ASPECTS REGARDING THE NECESSITY OF A UNIQUE MANAGEMENT OF ALL THE CADASTRAL INFORMATION IN THE LOCAL PUBLIC ADMINISTRATION

Mihaela CARDEI, PhD. Stud. Eng.,"Gheorghe Asachi" Technical University of Iassy, email: cardei_mihaela@yahoo.com
Raluca Maria MIHALACHE (FICIUC), PhD. Stud. Eng.,"Gheorghe Asachi" Technical University of Iassy, email: rmihalacheficiuc@yahoo.com

Abstract: *This study is based on the premise that the necessary mechanisms involved in the decision making process in the public administration area are essential elements for every management system. One of the best solutions at the local level is the creation and development of a data base, as an implemented instrument used to sustain the institutional capacity, the local planning and progress, able to contribute when taking decisions for everyone's benefit. We are presenting the advantages of a SIC application for the local administration of the Holboca commune, Iasi district, based on the cadastral plan and the ortophotoplan. The application offers information about the properties, buildings and owners records and allows complex spatial analyses.*

Key words: *administrative area, cadastral plan, data base, properties, records.*

1. Introduction

One of the advantages of storing information related to cadastral services in digital format, due to the fact they have a common or compatible structure/format, is that they can be used in different network analysis for the purpose of accomplishing multiple tasks.

The general objective of our study is to create a relational database as the central element of the **Cadastral Informational System-SIC**, representing a structured collection of data and information, which is, in the same time, necessary and sufficient for satisfying the informational needs of their beneficiaries and users.

As the developed countries realised the importance of applying new technics (hardware and also software) to carry Cadastral Informational Systems, our country has started as well to be preocupied in the present to addopt such informational systems.

In order to achieve the Cadastral Informational System we need a digitalised cadastral plan and digital cadastral specific data. The advantages of digital use are incomparable. The most important are:

a. the stored data for the digital plan are positive and can be easily preserved; they can be displayed whenever we want on any scale;

b. the plans made this way allow a complete decision to solve any problem for any type of work (for studies, projection, application);

c. cadastral files can be easily used, being capable to respond to all interogations in a very short time.

To be able to use this cadastral digital data within the Cadaster Informational System, they must be integrated in a data base. This data base will allow the Cadaster Informational System to solve a series of problems in the local administration.

2. The necessity of implementing a unique database in the local administration

It has been ascertained that the volume of the data base can be diminished by establishing a application oriented system. This system is represented by an accessible database which can solve the requests of different users from a specific geographical area. The database will be conceived so that it can be used not only for special projects but also for the current management of the problems a local administration is confronted with.

At the same time, when creating the database we must keep in mind that the volume of information depends on every locality concrete characteristics; it depends also on the concrete applications, including the data type and storage and compression mode used by every system.

The first necessary step can be made by uniting all forces involved in creating and promoting informational systems in the local administration, in order to convince the decision factors of the advantages of using informatics, starting from the opportunity of using these applications and from the qualitative and quantitative advantages that can be obtained after exploiting such systems.

Therefore, a successful cadastral system has to have some of the following characteristics:

- to be flexible to legal and technical modifications;
- to protect and to guarantee the property right;
- to be simple, clear, accesible;
- to provide up-to-date and trustful information at a low cost (Sălceanu, 2009).

Thus, the following requirements will be aimed:

a. The improvement of the buildings register system and it's operational speed by implementing the data base at the institutional level;

b. Diminishing the gap between our country and the European Union by developing a modern idea in a most important domain;

c. Developing a favourable partnership with the interested institutions in order to modernize the cadastral domain;

d. To improve Romania's capacity to have competitive partners according to the European Union requirements.

The Cadastral Informational System has a fundamental importance in the public administration because it serves to:

- the management of Public utilities;
- the cadastral register of a locality's estates;
- town-planning;
- division into zones the urban territory for the purpose of establishing different levels of taxes;
- license building authorisations/notifications and Town Planning Certificates;
- assist and manage crisis situations;
- protect the environment;
- automate generation of specific reports and static situations;
- administrate the patrimony by locating and registering the patrimony objects etc.

SIC integrates data from different sources to derive intelligent and informed basis for planning and decision-making. Today Geo information application technologies are becoming

more and more significant in our country as they are increasingly gaining recognition within many organizations dealing with spatial data.

However, reliable and accurate databases have to be built up to be able to draw upon the potentials of GIS. Therefore, fundamental Geo information has to be put in place, which will include organizational changes, resource mobilization, policy frameworks and investments in data and data creation. GIS will simply not function otherwise. (Iordache, 2008).

Creating a database for the estates in an administrative territory represents a complex project which:

- facilitates the juridical circulation of the estates on the estate market and guarantees citizens property right;
- stimulates economical, logistical and social development, by improving the land register system for all the estates, with a high operational speed;

Making this project we are contributing to the developing of a domain situated at the border between scientific and technical knowledge, which stands among the prioritary national and international domains.

Related to the relevance of the theme, according to European research and interest, we must point out the fact that modernising and developing the Cadastre represents an European Union requirement also, and that making such a project in our country is in consonance with Romania's specific objectives.

Continuing this project and reaching the targeted objectives we contribute at the developing of an important domain. In the economic and strategic equation of a country, the Cadastre represents a fundamental institution on the basis of which the property right over the real estates is guaranteed and their patrimonial value is determined (Racovicean M., 2005).

The justification for creating a data base is given by*:*

- the high volume of information contained in the cadastral plans and the existing documentations at the public administration level;
- the perishability of the information analogic support and the difficulty to manipulate them;
- high personal expenses when it comes to obtain statistical reports and data;
- difficulties in interpreting and analising these data, in the case they are not very clear.

The echonomic impact of the project consists in the significant reduction of costs when making a cadastral specific evidence, the oportunity to transfer information between institutions and also a transfer in the cadastral operations modern management domain, in conformity with the experience other countries with excellent performances in this domain have aquired and the European Union requirements.

The social impact of the project guarantees the people property right, better working conditions for the employees of the institutions envolved in the project, learning and training opportunities and also the creation of new jobs.

The specific objectives of the study can lead to obtaining a data base for the estates from a specified administrative territory, implementing the data base into the interested institutions, using and interrogating the database, the automatization of the operations related to cadastral maintenance, and also technical assistance when implementing the database for the final users.

The expected results after using SIC assure:

a. the management and quick access to all the relevant information about the territory;
b. a high degree of security for the data;
c. a superior basis for territorial development;

d. basic data for other applications;
e. basic information for territorial planning and administration.

In conclusion, it can be mentioned that the creation of an optimised database will have a remarkable impact due to the complementarity of the approached domain and the directions we are willing to develop, and also knowing the informatic vacuum in this domain.

3. Case study

Holboca commune is situated in the south-east of Iasi region and it is geo-morphologically placed in the Moldavian Plane zone, the Jijia-Inferior Plane sub-zone. The total surface the Holboca commune covers is 5001 ha, including a number of seven villages (Holboca, Dancu, Orzeni, Rusenii Vechi, Rusenii Noi, Valea Lungă). **Orzeni village** stands at 4 km distance from the commune residence and they are connected by the communal road DC 20. It's surface is 77 ha within the built-up areas and a number of 1196 house-holds with 745 inhabitants.

The village architecture is dominated by buildings with one or two levels. Economically it's a developed village based on agriculture.

In this Case study we aim to realize a **Cadastral Informational System** able to assure the complete processing of all the existent information from the territorial administration and their implementation in public local administration and in other interested institutions.

We want to implement a data base at the local public administration level because there is no database. Our objective is to improve the cadastral register system and the operational speed.

The cadastral information is made of two elements: **graphical and text elements**.

The present study, besides reaching the main objective which is cadastral information management in a rural locality, by using GIS technologies, tries to help solving some existing problems in the General Cadastre Informational System by making an application that manages data from the general cadastre and develops the real estate advertising domain, and also to watch the evolution in time of the estates and the proprietaries of a rural locality.

A. Researching Instruments.

In this work, the following judicial acts and researching instruments were used:

a) Juridical base: General Cadastre in force judicial acts, and also those that regulate local public administration activity.

b) National and international methodologies, projects and studies.

c) GIS (Geographic Information System) applications, which have two distinctive aims: the administration and monitoring of the locality's territory and town planning development by conceiving and realising a database which can be exploited using different functions.

GIS techniques allow us to combine different types of information (tables, images, maps, etc.), all of them being situated under the direct coordination and determination of the human component.

B. Necessary data for the project

a. Graphical data:

- the cadastral plan of Orzeni village, Holboca commune, made in 1987-1989 and finalized in the year 1989;
- ortophotoplan made in 2005-2006 and the restored digital plan. Thus have been realised photogrammetric flights with digital equipment (ADS40 camera, ULTRACAM, LIDAR SCANNER camera) which has captured high resolution aerial digital images (GDS 5-

7,5 cm), the resulting pixels having 7,5 -10 cm. The captured images bands have a stereoscopic overlap of up to 90% , and the digital processing of the aerial photogrammetric images had the following result: automate aero-triangulation, automate DTM (digital terrain model), automate ortophotoplan with a high degree of precision, interpretation of the elements from the photograms.

b. text data:

- the rural land register from 1989 and 2005;
- owners register;
- property titles.

C. Subject matter.

In this study we have chosen, as a research area, a number of approximately 105 parcels from six cadastral sectors from the cadastral plan. For this area the digital cadastral plan for the two periods of time, the years 1989 and 2005, has been made and we also created the corresponding database using the existing information at the Holboca town hall. (Fig. 1, Fig. 2).

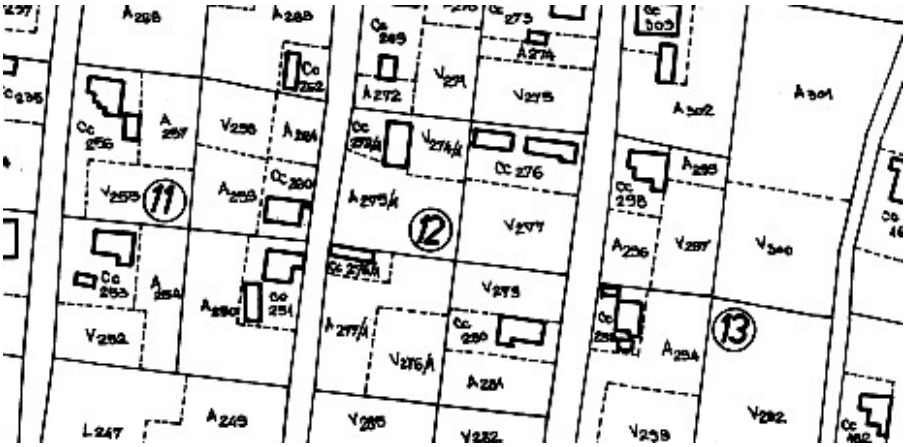

Fig. 1 Extract from the cadastral plan of Orzeni village, Holboca commune, Iaşi district.

Fig. 2 Extract from the ortophotoplan of Orzeni village, Holboca commune, Iaşi district.

Table 1. Parcels evidence based on their utilization category for the studied area.

Crt. Num.	Utilization category	Number of parcels	Surface (m^2)
1	**CC**	33	25585
2	**A**	43	47035
3	**L**	2	1917
4	**V**	27	22831
-	**Total:**	**105**	**97368**

Based on these information some conclusions resulted:

1. **Regarding the land register**, after analysing the ones from the years 1989 and 2005 we have discovered that some important information were missing, such as:

- information about the terrain;
- information about the buildings;
- data about the owners.

2. **The Owners register** made in 1989 includes information referring to the owners of the estates at that moment, consisting in parcel and utilization category, the surface and the field it belongs.

3. **After analysing the 40 property titles,** we have found irregularities and errors like:

- **Writing/drafting errors**. This errors are caused by the lack of training of those who made the titles or by the fact that a well structured data base regarding the estates in the locality is missing at the local councils.

As an example for such errors we can remember here the misspelling of the holders names (ex.), of the surface, neighbours, localities.

- the second type of errors are due to an **unstructured database** and the lack of the necessary information. Thus, the lack of cadastral and parcels plans, the lack of professionalism of the employees specialised in Cadastre from the local councils, lead to serious errors. For these reasons, errors appear regarding the field the estate belongs to (the field is missing or misspelled). In the case of the parcel, errors as the following types can appear: the parcel is missing, the parcel is misspelled (ex.:), one parcel is missing when the estate covers multiple parcels (ex.:), more parcels than the real number of parcels of the estate have been entered.

Thus, in the chosen area for the study, we have found 7 instances in which a parcels is registers on two property titles. For example, the parcels 179-181 are found in TP (property title) nr. 69213 and TP nr. 69499, the parcel 190 appears in TP nr. 70467 and also in TP nr. 71227, the parcel 252 appears in TP nr. 69671 and in TP nr. 69813, and the parcels 250, 251 are found in TP nr. 70708 and TP nr. 69506.

- **Errors regarding the surface** due to incorrect measurements or to false evidence. Another problem appears when the estate is improperly entered within the built-up area when, in reality, it is situated outside the build-up area, and vice versa.

- **Incongruity between the owners register and the property titles concerning the name, owner**, **parcel or surface**.

Thus, in the study area we have found many first name errors: Coteț **Ion** entered in the owners register instead of Coteț **Ioan**, entered in the property register; Blaga **Costică** entered in the owners register instead of Blaga **Constantin**, entered in the property register; State

Alexandru entered in the owners register instead of State **Alexandrina**, entered in the property title.

Names misspelling have been discovered: **Pamfil** entered in the owners register instead of **Panfil**, entered in the property title; **Apavel** entered in the owners register instead of **Pavel**, entered in the property title; **Harton** entered in the owners register instead of **Hariton**, entered in the property title (Table 2).

Table 2. Examples of errors related to the first and last name of the owners.

Proprietar

Proprietar_i	Proprietar_r	Proprietar_prenu	Proprietar_mentiuni	Pr
1	ZACORNEA	ALEXANDRU		
3	PAMFIL	NECULAI		
4	PAMFIL	ELENA		
5	PANFIL	STEFAN	PAMFIL	
6	COTET	PARASCHIVA		
7	ZACORNEA	CONSTANTIN		
8	COTET	IOAN	ION	
9	COTET	PARASCHIVA		
10	ROBICA	GHEORGHE		
11	PAMFIL	COSTACHE		
12	PAMFIL	DUMITRU		
13	ZORILA	MIHAI		
14	STATE	PETRU		
15	ANTIGHIN	IOAN		
16	COZIANU	VASILE		
17	ANTIGHIN	VIRGINIA		
18	ANTIGHIN	ELENA		
19	BLAGA	COSTICA	CONSTANTIN	

- After analysing the juridical nature of the 40 titles, it resulted that three of them were emitted based on the Law 1/2000, and the rest of 37 titles were emitted based on the Law 18/1991.

- We can notice that between 1989 and 2005 in the case of 32 parcels there are modifications regarding their owners, for example, the parcels 199,200,201 which in 1989 belonged to Rotaru Domnica, and in 2005 to Stroia Vasile.

- Another resulting conclusion is that in the year 2005, 16 parcels from a total of 105 are in the administration of the local council of the Holboca commune, no property title being emitted for these areas.

- In connection with the buildings we can observe that in the year 1989, from 47 buildings, 15 are not registered in the Town hall evidences, and in the year 2005, from a total of 74 buildings, 14 are not registered. We have also noticed that from 1989 to 2005, the number of buildings has grown.

4. Conclusion

The importance and topicality of this work consists in the fact that only trough cadastre can be analysed at any time the availability of resources, their status over time, how they are used in compliance with the requirements and conditions imposed by sustainable development.

The conclusions of the paper are:

a. When trying to solve the problems raised by the use of the Cadaster Information System and it's data base it came clear that to obtain such a system was very expensive, and this is why the legislation must be improved in the future, so that the responsable institutionsto allocate enough resources for personel training which is another critical problem in the present.

b. The tendency of developing the Cadastre Informational Systems comes from the necessity of using the terrain with maximum efficiency from an economical and urbanistic point of view, bringing remarkable contributions in creating the geodesic reference by using the satellite geodesic technologies.

c. We must stress the fact that the data from the Cadastre Informational System and from the General Cadastre have an apparent temporal finality, because the continuous changing dynamics require that the data to be frequently reflected/updated in the data basis, for a proper over time use.

d. In the future it is desirable to continue studying this theme, to find other issues that appear in practice and the appropriate sollutions to solve them, and also to carry, on a local level, a single Cadaster Informational System and a data base to serve it, which to allow the coordination of multiple activities such as: propery administration, tax collecting administration, notifications emission and utilities administration, etc.

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