Challenges in implementing the systematic land registration in Romania

CARMEN GRECEA, GEORGIANA RUSU, COSMIN CONSTANTIN MUSAT,
ANCA MARIA MOSCOVICI
Department of Land Measurements and Cadastre
"Politehnica" University of Timisoara
300006 Timisoara, P-ta Victoriei no. 2
ROMANIA
carmen.grecea@ct.upt.ro
georgianarusu85@yahoo.com

Abstract: - In the context of constantly changing contemporary society, it can be distinguished the urgent need to organize a unitary system of all data related to real estate properties across the country. The cadastral system of a country reveals its level of progress, both economically and socially. For a high efficiency on the real estate market, together with the security and liberty of making transactions, registering a property, planning operations, the introduction of an ad valorem tax on property and a rational use of space, it is absolutely necessary to assure the informatization of the activity related to general and multipurpose cadastre, to provide a complete evidence of lands and buildings. This paper presents studies and results of some European projects, along with comparisons of the performances of cadastral systems in European Union, as well as a brief overview towards the systematic land registration in Romania, as a result of complying with the European standards, in order to achieve the most important steps towards successful integration in the European Community. In this paper, the authors aim to emphasize the strengths and weaknesses of the systematic land registration in Romania, as well as the present stage of achieving this desideratum in comparison to several European countries, in order to understand the historical context and give some solutions and future directions for Romanian actual practice.

Key-Words: - systematic land registration, real-estate property, property rights, I.N.S.P.I.R.E., E-Terra.

1 Introduction

Land registration system of a country reveals the economical and social level of progress. This is a very important element in the development of each country. Across Europe, there are different types of cadastral systems, due to the many differences concerning their cultural, economical and social backgrounds. During its evolution in Romania, the land registration system experienced many economical and political changes. The political climate led to some deficiencies in the cadastral system, which are characteristic to ex communist countries. In time, the role of the land registration system remained the same, but the tools, the methods and the principles had developed due to the scientific progress of technology, especially in informatics and also due to the inner conditions of the Romanian society. This is the reason why the most important task of the new real estate registration policy is to assure the informatization of this activity, to provide a complete evidence of lands and buildings, in order to create a unitary, complex, realistic and up-to-date cadastral system and to facilitate the access to information, according to European standards.

The main quality of a modern land registration system is represented by the use of digital data at any level of the process. Transformation of the present informational system into a database system implies the organization of information into separate files related to one another.

The paper presents studies and results of some projects implemented in Romania, such as I.N.S.P.I.R.E. or E-Terra, as a consequence of the integration in the European Union and a brief comparison of the performances of land registration systems in some European countries. The improvements that have been achieved since implementing the new land registration system are visible. The authors also aim to assess the level of progress concerning the systematic land registration in Romania, to

emphasize the weaknesses and to provide solutions for several problems encountered during the process.

2 Problem Formulation

In the historical context of the cadastral system evolution in Romania, a multitude of resemblances between the real estate registration systems of the countries that arised from the former Austro-Hungarian Empire can be distinguished.

Fundamental rights and freedoms have always been the most important and continue to be accorded high priority in the Austrian constitution.

In 1718 the Austrian Administration made the first step regarding the real estate property by introducing a registration system for all buildings and parcels based on surveying and mapping in the field across the Italian provinces belonging to Austria.

The territory of Austria has been completely surveyed between 1817 and 1861. The maintenance of the Austrian cadastre was enacted in 1883, through the so called "Evidenzhaltungsgesetz". This law stipulated that all changes in parcels (boundaries and/or ownership) have to be registered in the cadastre and the land registry. Since then, there has been a constant process of updating the Austrian cadastre. The register was structured in 3 pages: page A for objects, page B for owners and ownership and page C for obligations. This structure, as well as the dual system of land register and cadastre, is still in use nowadays, known as the Central European Land Registry system.

These particularities are also specific to the Romanian cadastral system and land registers.

In 1969 Austria enacted the Surveying Law and established the fundamental functions of the surveying authorities. Through the so called "Cadastre of boundaries", the state guarantees the boundaries of a parcel. There were also established the requirements for receiving the qualitative attribute, which are: a written consent of all owners neighboring the parcel, a precise survey of the parcel and the cadastral documentation.

Within the last three decades, the Austrian cadastre and land registers have been converted into a common digital data base (Grundstücksdatenbank), which completely replaced the analogue registers until the beginning of 1990`s. The Austrian land registration system is complete and functional and public access to web services is enabled.

In Hungary, the beginning of the cadastral survey was in 1786 and it was completed in 1790, following the decree „Law on Parcel Survey for Hungary" of Emperor Joseph the Second, Hungary being part of the Austrian Empire at that time. The detailed cadastral survey began in 1856, at the scale of 1:2880. The first Hungarian Cadastral Map Archives opened in Sopron in 1860, in Zágráb (Zagreb) in 1861 and in Kassa (Košice) in 1865.

In some regions from Romania, especially in those which were under Austro-Hungarian occupation, the cadastral plans and maps are often at scale of 1:2880 or 1:1440 and contain Hungarian inscriptions. Land registers, in these regions, are also written in Hungarian. Although the benefits of the existing plans and maps are considerably higher than the disadvantages, this is a problem though, because there is additional work that needs to be done in translation and interpretation of the written documents.

In order to coordinate the implementation of digital cadastral mapping programme in Hungary, the National Cadastre Programme was established in 1996 under the Ministry of Agriculture and Rural Development. This programme was financed by commercial bank loan, with the guarantee of the Hungarian Government, without any support from State budget. This loan will be paid back by land administration organization from the generated revenue.

In the Romanian provinces, cadastral and land registration activity began at different moments, depending on the historical circumstances.

In Transylvania, Banat and part of Bucovina, specific cadastral works began during the Austro-Hungarian regime and continued after 1850, as the „Concrete Cadastre", which consisted of delimitation, description and representation of localities borders, plot limits, rivers and roads.

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In Wallachia and Moldavia, the first attempts for achieving the land registration were made between 1831 and 1832.

In the rest of the country, the cadastral works were performed after the First World War, at the same time with land reform.

In 1919, "Directorate for Cadastre and Technical Works" was set up, which limited its activity to the measurement of domains and the land assigned after the First World War. Topographic and cadastral surveying were performed using the local reference systems and the lack of a homogeneous geodetic triangulation network led to differences in accuracy and content.

A big step was made in 1930, when the first stereographic projection system was adopted, as a result of cooperation between the Directorate for Cadastre and the Geographic Institute of the Army.

Between 1947 and 1990, the land was removed from the civil circuit. In 1955 a cadastral system was adopted for agricultural land reparcelling during the collectivization of agriculture and contributed to the restriction of property rights. During this time there were carried out cadastral plans and maps, as well as land evaluations, especially for centralized economic planning, considering the real estate owners of that time (public and cooperative sector).

After 1990, at the same time with the enactment of the Land Property Law no. 18/1991, real estates were returned to their rightful owners, which led to a significant increase of the society's interest in property.

The most important legislative instrument in cadastre and land registration is Law no. 7/1996, that provides the legal framework necessary for the development of a modern cadastre. Through this law, it was founded the National Office of Cadastre, Geodesy and Cartography, currently named National Agency for Cadastre and Land Registration (N.A.C.L.R./A.N.C.P.I.). The main tasks of this institution are: to coordinate and take control over the cadastre, cartography, surveying, geodesy, photogrammetry and remote sensing works, to ensure real estate registration across the country, to promote techniques, standards, methodologies and procedures that help specialists to execute technical works and to provide standardization of procedures in accordance with European and international standards.

I.N.S.P.I.R.E. (Infrastructure for Spatial Information in the European Community) is an European initiative in order to establish an infrastructure for spatial information in Europe, with the aim to make spatial or geographical information more accessible and interoperable, supporting sustainable development. [1]

The I.N.S.P.I.R.E. directive came into force on the 15th of May 2007 and will be fully implemented by 2019. I.N.S.P.I.R.E. directive was implemented in the national legislation by Government Ordinance no. 4/2010. National Agency for Cadastre and Land Registration is the president of National Infrastructure for Spatial Information Council.

The I.N.S.P.I.R.E. directive aims to create a European Union spatial data infrastructure. This will enable the sharing of environmental spatial information among public sector organisations and facilitate public access to spatial information across Europe. A European Spatial Data Infrastructure will assist in policy-making across boundaries. Therefore the spatial information considered under the directive is extensive and includes a great variety of topical and technical themes.

To ensure that the spatial data infrastructures of the Member States are compatible and usable in a community and transboundary context, the directive requires that common Implementing Rules (IR) are adopted in a number of specific areas (Metadata, Data Specifications, Network Services, Data and Service Sharing and Monitoring and Reporting). [2]

A unified cadastre and land registration system developed at national level was implemented in Romania and is administered, in compliance with the European and international standards in the field of cadastre and land registration, as a result of I.N.S.P.I.R.E. initiative. The system performs the efficient and secure registration of real estates, ensuring a much improved coordination between the technical and legal components.

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The integrated cadastre and land registration IT system (E-Terra) is National Agency for Cadastre and Land Registration's main operational computer system that ensures the management of the electronic cadastre and land registration records.

The purpose of this computer system is to unify, standardize and automate the processes of updating and inquiring the cadastral and juridical records administered by National Agency for Cadastre and Land Registration, having as final target the increase of quality of services delivered to the citizens and the institutions of this country. The system manages a unique database containing the graphical and textual data related to cadastral and legal record.

Since 2007, E-Terra has been implemented in Romania. Thus, each administrative territorial unit and all properties subjected to land operations (first entry, split, merge, change of use category) will be entered into the computer system E-Terra by converting analog data into digital format. Each property is assigned a new cadastral number called parcel identifier, which will be enrolled in a New Land Registry.

All data relating to real estate (administrative territory, area name owners, acquiring property mode, category of use) are included in the three parts of the converted land book. Land book also includes the buildings and the construction sketch on this, as well as the coordinate inventory points that define property boundaries in the stereographic projection system 1970.

Implementation was done in 2 stages, so that at the end of 2012, the E-Terra became operational and binding in all counties of Romania.

The main objectives of the application are: improvement and computerization main work streams of National Agency for Cadastre and Land Registration, automating certain processes, standardization of working documents, securing information. system tracking events, reduce paper documents archive, reducing the time to handle requests, quick access to archive data.

Graphic information is stored in GIS layers, which are visible in the legend: land, buildings, construction, town boundaries, territorial administrative limits, orthophoto. All layers contained in the data set must have the same coordinate system. The projection used in the cadastral database is the National System Stereographic 1970.

Textual attributes of the real estate in E-Terra are: identifier (electronic cadastral number), territorial administrative unit, area of the act, measured area, building condition, parcel, address.

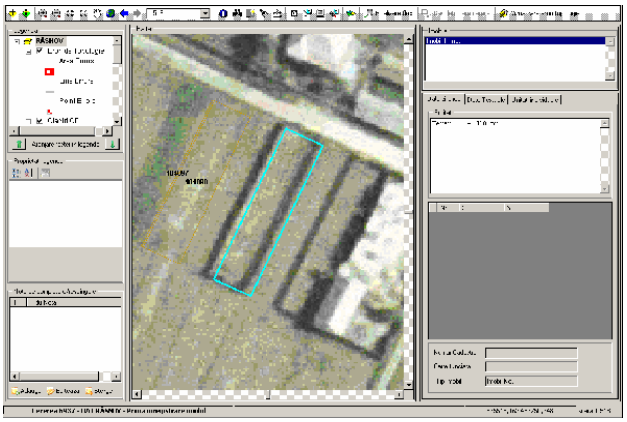

Fig.1 GIS environment presentation

TransDatRO is a software for coordinate transformation from the national coordinate system reference in the European reference system and vice versa and it is available for public on National Agency for Cadastre and Land Registration official site. This is also a benefit of the the I.N.S.P.I.R.E. directive. Interested persons may access online web site ANCPI the list of persons authorized to perform specialized technical work is also available on the site.

In December 2012, National Agency for Cadastre and Land Registration achieved spatial data sets in accordance with the I.N.S.P.I.R.E. by transforming themes within their products and E-Terra TOPRO5 in I.N.S.P.I.R.E. format. This resulted in 5 sets of spatial data, such as: geographical names, administrative units, land plots, transport networks, hydrography.

Quality assurance for the corresponding metadata documents for spatial data sets and services is achieved through validation application for metadata documents, which is available on the I.N.S.P.I.R.E. geo-portal of Romania. The achievement of the geo-portal

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started in 2010. It provides access to metadata, spatial data sets and services held by National Infrastructure for Spatial Information Council members and it can be accessed at: http://geoportal.ancpi.ro/geoportal, which is connected to the European geo-portal.

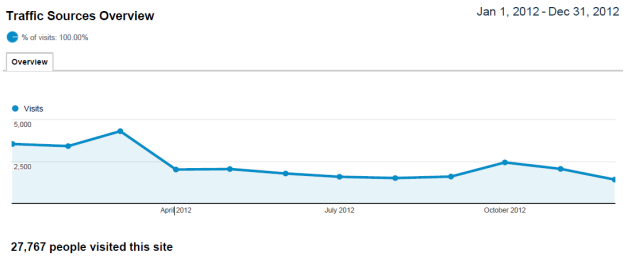

Fig.2 Statistics on the number of visitors of the I.N.S.P.I.R.E. geo-portal in Romania [3]

According to the National Agency for Cadastre and Land Registration report in 2013, the desiderates established through the I.N.S.P.I.R.E. directive, in order to create a European Union spatial data infrastructure, have been partially accomplished. There have been made efforts in order to bring the existing system in Romania close to the level of development achieved by the European countries, in all domains, but there are lots of problems encountered during the process and it is very difficult and time consuming to register all the properties across the country, given the social environment.

National Agency for Cadastre and Land Registration participated in the Joint Border Commission to carry out the verification work of the border between Romania and neighboring countries. Such agreements for delimiting the borders were signed with Serbia and Hungary and the agreement with Ukraine is almost completed.

3 Problem Solution

Many European countries are developing new strategies to improve cadastre management. Cadastre has become multipurpose in all countries, as for: maintaining an up-todate database, serving administrative mandates, assigning values for taxation, calculating subsidies, addressing rural development and agrarian management and providing products and services to citizens and companies.

A European multipurpose cadastre may include fiscal cadastre (for tax reference), legal cadastre (title registry), planning cadastre (city planning) and so forth. The service of register is dedicated to guaranteeing real estate property rights, one of the basic pillars in a market society. The cadastre offers a basic infrastructure that supports different social and economic purposes. The Cadastre 2014 Data Model will be used to create maps that show the complete legal situation of land including public rights and restrictions.[4]

The systematic registration of properties consists of identification, description and recording of constructions in cadastral documents, the measuring of land boundaries, the representation of constructions on cadastral plans and the storage of data on informatic support, as well as the identification and recording of all owners of buildings and individual units of the condominium, in order to record them in the land registry.

The main objectives envisaged are the following:

to record all the technical documents of the systematic land registration (cadastre register of buildings and owners, alphabetic index of the owners, cadastre plan) and to start up the land registries after the identification of the building owners and after recording the real correlative real estate rights. The identification of the buildings and the owners shall be done by processing data obtained from National Agency for Cadastre and Land Registration, City Halls, other institutions and by processing them along with other data obtained as a result of the field works.

The main stages of the systematic land registration are:

- Organising and developing the advertising campaign national and local
- Achieving cadaster preliminary works
- Interviewing owners at their home or in the field
- Conducting specialized works
- Reception of the cadaster techical documents
- Publishing of the cadaster techical documents
- Receving and solving rectification applications
- Updating the cadaster techical documents
- Opening of the land registry
- Finalising of the techinical cadaster works

The implementation of systematic land registration also implies the effective

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participation of the owners to the process, by involving themselves not only in the field activities, but also in the stage of the publication of results. [5]

Therefore, the citizens have to collaborate with the teams that gather field data by providing information regarding the identification of buildings they own. In the stage of the result publication, it is important that all the owners consult and analyse the published documents and confirm the accuracy of the data. The authorities, due to their official attributions, have a great importance in the process of systematic registration works.

The social aspects regarding the development of cadaster works must be taken into consideration. Within the communities of territorial administrative units that are subjected to cadaster works, might exist persons who may be prevented to express their rights regarding the held real estate property because of health condition or civil situation. During the systematic land registration works, special attention must be payed to the upper mentioned category.

The information managed is grouped into the cadastral land registry, which, together with the real estate cadastral register, the owner's alphabetical index, the owner's cadastral register, the cadastral plan and the annexes to part I of the land book form the organizational structures of the cadastral and legal records.

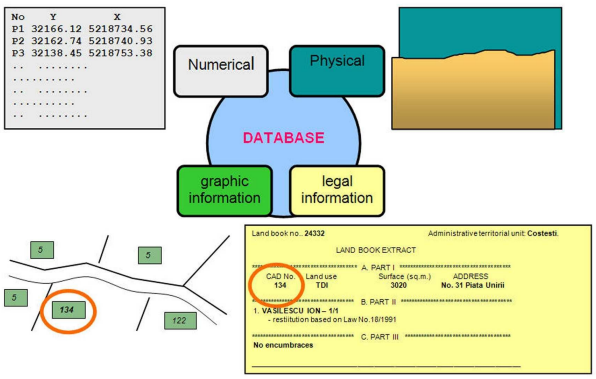

Fig.3 Cadastre and land registry unified database

Romania and The International Bank for Reconstruction and Development have ratified the Loan Agreement for the project concerning Complementing European Support for Agricultural Restructuring Project (C.E.S.A.R.), which is undertaken by The Romanian State, through the Ministry Of Development and Tourism, represented by N.A.C.L.R.

In 2011, within C.E.S.A.R. project, N.A.C.L.R. concluded contracts for systematic recording of properties in 19 administrative units, grouped into four lots.

Thereby lot 1 comprises some administrative units in the west of the country, such as Alba County, Timis County and Bihor County. Lot 2 comprises few administrative units situated in Mures county, Suceava county and Brasov County. Lot 3 comprises some administrative units in Olt County, Dolj County, Teleorman County and Galati County. Lot 4 includes administrative units from Calarasi county, Arges county and Dambovita County.

Two of these administrative units are fully completed, whilst other ones are almost concluded being at the stage of publication, processing requests for rectification or even in the phase of opening land books. There are some administrative units such as Albota and Ungheni where serious problems were encountered due to lack of the ownership titles and documents for construction.

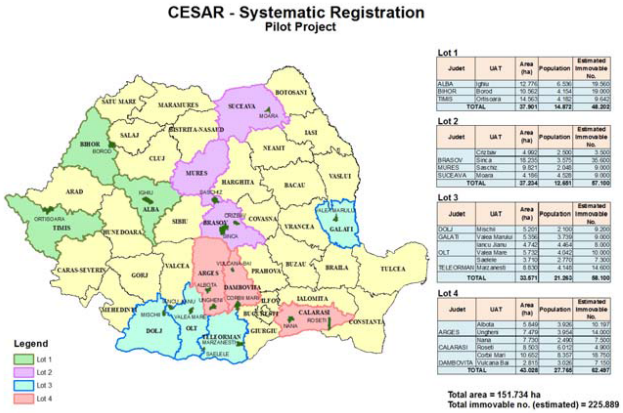

Fig. 4 Administrative units assigned for C.E.S.A.R Project 1-Romania

During 2012, N.A.C.L.R. has signed contracts for the achievement of systematic registration of properties for another 31 administrative units, grouped into 4 lots, as follows: lot 1 includes Arad County, with five administrative units, Bihor county with three administrative units and Timis County, with two administrative units. Lot 2 comprises administrative units in Alba county, Cluj county and Harghita county. Lot 3 comprises an

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administrative unit in each of Brasov and Mures County and four administrative units in Suceava County. Lot 4 comprises an administrative unit in each of Arges County, Calarasi County, Dolj County, Galati County, Olt County and 3 administrative units in Teleorman County.

Fig. 5 Administrative units assigned for C.E.S.A.R Project 2-Romania

Within these administrative units the land registration of the properties is not completed, because of the social and economical conditions, respective to the lack of funds from The International Bank for Reconstruction and Development. Thereby, the project is suspended till it will be found a source of finance.

4 Conclusion

Several general principles can be drawn from the systematic land registration activity, which contribute to the successful and systematic recording of the properties: the principle of free recording of the buildings; the principle of registering all the buildings of an administrative-territorial unit, with the identification of all the owners; the principle of mass registration in compliance with the field reality, in a short time and with low costs; the principle of the official character of the systematic land registration - his process takes place in compliance with the law provisions; the principle of opposability effect of the recordings in the land registry - according to this principle from the time of starting the land registry it is assumed that the third party is aware of the recordings made in the land registry.

When managing large targets, the mapping operations conducted to various aims constitute an often challenging process, involving very high costs and a long period of implementing. [6]

Although in 2010 in Romania the infrastructure for spatial information was poorly developed, now it has expanded particularly in local administrations by creating infrastructure on certain topics.

National Agency for Cadastre and Land Registration estimates that by the year 2020, in Romania, the process of recording the buildings, total amount of 6 million, will be completed, so that E-Terra can provide, in real time, all the information connected to each building in an administrative territory.

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