

## COMPARATIVE STUDY ON THE INSTITUTION OF CADASTRE IN INTERNATIONAL CONTEXT

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**Abstract:** *Land ownership has always been the basis of all civilizations. The state has always sought to know and to be informed about the extent and distribution of public and private property. For this reason, it was felt that there was a need to describe and register in the records the property limits to have a clear record of them, to control or limit them and to set the tax on the property. Thus, through the cadastre, a system of general and compulsory registration of the entire land fund is realized irrespective of the ownership of the property and the category of its use. Thus, the cadastre does not study the land itself but establishes the ways in which all technical information concerning the land fund is collected, processed and represented on the maps and plans together with the inclusion in the Land Registry of the related legal acts and deeds. In this context, this paper seeks to carry out a comparative study on the cadastre institution in an international context as well as to identify the elements that can serve to create a most viable cadastral system.*

**Keywords:** *Cadastre institution, cadastre, real estate, owner, register*

### 1. Introduction

According to the legislation in force, the General Cadastre is defined as a unitary and compulsory technical, economic and legal records system, through which is realized the identification, registration, description and representation on the maps and cadastral plans of all the buildings on the entire surface of the country, regardless of their destination or owner. [1]

The main characteristics of the cadastre consist in the fact that it is objective, unitary, dynamic, general, obligatory, perfect and has a historical character. As regards the role of the cadastre, it can be defined by the fact that it has to provide real data on the size, configuration, position of the real estate, the real estate owners and the land quality category. Obtaining these data leads to the achievement of the three parts of the cadastre: the technical, economic and legal part of the cadastre [2].

The aim of the cadastre is to make available to all those interested, at any time and in the situation, all real and complete real estate data, which leads to the completion of the cadastral records necessary for establishing the taxes and duties and the regulation of the legal situation by registering them in the Land Registry. At the same time, a real record is made on the situation of the specially designated land, which is in the administration of the ministries.

### 2. Materials and Methods

The importance of the cadastre is that it always provides data that includes the position, configuration and size of the property, and ownership and how to acquire and hold

property. As a consequence, these documents determine security on the real estate market. By its characteristics, the cadastre answers the following questions [3]:

- Where and how big is it? (quantitative function - surface, measurements);
- What kind is it? (qualitative function - on land use categories and land valuation);
- Whose is it? (legal function - identification of owner or owners).

In this context, land registers help to solve the administrative problems related to the land domain that may occur at a given moment in relation to citizens or different legal entities. Information from official land registers can be consulted by banks, creditors, business partners or consumers in order to increase safety and transparency in the property market within and outside the European Union [4].

### Cadastre Institution in the European Union

Cadastre was defined as a field base in the European Union countries. Cadastral information is not only used to record property and real estate advertising, but also to determine taxes and duties, environmental protection, urban planning, and transport. Irrespective of the legislation in force in each state of the European Union, the cadastre defines the property, having as its basic unit the parcel.

Currently, the Institution governing cadastre at the level of the European Union is the Permanent Committee on Cadastre (PCC), founded in 2002, following a joint decision of the representatives of the Member States of the Union [5]. Romania became a member of this Committee once it joined the European Union.

Among the major declared objectives of the Permanent Committee on Cadastre can be listed:

- establishing a network of information on cadastral work to facilitate the exchange of information on best practices among committee members;
- establishing privileged links between the cadastre institutions of the Member States of the European Union necessary for carrying out the specific activity.



Fig. 1 Official Site of the Permanent Committee on Cadastre (CCP) [5]

### Cadastre Institution in Latin America

The Permanent Cadastre Committee of Latin America (CPCI) was created in the field of real estate cadastre in 2006 in Colombia. This entity aims at the exchange of experience and the dissemination of cadastral documentation as well as the integration and cooperation between the institutions governing the cadastre [6].

Latin America is a region that has a variety of contrasts in land use:

- the Amazon forest along with areas increasingly affected by deforestation;
- large uninhabited regions in contrast to enormous urban concentrations;
- the coexistence of wealth and poverty in the same residential neighborhoods.

Many of these contrasts derive, for the most part, from policies established in the interest of the earth and which are perpetuated due to outdated and distorted data. In this situation, the cadastre institution is a global planning tool that can be used at local, regional and national level to address issues such as economic development, enlargement, poverty eradication, land policy and community sustainable development.

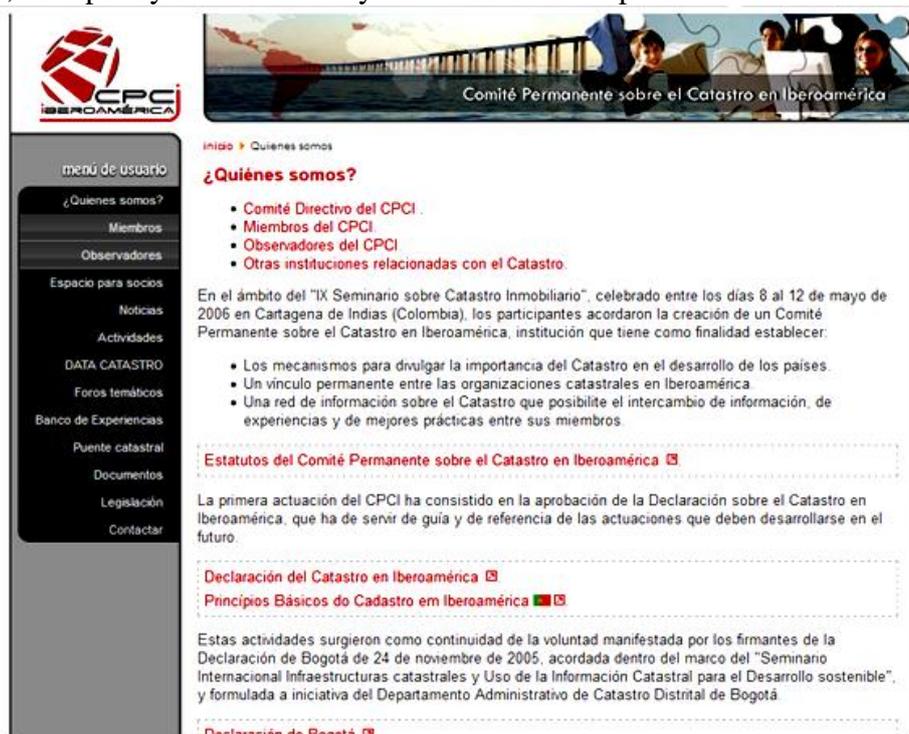


Fig. 2 Official website of the Permanent Cadastre Committee of Latin America [7]

### 3. Results and Discussion

#### Cadastre Institution in Greece

The Greek cadastre was founded in 1994 and was initiated by the Ministry of Environment, Physical Planning and Public Works.

The Greek Cadastre is a unified, state-guaranteed system of registration of legal, technical and other information relating to immovable property and associated rights [8].

Through the cadastre institution, all translatable acts of ownership are registered. Each act is recorded after a careful check of all the data included: the owner and the topographic description of the real estate.

According to Law 2664/1998 on the organization of the Greek cadastre, the information in the land registry is operated in electronic format, replacing the previous registration system for property transfers and mortgages. The cadastral database is designed, updated and maintained centrally. One or more land offices operate on the territory of each local court, providing services for the registration of real estate disputes within their area of activity.

Ktimatologio is a modern, well-organized public register for entering real estate data. The Ktimatologio office is a database containing legal and technical information, as well as descriptions of immovable property, in order to accurately assess them.



Fig. 3 Official Site The National Cadastre & Mapping Agency S.A. [8]

### Cadastre Institution in Spain

There are two different recording systems in Spain, and both systems are kept separate. These are the property register that focuses on ownership and title, and a cadastre showing the exact geographic location of the property, with a physical description and ownership limits.

The Spanish Cadastre is an administrative registry subordinated to the Ministry of Economy and Finance and represents an inventory of all real estate in the state or its regions, permanently and methodically updated by mapping the boundaries of plots and data associated with them in all its fields. Its main feature is that it is a public register that serves certain administrations, but also the interest of the citizen. Its character is global because it is constantly updated with the object of physical reality and real property because it contains graphical or alphanumeric data on real estate [9].



Fig. 4 Coordination of cadastre activity in Spain [10]

## Hungarian Cadastre Institution

The Hungarian Land Registry is managed by the Hungarian Ministry of Agriculture and Land Offices. The Department of Land Administration is the state body supervising land management activities alongside the Institute of Geodesy, Cartography and Remote Sensing.

The declared mission of this body is to become a successful, operational and efficient institution that guarantees land ownership and georeferencing to facilitate secure transactions and the provision of infrastructure and services for economic, environmental and social purposes. Also, the strategic vision is focused on making secure real estate transactions using an integrated, accessible and easy system for all [11].

In addition to activities covering the real estate sphere, the institution coordinates the activities of establishing and managing the network of geodetic control points, topographic mapping, administrative boundaries management, etc.



Fig. 5 The cadastre institution in Hungary [11]

## Cadastre Institution in Mexico

The Cadastre in Mexico is governed by the law of the cadastre of each State or the municipal cadastre law of each federal entity and its regulations.

In recent years, Mexico has embarked on a process of changing, modernizing and updating the cadastre in order to optimize property tax declarations and make the most of the facilities offered by this tool.

The basic function of the Mexican cadastre is to establish the quantitative and qualitative properties of immovable property and to create and maintain registers and databases containing the technical, economic and statistical elements of immovable property. The Cadastre and Public Property Register are two institutions with specific functions and purposes [12]:

- the objective of the Cadastre institution is the identification, location and use of property for the different purposes of the public administration;
- the objective of the Public Property Register is to grant real rights on the basis of real estate documents.

In general, in the Mexican states, the Cadastre is coordinated at institutional level as follows:

- a State Cadastre Entity, charged with normative functions regarding the integration of the state cadastre information system with Municipal Cadastre, for legal, administrative, geographic, statistical, socio-economic and planning purposes;
- a cadastre entity in each City Hall, which carries out the necessary activities for the integration of the Cadastral Information System and whose content includes the census and statistical data resulting from the technical, analytical, evaluation, collection and register functions of the properties located on the territory of the municipalities, for fiscal, legal, administrative, geographical, statistical, socio-economic and planning purposes.

In situations where some municipalities do not have a cadastral coordinating body, the state body performs the appropriate functions [13].



Fig.6 Cadastre Institution in Mexico [14]

### Cadastre Institution in Argentina

Argentina is a country with 23 provinces, plus the federal capital, Buenos Aires. The Republic does not have a national cadastre, just like the other Latin American countries. Each province is free to organize its own cadastre system, as required by the National Constitution. So, the cadastral structure of Argentina is composed of provincial and municipal cadastres with different levels of sophistication and integration across the country. Information relating to immovable property is recorded in the Real Estate Registry (RPI). [15]

Cadastral organizations are linked to different ministries depending on the province they belong to.

The cadastre institutions, implicitly cadastral systems, cover the following functions:

- geometric (referring to geographic, topographic maps);
- legal (property and possessions);
- economic (land valuation and tax value for them).

The Argentinean cadastre has a very important role in society and a long history of development over time. It has progressed significantly and spontaneously in recent years, primarily due to the great technological advances in the field of geoinformation and, secondly,

due to the great possibilities of carrying out the projects in the field of cadastre that have been carried out in most of the World Bank or with provincial funding.

The implementation of cadastral systems as well as the multifunctional cadastre has significantly increased its potential in terms of services provided to society, so in the future there are many changes and new opportunities for Argentina.

The deficiency of the Argentine cadastre is due to the lack of georeferenced data.



Fig. 7 Cadastre Institution in Argentina [15]

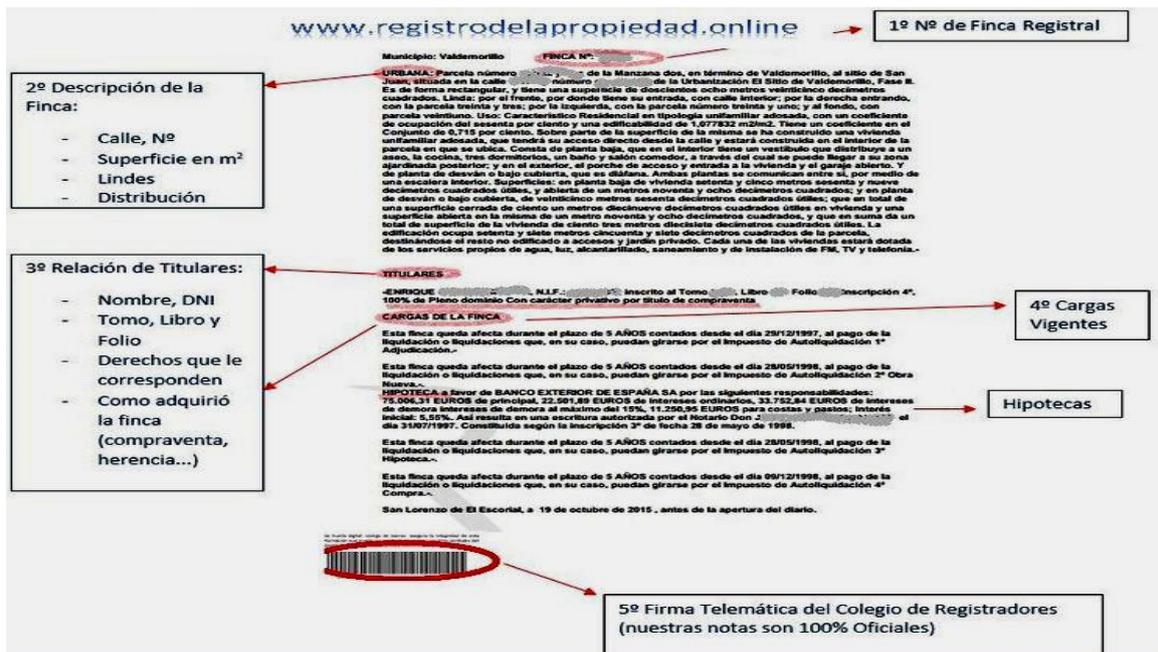


Fig. 8 Real Estate Registry in Argentina [15]

### Cadastre Institution in Colombia

For Colombia, the notion of cadastre has existed since the beginning of the 19th century, being discussed at the Congress of Villa del Rosario in Cúcuta, after which the first legislative reference called "Canton General Cadastre" was created.

In Colombia, the cadastre is defined as the duly updated inventory or census of immovable property belonging to public or private property owned by individuals. It is based on several aspects: [16]

- legal (registration in the cadastral documents of the property right);
- fiscal (based on the cadastral valuation, the tax rate for the real estate is determined);
- economic (for building and preserving the cadastre the assessment of each property will be determined by adding independent partial land and building valuations).

The cadastre institution is represented by the Augustin Codazzi Geographical Institute and is the entity responsible for producing maps and basic cartography of Colombia, the development of the National Property Cadastre, inventory for soil characterization, geographic research and training of professionals in the field of geographic information technology. This institution handles about 70% of the municipalities' cadastres, to which the Administrative Department of the Antioquia District Cadastre, the Bogota Regional Administrative Cadastre Unit, the Municipal Cadastre Department of Cali, the Medellin Cadastral Sub-Secretariat.

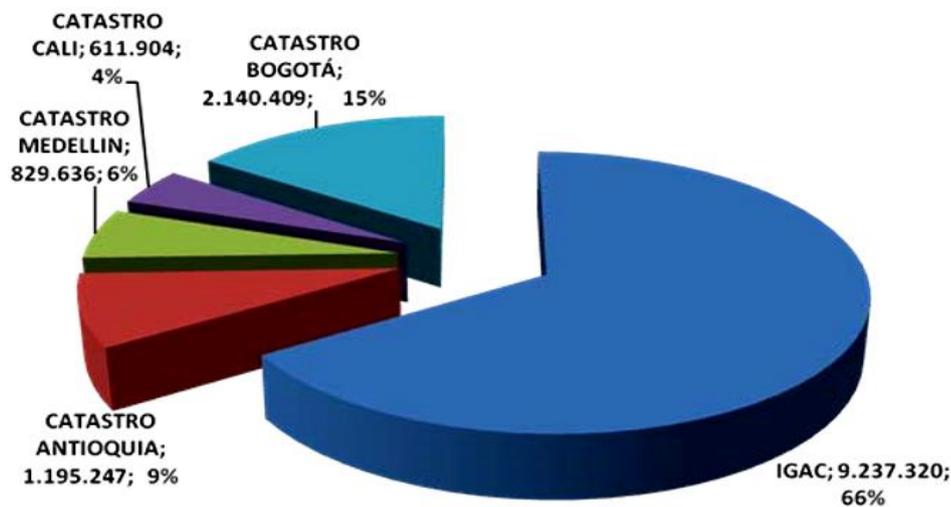


Fig.9 Cadastre Institutions in Colombia [17]

### Cadastre in Brazil

Implementing an effective cadastre in Brazil is a challenge. Lack of it means constraints in ensuring security, social justice and economic development. In particular, in the Amazon area, lack of cadastre complicates land management, increases land conflicts, reduces land recognition capacity, implicitly property rights, and encourages the illegal exploitation of natural resources. [18]

Brazil's recent progress in the field of cadastre is visible, but there are important issues that need to be addressed on property rights recognition, conflict resolution and land use. In order to achieve these objectives, this cadastre of Brazil needs to be redefined by new methods of collecting cadastral data, creating new methods for improving cadastral data and using modern data management technologies.

To resolve the various issues in this area, the Land Management System has been developed, which is an electronic cadastral platform where both public and private land records are carried out, as well as landscaping in the Amazon large cadastral problems. The Cadastre in Brazil is defined as an information system updating and recording land data such as property rights, restrictions and responsibilities that apply to each land. The most important authority in the field of cadastre is the International Federation of

Inspectors. This institution establishes the relationship between person and field from a legal point of view.



Fig. 10 Land Fund Management System [19]

#### 4. Conclusions

For each area under consideration, depending on the territorial development policies, it is found that a cadastre system has been implemented which is under the jurisdiction of a national or state body that coordinates the activity throughout all stages, from measurements, to maintenance of databases information.

In recent years, the vision of the cadastre as a multifunctional information system has begun to evolve, bringing with it great progress in terms of the quality of information systems on land management and solving the problems raised by the real estate fund. The origin of these concerns can be found even in the concept of multifunctional cadastre systems and in the administrative decisions required for their implementation.

To implement a multifunctional cadastre, it is necessary to extend the alphanumeric databases - including social and environmental data, as well as the physical aspects (location and form), the economic and legal aspects of the plot - and link this information to a map of parcels in a geographic information system (GIS). Although this is very important, it is only sufficient if this activity is institutionally coordinated at national or state level, where all the information is centralized.

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