	6.67
Traverse coordinate	1 number	2.42
Lot corner coordinate	1 point	0.24
Lot field sheet	1 page	1.82
Tacheometric sketch	1 page	1.21
Application sketch	1 page	1.21
Traverse sketch	1 number	1.21
The copy of dull blueprint sheet	1 number	13.33
The copy of transparent blueprint sheet	1 number	16.97
The film of sheet	1 number	83.64

* Rate of exchange on the date of 01.03.2004 (1 Euro =1650000 Turkish Lira)

3.1 The Process of Cost Recovery in Turkish Cadastre

In Turkey, the process in the establishment of cadastral data has been started with the determination of the cadastral working fields. And this process has been completed with the constituting of cadastral documents. All of cadastral data produced in consequence of these works has been archived and always updated with post- cadastre activities. After this phase, in these places, new cadastral products are produced in consequence of works subject to registration done by both private sector and the state organizations (as seen from Figure 1).

Figure 1: Transformation of the cadastral services from public into special.



In order to constitute the new cadastral products, firstly, cadastral data have been demanded from the cadastre archives. In Turkey, the relevant person, private sector and public organizations can demand the cadastral data from the cadastre archive in return for the fees defined by The Revolving Fund Administration of the LRC. The cadastral data provided can't be given to irrelevant people, be reproduced and be transferred to another person. This data is provided only for written application. And the applicant is obliged to use this information only for a given purpose. Here, the basic opinion is that: the cadastral data is related to broader field than a parcel. Thus, the cadastre administration can define the field in which cadastral data can be used because of the right of data ownership.

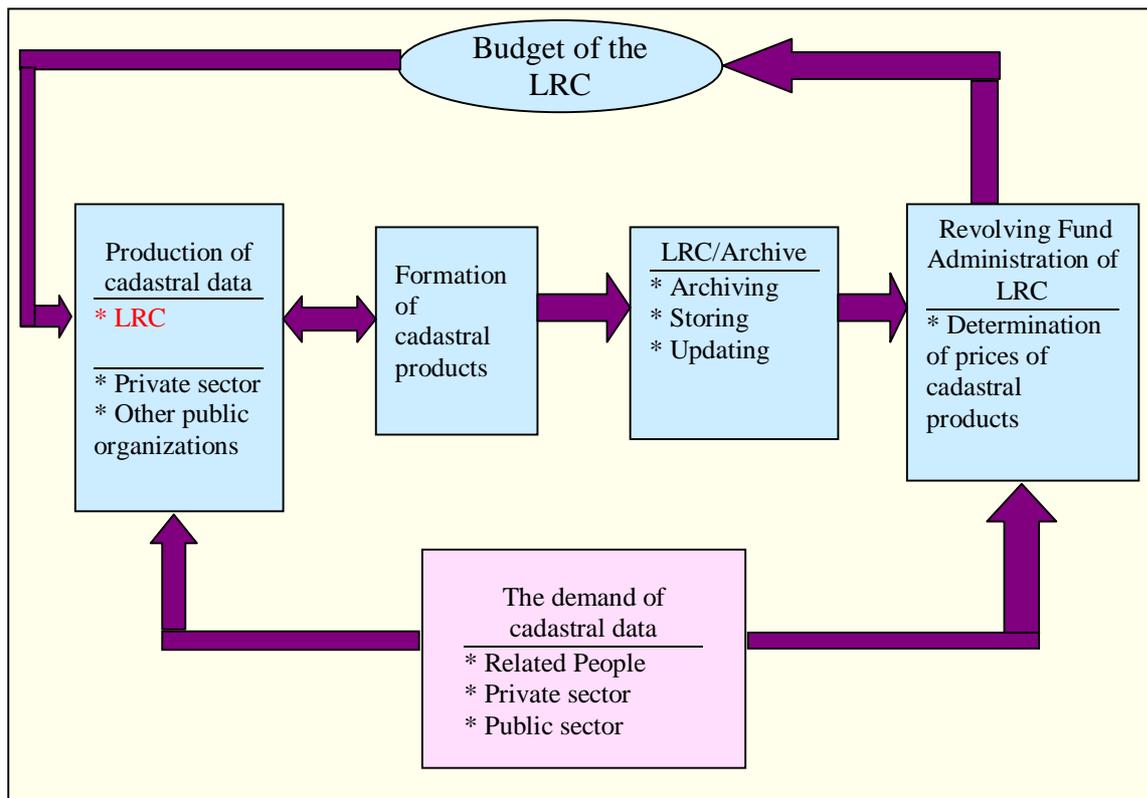
After the Cadastre Office implements the control of cadastral data subject to registration produced by private sector and public organizations, these data acquires the attribute of officially cadastral data. And, these data is stored as officially registered cadastral data in the archive of the Cadastre Office. Thus, these are accepted as data belonged to the Cadastre office.

After that, the incomes provided from all this cadastral products are accumulated in the budget of the Revolving Fund (seen from Figure 2). However, the LRC can use the budget of the Revolving Fund in partly, not completely. The rest is transmitted to The Ministry of Finance. In Turkey, the mechanism of cost recovery in cadastre has been operated in such way mentioned above.

3.2. Problems in Cost Recovery in Cadastre

Actually, when mechanism of cost recovery in cadastre has been looked, it hasn't been seen an important problem. Cadastral data has been sold to the relevant people in return for fee in case of demand. And this process has operated in orderly. But, there are some problems in the quality of cadastral data. The cadastral data (e.g. coordinates of parcel corner points) sold in return for fee has some technical insufficiencies. As follows, the cadastral data isn't in

Figure 2: The mechanism of cost recovery in cadastre in Turkey



position accuracy demanded, it is discrepancy with de facto, control points can not be found in the field and benchmark information is insufficient and out of date. Namely, although most of cadastral data sold is insufficient in point of technical, selling of this data by the revolving fund is inevitable. Because, using of this data is compulsory for changes based on demand.

In addition, as implied above, private and public sector has produced new cadastral data in consequence of post cadastre activities. When the private and public sector want to use this data for other an activity, they have to buy in return for fee from the revolving fund management. Briefly, the private and public sector has also paid for cadastral data that they own have produced. This is also perceived as an important problem.

4. CONCLUSION

Concerning the mechanism of cost recovery in cadastre, there are some paradoxical questions. These are: How much of cost of operation should be met? How can the cost be recovered? Should be the profit aimed? etc. But, there are no certain answers for these questions. Because, it is indefinite how much time the total cost can be met. Moreover, after acquiring the cost, that the responsible organization doesn't get fee from people wishing to get cadastral data will be against for the principle of social justice. Because, this principle includes a rule that public cost should be shared among people demanding this service. Thus, it can be said that the policy of pricing should based on the opinion that cadastral services by

themselves should always finance. And, with the mechanism established, cadastral data will be given in unreturned.

On the other hand, it will be inevitable the necessity of that the quality of the cadastral data should be increased. Indeed, modern technology and computer-aided improvements will facilitate the offering of such services in point of both the organizations and demanders.

As a consequence, it is recommended that the mechanism of cost recovery operated in Turkey should be taken as a sample in providing financial resources required for maintaining cadastral activities.

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BIOGRAPHICAL NOTES

Osman Demir is a research assistant at the Karadeniz Technical University (KTU), Turkey. He graduated from the Department of Geodesy and Photogrammetry Engineering at KTU in 1989. He received his MSc degree with thesis “An investigation on the current statues of the river basins ownership” in november 1993. He recieved his PhD degree with thesis “Forming the bases of cadastre information system in the area its cadastre was done on the orthogonal method” in september 2000. His research interests are cadastre and cadastre information system.

Bayram Uzun is a research assistant at Karadeniz Technical University (KTU), Turkey. He graduated from the Department of Geodesy and Photogrammetry Engineering at KTU in 1987. He received his PhD degree with thesis entitled “To Investigate Highway-Property Relations In Respect Of Zoning Rights And To Propose A Model Using Land Readjustment Approach” in November 2000. His research interests are land administration, land readjustment and 3D cadastre.

Ayşe Yavuz is a research assistant at Karadeniz Technical University (KTU), Turkey. She graduated from the Department of Geodesy and Photogrammetry Engineering at KTU in

1994. She received her MSc degree with thesis entitled “Legal, Technical and Institutional Aspects of Forest Cadastre In Turkey “ in August 1997. She began her PhD in September 1997. She has studied on “Turkish Cadastral System During Adaptation to the European Union” as her PhD thesis. Her research interests are land administration and cadastral systems.

CONTACTS

Ayşe Yavuz
Karadeniz Technical University
Department of Geodesy and Photogrammetry Engineering
Trabzon
TURKEY
Tel. + 90 462 377 2761
Email: ayavuz@ktu.edu.tr

Bayram Uzun
Karadeniz Technical University
Department of Geodesy and Photogrammetry Engineering
Trabzon
TURKEY
Tel. + 90 462 377 2796
Email: buzun@ktu.edu.tr

Osman Demír
Karadeniz Technical University
Department of Geodesy and Photogrammetry Engineering
Trabzon
TURKEY
Tel. + 90 462 377 3124
Email: osmand@ktu.edu.tr