

## Realization of the Systematic Cadastre in Romania

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### ABSTRACT

The cadastre in Romania has a long history, but since 2010, the Government has decided that it is time to carry out this type of work through a financing program, so that citizens can benefit free of charge from the tabulation of the immobile. Unfortunately, over time, there has been a lot of land allotment and nationalization, so it is difficult to determine the real owners of the land. In particular, the cooperation, which began in 1952 and ended in 1962, forced the peasants to cede land for the establishment of Agricultural Production Cooperatives (APCs).

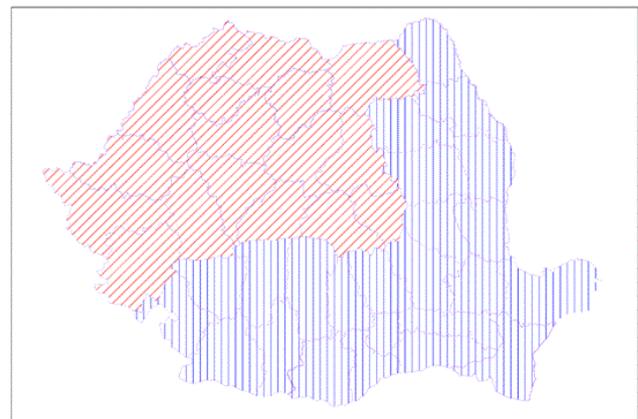
Since 1991, Law 18/1991 on the restitution of lands taken over by APC has been applied. This process did not end even today, so the cadastre program is facing great difficulties.

**Keywords:** Cadastre; Tabulation; Land book

### INTRODUCTION

The cadastre has a special importance because it refers to the property, and the property can be traded, mortgaged, capitalized. There is no other system of guaranteeing the property than its registration in the Land Book and thus the entry into the civil circuit. There have been several ways of registering property since antiquity, but the best developed is the Habsburg system, which laid the foundations of the modern cadastre. The Austrian Empire understood even since 1720 that it could collect taxes much simpler, more efficiently and more correctly using the cadastre with all three functions: technical, legal and economic [1]. Thus, by coupling a cadastral plan at the locality level, with the property documents, it was possible to reduce the risk of uncertainty at the level of identifying the property in a real way. There is also the Napoleonic system, based on the register of transcripts-inscriptions that was used mainly in the Latin area of Europe, but does not have the same effect. An immobile does not have a certain established position and thus can be traded several times [2].

In Romania there were both types of cadastral records. Thus, in the area occupied by the Habsburg Empire there was evidence based on the cadastral plan and property deeds as a whole. In the rest of the territory, respectively Muntenia and the south of Moldova, there was the register of transcriptions-inscriptions (Figure 1).



**Figure 1:** The property registration system in Romania in 1950- red-cadastral records of the Habsburg type, blue cadastral records of the type transcriptions-inscriptions.

Romania has gone through several property reforms that have been reflected in the cadastral record mode. Thus, the ruler Alexandru IoanCuza, in 1864, allowed the peasants to become owners and secularized the monastic fortunes. After the First World War, land was distributed to the peasants who took part in the war, and in March 1945 the great boyar fortunes were distributed and given to the peasants. With the establishment of the communist regime, the co-operation began, which ended in

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1962, a process that led to the takeover of agricultural land by the state and thus the Romanian peasant's sense of ownership was annihilated. In 1991, Law 18 was issued on the restitution of land owned before 1962. Possessions were made according to the syntagm "usually on the old site". If it was initially established that only 10 hectares are returned, regardless of the area with which the cooperative was entered. After a few years, the law was amended and 50 hectares were returned, and in 2000 it was agreed to return the entire area owned by the owner at the time of 1948. In this way, the putting in possession, in the vast majority, was made where there was free land, or depending on certain interests more or less objective [3].

## THE CURRENT SITUATION

Given all these transformations, in the two property registration systems there were malfunctions and irreparable damages. Thus, in the Habsburg Land Book area, after 1962, no more than isolated records were made in the suburbs, the evidence thus becoming obsolete. In the same area, recordings continued to be made in the built-up area. In the area of transcripts-inscriptions the situation was critical because in the co-operative areas, only 200 meters of yard were left in the built-up area; the rest was taken over by the Agricultural Production Cooperatives (APC). The privileged areas were those of high hill and mountain where there was no APC [4].

Law 18/1991 was poorly applied, in the sense that the measurements were made with rudimentary instruments, a compass of 2 meters, popularly called "goat". For this reason the lengths and widths of the immobile were approximate, depending on the opening of this tool (Figure 2).

The resulting plot plans had noted dimensions that in reality were usually smaller, because with the "goat" was measured anyway approximately, and the inclined distance, not the reduced one to the horizon, which is transposed on the plan. The topographic support was at a scale of 1:5000 or 1:10000, so a plot with a width of 10 meters could only be drawn crammed between two other small plots. The plan was illegible [5].



Figure 2: Measurements with the "goat".

Following these measurements, property titles were issued that had written: the name of the owner, the name of the administrative territory, the neighbors, strip ground and the plot

(Figure 3). These titles have 70% typos. In fact, the application of Law 18/1991, on land restitution, did not end even today [6].

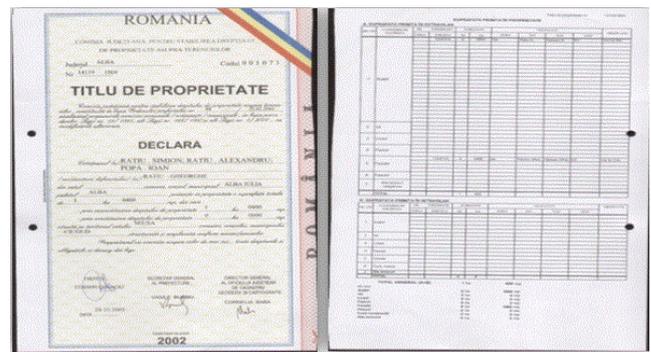


Figure 3: Title deed.

In 1996, Law 7, the Law on Cadastre and Land Booking appeared, which establishes the setting of a National Agency for the management of cadastral activity. Initially, the cadastre activity was carried out at the Agency and the Land Booking activity at the Ministry of Justice. Since 2004, the Land Booking activity was also moved within the National Agency for Cadastre and Land Booking. Unfortunately, in 10 years, Law 7/1996 has undergone dozens of changes over times that have created confusion among both:owners and specialists [7].

Since 1999, the Habsburg-type land book system has become mandatory throughout Romania. Thus, it became mandatory that, in the transaction of a immobile, it be registered in the Land Book. The tabulation is made at the request of the owner.

This time too, the quality was discounted and it was allowed that the cadastral documentation could be made in a local coordinate system, with the origin  $x=1000$  meters,  $y=1000$  meters. Most of the documentations were made this way, without a definite location, being able to be anywhere in Romania. On the plans 1:5000 or 1:10000 an approximate place was marked [8].

Only since 2007 have specialists been asked to work only in a national coordinate system, in order to have the exact location of the immobile.

In 2010, through a program of the World Bank, the project on completing the financial support provided by the European Union for the restructuring of agriculture-CESAR was started. The tabulation of the properties was done without the owners paying. This program was carried out on the basis of a loan agreement between Romania and the International Bank for Reconstruction and Development. The main objective of the CESAR project was to achieve a systematic cadastre in 50 rural administrative-territorial units (ATUs) in 16 counties of Romania. To date, not all ATUs included in the project have been completed [9].

In 2015, the National Cadastre and Land Book Program (NCLBP) were launched, which aims to fully register about 660 rural ATUs with non-reimbursable external funds from the European Union by 2023. Also list the agricultural land for which farmers receive subsidies from the European Community. For this reason, two types of tenders have been launched for the implementation of the systematic cadastre:

On the entire ATU

By cadastral sectors outside the built-up area, arable use category.

Currently, according to the situation on the ANCPi site, the situation is as follows:

96 fully completed ATUs;

By cadastral sectors, the record is not presented on ATUs, but on other criteria, given that many contracts have been terminated.

As can be seen, NCLBP is difficult to apply and has no chance of completion in 2023.

## REALIZATION OF THE SYSTEMATIC CADASTRE

In view of the above, ANCPi has started the program of free tabulation of the immobile, either on the entire ATU or on cadastral sectors. The action is based on some technical specifications and on the provisions of Law 7/1996. These normative acts have been modified arbitrarily over time, so as to satisfy some specific problems, without taking into account the opinions of the specialists who actually carried out the works. Thus, the technical specifications are at the fourth variant and Law 7/1996 probably at the tenth. Hence inherent problems, because the work was started on certain provisions, and other types of deliverables were required for delivery, in a different format [10].

The stages of accomplishing the systematic cadastre on the entire ATU:

1. Notification of owners through the public information campaign
  2. Identifying administrative boundaries
  3. Establishment of cadastral sectors
  4. Identification of immobile locations
  5. Identification of owners of real rights, holders and other possessors, as well as taking over the documents in original or certified copy
  6. Notification of the Chamber of Notaries for issuing heir certificates
  7. Updating the information collected from the field
  8. Publication and display, in accordance with the law, of cadastral technical documents
  9. Registration and settlement of appeals
  10. Opening of new land books
  11. Closure of systematic cadastral works and old records, by order of the Director General of the National Agency.
- These stages are performed by the executors of the work or by ANCPi, through the County Offices of Cadastre and Land Booking (OCPI) or jointly by these two entities. Stages 1, 4, and 7 are performed exclusively by the performers, stages 6, 9, 10 and 11 exclusively by ANCPi-OCPI, and stages 2, 3, 5 and 8

jointly. Stages 1, 5, 6, 8 and 9 are also attended by the City Hall on whose territory the work is carried out.

The stage of notifying the owners through the public information campaign is very important, because citizens should be aware of the importance of the work and the fact that it is vital to actively participate in its realization (Figure 4).

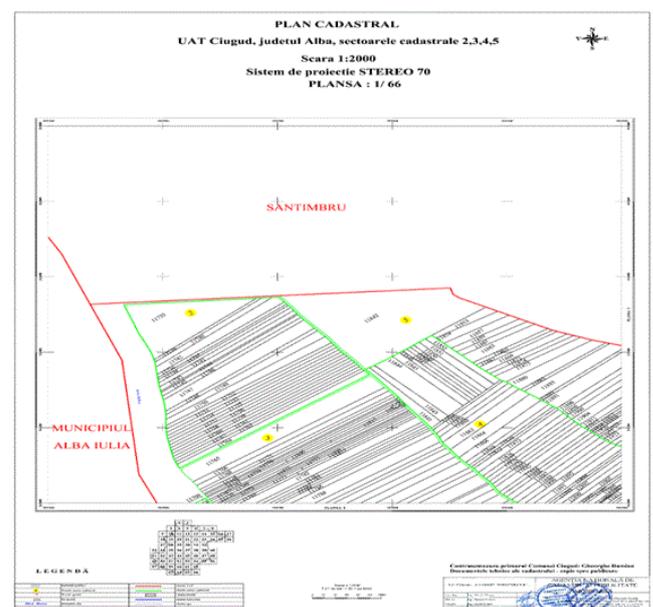
The position of the points that delimit the immobile is determined by field measurements or by identification on the orthophotoplan made by flight with UAV system. Measurements shall be made using GNSS receivers or, where this is not possible, the total station. The owners, or, if not possible, a representative of the City Hall, participate in the delimitation of the immobile.



Figure 4: Meetings for public information.

After the delimitation of the immobile, it is passed to the stage of identifying the holders of the real rights, of the possessors and other holders, as well as taking over the documents in original or in legalized copy of them. Basically, the executors, together with a representative of the City Hall, take from each owner the documents of origin of the immobile and establish the link between the position on the land and the deed.

Thus, the cadastral plan that is the basis of the tabulation of each immobile is made (Figure 5). At the same time, the GIS database is populated and will be downloaded to ANCPi's e-terra database.



**Figure 5:** Cadastral plan.

The documentation thus made is submitted to the City Hall for the cadastre specialists from the City Hall to verify and validate it. The verification period is 30 days.

After obtaining the validation from the City Hall, the work is uploaded in the e-terra database of ANCPI and enters the reception process at the territorial OCPI, to which belongs the ATU in which the work is performed.

The reception period is 10 weeks. If the work has less than 20% immobile with errors, then it is received. If the percentage of errors is higher, it is returned to the executor for correction. If the errors are not corrected even after the return, then they are returned once more. If the errors are not corrected and the works do not correspond, then the contract is terminated.

After passing the reception stage, the documentation is printed and displayed for 60 days in a public place in the ATU. The public place is usually the City Hall, the Cultural Center, the school, the gym, etc. (Figure 6).



**Figure 6:** Documentation with holders displayed for verification.

During this period of 60 days, each owner has the obligation to come to verify the data exposed: area, limits, neighbors, personal data, etc. They are helped by specialized staff of the executor, OCPI and the City Hall, so that they understand what is displayed. If certain data do not correspond to reality, then the owners can file appeals to correct the error. The settlement of appeals is done by a commission of OCPI, assisted by specialists from the City Hall. The executor of the work will put into practice the solution of the appeal.

The resolution of appeals takes 30 days from the end of the documentation display period.

Finally, ANCPI will print each conclusion and extract from the Land Book and each holder will receive them at home.

**Problems in the realization of the systematic cadastre**

About 70% of the property titles underlying the registration are wrong. These titles can mislead the executor in making the parceling plans because they often have the wrong strip ground, parcel, neighbors. It is very difficult to find exactly the position it occupies in the strip ground.

Weak involvement of the City Hall and local and central authorities in the information campaign: Both the City Hall and OCPI leave the information campaign to the executor who has no official capacity to mobilize citizens to participate in conducting measurements and identifying the boundaries of the immobile.

Poor participation of citizens in carrying out information activities, delimitation of buildings, collection of documents and verification of documentation to be displayed: This problem can lead to an incorrect identification of the boundaries of the immobile and thus to errors in registration in the Land Book, mistakes that can lead to disputes between neighbors. Also, if the holders do not check the displayed documentation, the data in the Land Book may be incorrect.

The subjectivity of OCPI employees regarding the error, upon reception of the work: As explained above, upon receipt of the work by OCPI, if the errors exceed 20% of the number of immobile checked, the work is returned to the executor for remaking. These errors are not defined anywhere in the technical specifications, so any non-compliance becomes an error, including material errors that are defined in the Civil Code, and that can be corrected when discovered, and that do not affect the entries in the Land Book.

Delay in reception deadlines by OCPI: In the contracts concluded between ANCPI and the executor there are provisions for the payment of penalties for delay of works, deliverable for the executor. Thus, the deadline of 10 weeks for the reception of the work is sometimes pushed to 6-7 months by OCPI, without any repercussion. The same goes for resolving appeals, instead of 30 days you can reach one year.

**CONCLUSIONS**

Romania is trying to achieve the cadastre of the entire territory in a very short time. The task is difficult and the measures are incoherent, they change from time to time, as there are punctual problems. Changing the legislation during the execution of the work creates confusion both among citizens and executors.

There is no coherent, long-term strategic plan so that there is predictability for executors and citizens. Solutions to improve the cadastral process in Romania:

It is necessary for ANCPI to consult the specialists involved in cadastral works, who have gained experience in preparing the documentation and who can make an essential contribution to the development of technical documentation and to the improvement of the legislative framework.

Initiating a campaign, at national level, to raise awareness of citizens and local administrations, the main beneficiaries of the systematic cadastre, about the benefits of this work, but also how they must collaborate to achieve a technically and legally correct work.

The government must understand the role of the cadastre in the economy, in the sense that a property with a registered cadastre can enter the civil circuit and thus become a source of well-being.

Tax collection on a real basis is also an advantage that the Government should consider.

The systematic cadastre is a real basis for creating a GIS on a given administrative territory.

## REFERENCES

1. Oosteroma PV, Lemmenbc C, Molenbc PD, Ploegera H, Quaka W, Zevenbergen J. The core cadastral domain model-Computers. *Environ Urban Sys.* 2006;30(5):627-660.
2. Aksana A, Schmidt IV, Vladimir A. Actual Aspects of Cadaster relations in the monitoring system of land and rural areas. *J Environ Manag and Tourism.* 2017;8(1):21-26.
3. Gabrovec D, Matej W, Kumer M, Peter A. Land-use changes in Slovenia from the franciscan cadaster until today. *Acta Geograp Slovenica.* 2019;59(1):64-81.
4. David W. The pre-urban cadaster and the urban pattern of leeds. *Annals Assoc Amer Geograph.* 1962;52(2):44-51.
5. Shala X, Meha M, Ahmedi S. Case study of the reforms on laws for the cadaster in the republic of Kosovo. *FIG Working Week.* 2015;17(5):1-15.
6. Basiouka S, Potsiou C. The volunteered geographic information in cadastre: Perspectives and citizens' motivations over potential participation in mapping. *Geo J.* 2014;79:343-355.
7. Basiouka S, Potsiou C. A proposed crowd sourcing cadastral model: Taking advantage of previous experience and innovative techniques. *Surv Rev.* 2016;12:419-433.
8. Mourafetis G, Apostolopoulos K, Potsiou C, Ioannidis C. Enhancing cadastral surveys by facilitating the participation of owners. *Surv Rev.* 2015;47:316-324.
9. Torhonen M, Salzmänn M, Kasperavicius R, Sas E, Hokkanen J. Sustainable governance of european cadastre and land registry agencies. *Proc World Bank Conf.* 2015;11:23-27.
10. Lengoiboni M, Lemmen C, Zevenbergen J. Innovative tools for tenure recordation: Documentation of overlapping and secondary land rights. *GIM Int.* 2017;31:41-43.