



UREĐENA ZEMLJA

Nacionalni program sređivanja zemljišnih knjiga i katastra

**ANALYSIS OF THE IMPACT
OF CADASTRAL SURVEYS AND LAND REGISTER RENEWAL
ON
LOCAL GOVERNMENT UNITS**

(Contract for Real Estate Market Assessment Service Provision no. MOJ-SGA/D/CQ/09/01R)



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For the publisher - Contact:

Mr. Igor Kreitmeyer, PIU Deputy Project Manager
Real Property Registration and Cadastre Project
Project Implementation Unit
Nazorova 50, 10000 Zagreb
piu@zikprojekt.hr
www.uredjenazemlja.hr

Author:

Zagreb nekretnine d.o.o.
Nova Ves 17
10 000 Zagreb



Translation:

Corinne Enquist
Maja Kuhta

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1. INTRODUCTION

Since the Republic of Croatia became independent, it has been faced with a great challenge of updating and harmonizing cadastre and land registers. For a great number of real properties, the existing information in cadastre does not correspond with the information in land registers and is often different from the actual situation. The basic reason for this is the historical heritage from the socialist times when the changes related to real properties were only recorded in cadastre, due to its tax characteristics or were not recorded at all. Another reason for such a situation is that the real property owners did not find it important to up-date the records on changes in cadastre and land register.

Such a situation of registers prevents or slows down the real property sale and other transactions, which causes additional costs to all participants on the real estate market. Also, it presents an obstacle to legal security in the real property transactions and the overall economic development. Apart from the afore-mentioned issues, the lack of up-dated records of cadastre and land register presents the main problem for planning and physical development, infrastructure projects, agriculture and environmental protection.

Having recognized the needs and significance of up-dated data in official real property registries, the Ministry of Justice and State Geodetic Administration have jointly and systematically implemented numerous activities in the past decade with the objective of having the status of real property registration regulated and land administration modernized in the Republic of Croatia. Apart from the regular activities and many bilateral projects, the most significant part of the reform is the Real Property Registration and Cadastre Project financed by the World Bank loan, state budget funds and European Union grants. Its main objective has been to develop an efficient land administration system and real estate market. In a wider sense, the real estate market would operate successfully on the basis of sporadic registration (individual procedures of clients). However, the harmonization of registers with the situation in the field would last several decades if it was implemented only by the procedures started by users. This would especially be the case for large infrastructure projects which, without exception, involve large surfaces of land and a great number of real properties owned by various owners, and which are impossible to implement in the conditions of non-harmonized situation between these two registers, or the implementation is significantly slower and more expensive.

Through the Program of state survey and real property cadastre, the State Geodetic Administration is encouraging systematic renewals of records, and in the last few years it has received a great number of requests from local government units to start new cadastral surveys in order to establish the real property cadastre and renew land registers in the area of entire cadastral municipalities. The interest exceeds the planned program and budgetary projections and requires extra capacities in cadastral offices and land registry offices of municipal courts. Different models of financing were used between 2003 and 2009. From the total number of 3315, the data has been renewed for 77 cadastral municipalities, and 185 cadastral municipalities are in the process of cadastral survey or in the procedure of public review of cadastral survey data with a simultaneous renewal of land register.

The Loan Agreement signed in January 2003, formally ends on June 30, 2010. Therefore, at the end of 2009, the development of the Analysis of the Impact of Cadastral Surveys and Land Register Renewal on Local Government Units (LGU) was requested, which would also include the private sector and economic trends in LGUs, as well as the impact on real property transactions (hereon: Analysis of cadastral survey impact on LGU).

The objective of the Analysis was to evaluate the economic influence of cadastral surveys on economic trends and development of LGUs (physical plans, utility fees, increase of economic potential and investments, employment, etc.). The Analysis is the result of an independent professional evaluation conducted by the *Zagreb nekretnine d.o.o.* (Zane) company within the Contract on providing the service of real estate market assessment no. MOJ-SGA/D/CQ/09/01R and overall activities of final assessments of efficiency, effectiveness and sustainability of the Project. At the same time, it points to the guidelines of the land administration reform continuation in the Republic of Croatia.



1.1. Abstract of the Analysis

The Analysis demonstrates the impact of the conducted cadastral resurveys and the renewal of land registers on local government units (LGU), and on other elements that are important for the process of harmonizing the data in the real property registers or rather that are important for achieving the real, final impact of these activities by enabling the use of the data renewed in such a way.

When collecting the information for this Analysis, we relied on the data collected from the relevant institutions, regardless of whether the data had already been announced and published or whether the data had been prepared for the purpose of this Analysis. The second manner of collecting the data was through in-depth interviews with the relevant target groups agreed in advance. The in-depth interviews tested the trends indicated by the previously collected data. In total, 15 respondents at five different locations (Zagreb, Rijeka, Zadar, Koprivnica and Požega) were interviewed.

When conducting the in-depth interviews, the unwillingness of the local government unit employees to be interviewed and, especially, to give concrete replies proved to be a great obstacle. We find the reason for this in them being unfamiliar with the topics, lacking concrete data when preparing for the interviews, not feeling certain as to whether they were actually authorized to provide such information, etc. This obstacle really affected the quality of the data collected at the level that was the most important for this research so efforts were made to compensate for this lack as much as possible by using other available data and by interviewing other respondents.

The most important functions and effects of the cadastral resurveys and the renewal of land registers - recognized during the interviews with the respondents conducted as part of this research, or rather identified by analyzing the data collected for the purpose of this research - have been additionally accentuated by the experiences and viewpoints of the consultant who has produced this Analysis. All the effects and functions have been elaborated in great detail in this Analysis and we are providing below an overview of the key points.

The benefits of the activities implemented as part of the Project have been unambiguously identified by concrete statistical indicators that also confirmed, where possible, the benefits of the conducted cadastral resurveys. Given the overall trend of the real estate market growth and other elements also affecting the performance indicators of relevance for the activities carried out under this Project, it has not always been possible to clearly isolate the impact of specific activities on the overall increase of a certain parameter. However, regardless of the concrete indicators or the concrete percentage related to a specific increase, it has been confirmed beyond any doubt that the conducted cadastral surveys and data harmonization have had a strong synergic effect and have, along with other market trends, contributed to the overall positive climate that has driven the market in the past ten years.

The implemented activities have affected the real estate market and the LGU's at several levels.

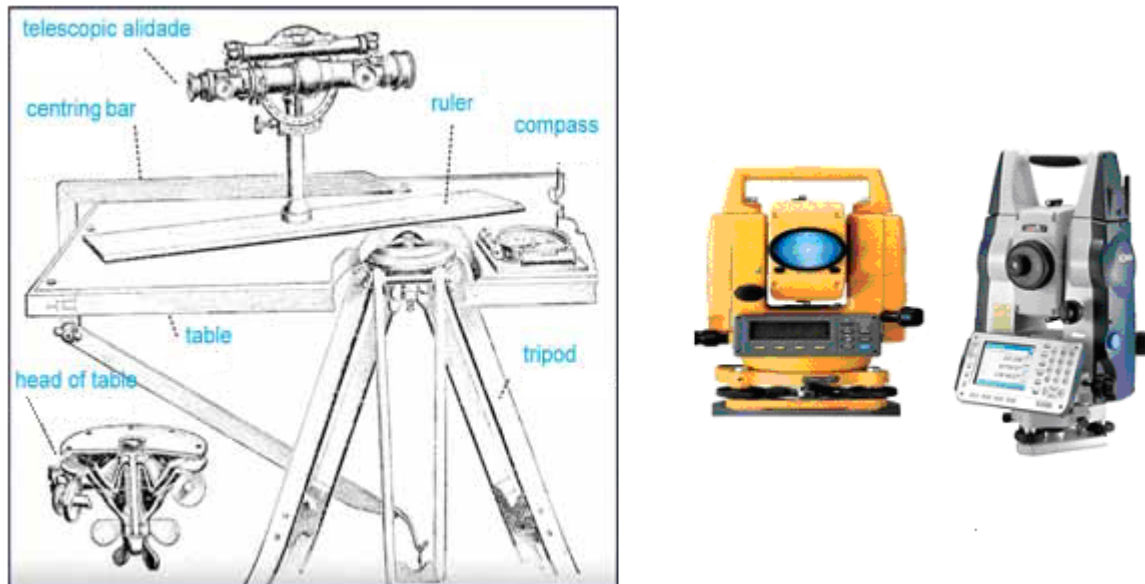
The implementation of cadastral surveys has been recognized as necessary for the establishment of new land registers (e.g. a survey has recently been completed in Knin and the establishment of new land registers is now underway) or rather for harmonizing the information in the existing land registers. Hereby, another segment needs to be especially emphasized although it has not been fully recognized by the respondents: increased value of the real properties conditioned by the completely regulated and transparent titles. This very aspect directly influences both the volume and the value of the real property transactions in a specific area while its indirect influence is visible in the financial aspects of such transactions: primarily the growing real property transaction tax revenues. In places where the data is harmonized between the cadastral municipal documentation (*operat*) and the land registers, the real property transactions have greatly increased, thus increasing the real property transaction tax revenues.

Furthermore, by using modern technologies during cadastral resurveys (satellite technology, photogrammetry, modern equipment for field surveys), the data of higher quality is obtained and can serve as the basis to better calculate and display the land surface. Thus, although it can happen that



the old surveys were well made and that no urban developments have taken place in the meantime, these resurveys define the parcels more precisely with regards to their area, shape and location.

Figure 1 A plane table with alidade Wild from 1927 and modern electronic surveyor's tools



Source: Review "Geodetic monuments– Coordinate System Origins of Cadastral Survey in Croatia", M. Solarić, Kartografija i geoinformacije, 2008/10; www.geo-net.hr; www.geo-mreza.hr

Furthermore, the resurveys officiate in the cadastre the actual situation in the field, thus harmonizing any possible differences between the actual situation in the field and cadastral records. This aspect is critical in the light of new projects since, provided that the situation is harmonized, it enables to fully exploit the profit potential of the real property development projects through optimal developments and the spatial structure. In other words, the possibility of creating a conflict with the neighboring property owners is reduced, the real property area is used to the maximum, it is possible to recognize more concretely the needs of future users and, thus, define the spatial structure that will allow the fastest and most efficient commercialization, etc.

The resurveys are also important in the case when the existing cadastral municipal documentation has been modified several times so the cadastral map has become illegible and the possibility of misinterpreting it is great.

The cadastral resurveys and the renewal of land registers are also very important for implementing the physical planning processes and they greatly contribute to the implementation aspect of physical plans. In the areas where the resurveys have been carried out, it cannot happen that the physical plans envisage the uses that are impossible to realize under the given ownership conditions. A precondition for the good spatial planning and economy is the regulated and accurately described real property.

The harmonization of the land registration status and the status of the cadastral municipal documentation through cadastral resurveys also significantly influences large infrastructural projects that, without exception, involve large land tracts and a large number of the real properties owned by various owners, and that cannot be carried out or can be carried out at a much slower and more expensive pace, given the discrepancy between the two registers.

The resurveys, the registration of as many real properties as possible in the cadastral municipal documentation and the regulation of the actual real property ownership relations has enabled the utmost exploitation of these real properties in terms of calculating and charging the legally stipulated utilities, fiscal and other costs. This has empowered the LGU's and Republic of Croatia to generate



bigger revenues from the above-mentioned sources. This is also an area of special interest and has been extensively addressed in Chapter 5.1 of this Analysis.

Apart from the potential to increase the revenues of the local government units (LGU's) and RoC generated by identifying the titles over the real properties, this point also significantly affects the optimal management of the real properties. This is very important when defining the special entrepreneurial zones and similar locations that strongly influence the overall development of the economy in a certain region as well as the higher employment rate, growing number of companies, increased private income, etc. It is also possible to apply the same in order to best develop the infrastructure, determine the fair market value for such real properties, etc. These aspects are addressed separately in Chapters 5.1 to 5.8 of this Analysis.

Given the complexity of conducting cadastral surveys and the overall data harmonization procedure, it is clear that such projects require time and money. During the interviews, the respondents recognized these constraints, especially in terms of high costs and protracted procedures.

The results of this Analysis confirm that a strong synergy has been achieved by harmonizing the situation in the cadastral municipal documentation and in the land registers which has provided an impetus to the real estate market and supporting industries by influencing the market from various aspects, or rather that this represents one of the strongest incentives to the economy as a whole in a situation where the data has been harmonized to a high degree.

Given all the positive effects of the conducted cadastral surveys and data harmonization described here and taking into account further possibilities for establishing the fully harmonized data on the real property status and ownership in the cadastre and land registers, the common impression of all the parties involved in this research is that the cadastral surveys and data harmonization should certainly continue depending, of course, on the available resources and that the actual and concrete objectives to be fulfilled by these resurveys should always be respected when defining the order of priorities in which various RoC parts will be surveyed.



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Figure 2 Cadastral map of Stari Grad from 1902 with additional changes up to 2003 (the Branch Office of the Regional Cadastral Office Split in Stari Grad)



Source: Original scientific paper "Cartography of Stari Grad on Hvar", B. Stančić, M. Lapaine, Kartografija i geoinformacije, 2009/11

Figure 3 Land Registry Books from Land Registry Office at Municipal Court in Split



Source: Slobodna Dalmacija



2. OVERVIEW OF THE RESEARCH METHODOLOGY AND SAMPLE DESCRIPTION

The following two research procedures have been applied:

- a) Desk research – collecting specific data
- b) In-depth interviews with relevant target groups

2.1. Desk research

Desk research or research at the desk is the collection of secondary data of interest. Secondary data is the data that is not collected, processed and published for the purpose of this Project evaluation but has existed before.

The desk research objective was to collect the relevant, exact data that can be used to evaluate the impact of the conducted cadastral resurveys and the renewal of land registers on local government units, economic trends and the development of the private sector in them. The data was collected on the budgets/revenues of the local government units before and after conducting the procedures of cadastral surveys and land registry renewals, as well as was the data on other indicators of the economic development and real estate market.

The data was gathered at the following two levels: a) for the entire territory of Croatia, b) for the selected five locations (Zagreb, Zadar, Rijeka, Koprivnica and Požega).

The very application of this method involved searching for the information published by various sources that might have the data of interest. The data was accessed in the following two ways:

- a) by using the available information published on-line or in the form of books, magazines or newspapers; and
- b) by requesting the information from the institutions that we believe might have such information.

The process of the data collection and its elaboration until the final insertion into the research report consisted of several stages:

- Collection of the information from available sources
- Information analysis. It consisted of the following several steps:
 - detect lacking or illogical information and continue with the collection of information in order to complete the information and remove inconsistencies
 - remove duplicate information collected from different sources
 - assess the importance of all collected information
 - select the most important information
 - group the information into logical entities
 - insert the information into the preliminary draft of the report in a standardized form in terms of fonts, tables, graphics, etc.
 - and offer comments on the information, where necessary.

Some of the data collected are shown as a fixed-base index defining the relevant, quantitative changes. The fixed-base index is the computed indicator expressing the change over a certain period in relation to the chosen base period. The index value is 100 (initial value, no changes with regards to the base period) as compared to the null value (denotes a percentage drop of the measured phenomenon) or the value exceeding 100 (denotes a relative percentage incline of the measured phenomenon). The value of the percentage incline or decline can easily be calculated as the absolute difference between the index value over a certain period and number 100 serving as the point of reference.



2.2. In-depth interviews with relevant target groups

The in-depth interview objective was to complete the evaluation of the impact of the Real Property Registration and Cadastre Project on the real estate market and on the wider economic climate in Croatia as well as at the selected locations.

The in-depth interviews provided a clear and complete picture of the real nature of the impact of the conducted cadastral resurveys and the renewal of land registers on the Croatian real estate market and economic trends. Without having conducted the in-depth interviews and interviewing the relevant participants, it would have been impossible to give the general assessment of the Project impact and interpret the collected data in a meaningful way.

The recruitment was performed by phone from the Puls Agency office in Split. The in-depth interviews were conducted by the specially trained moderators from Puls Agency who were experienced in conducting in-depth interviews, had received the basic training on the meaning of the in-depth interviews and the rules for conducting in-depth interviews (impartiality, offering no suggestions, further questioning of answers which are not sufficiently elaborated but are important statements by the respondents, keeping the interview on track and not allowing to stray from the topic, etc.) and who had been specially trained by all the members of the research project, familiarizing them with the real estate market issues as well as the basic terms and modalities of the market functioning.

The in-depth interviews were conducted at the time and place most favourable to the respondent. At the outset of the interview, the moderator briefly introduced himself/herself and explained the topic and objective of the research process. During the interview, the moderator had a manual on how to conduct the discussions in front of him/her to which he/she loosely stuck while the entire conversation was taped. The in-depth interviews lasted between 30 and 60 minutes.

After the in-depth interviews conducted in the field, all conversations were transcribed. The transcripts served as the basis for the quantitative analysis of the collected data.

The main principles of analyzing the statements and reaching the conclusions are as follows:

- The statements made by several respondents were especially important and were taken to represent the basic conclusions about the respondents from a given group/location and about the market in general.
- The interviews of the respondents who had provided much information, better elaborated their statements and shown a higher degree of familiarity with the situation and the ability to view a situation from several perspectives were singled out in the process of the response analysis and their statements received greater importance.
- A separate aspect of the Analysis was the double-checking of inconsistent statements. The double-checking considered how many pro and con statements related to a certain aspect had been made, the degree of familiarity among the respondents, the existence of some kind of a contextual variable (e.g. location, group of respondents, market segment et al.) that might explain the difference in opinions. After such an analysis, the conclusions were made about what to do with the conflicting statements and assessments of the respondents, and the final viewpoint was then inserted into the report. Mainly, the contextual variables (location and segment of respondents as well as specific experiences) were important in order to understand the answers that appeared inconsistent.

In total, 15 respondents from three groups at five different locations (Zagreb, Rijeka, Zadar, Koprivnica and Požega) were interviewed. The groups were as follows:

- representatives of local government units or tax authorities: persons with at least five years of working experience related to the purchase agreements, real estate market, budget, etc.
- heads of cadastral offices
- land registration judges



The respondents' structure is given in Table 1 while Table 2 shows the structure of respondents by group along with the information on the institutions where a respondent is employed and his/her function.

Table 1. Respondents' structure

	Location					Total
	Zagreb	Rijeka	Zadar	Koprivnica	Požega	
Representatives of local government units and tax authorities	1	1	1	1	1	5
Heads of cadastral offices	1	1	1	1	1	5
Land registration judges	1	1	1	1	1	5
Total	3	3	3	3	3	15

Table 2. Structure of respondents and the institution where a respondent is employed and his/her function

	Location	Institution	Position
Local government unit representatives	Zagreb	Municipal Office for Legal and Real Property Affairs and City Property of the City of Zagreb	Officer
	Rijeka	Administrative Department for Urban Development and Physical Planning of the Town of Rijeka	Department head
	Zadar	Administrative Department for Finances of the Town of Zadar	Department head
	Koprivnica	Administrative Department for Utilities Management, Physical Planning and Environmental Protection of Koprivnica	Department head
	Požega	Municipality of Brestovac	Head of municipality
Heads of cadastral offices	Zagreb	SGA, RCO in Zagreb	RCO head
	Rijeka	SGA, RCO in Rijeka	RCO head
	Zadar	SGA, RCO in Zadar	RCO head
	Koprivnica	SGA, RCO in Koprivnica	RCO head
	Požega	SGA, RCO in Požega	RCO head
Land registration judges	Zagreb	LRO MC Sesvete	Head registrar
	Rijeka	Municipal Court in Rijeka	LR judge
	Zadar	Municipal Court in Zadar	Court president
	Koprivnica	Municipal Court in Koprivnica	LRO Head
	Požega	Municipal Court in Požega	Court president



3. OVERVIEW OF THE ACTIVITIES CONDUCTED AS PART OF THIS RESEARCH

3.1. Desk research

The majority of the data collected by desk research comes from the following sources:

- data of the local government units and
- data of the Real Property Registration and Cadastre Project.

The data was gathered in the following two ways:

- by browsing the data published on the Internet,
- by sending specific queries for the more detailed data to the above-mentioned institutions, if the relevant data was not published on the Internet.

Budgetary revenues of the local government units were the data that was relatively difficult to obtain. Certain budget details were published on the Internet pages of some towns but they rarely dated back several years. Official bulletins of the towns were one of the valuable resources. Their archives contain the information about the past several years as well as the budget information. Official queries were sent for parts of the data but were often ignored by the staff. Local government units were contacted by phone and they then submitted the information but some sent only partial information. It took one whole month to collect all the budget information represented in the report.

The data of the Organized Land Project was delivered swiftly at request and was very useful for the research topic.

3.2. In-depth interviews

The recruitment of the respondents took place between October 7 and November 3, 2009. In total, 12 hours were spent on calling and arranging for an interview or 48 minutes per interview on the average. This refers to the time spent only on telephone calls which includes calling, presenting the request, finding the target respondent, agreeing on the interview schedule, repeated calling when the agreed interview had been cancelled and attempts at renewing the arrangements.

The research client confirmed the list of respondents who, according to the research client's estimate, were relevant to give answers to the questions on a specific topic.

In order to agree and set up an interview with a local government unit representative, up to 30 calls were necessary while no more than a dozen calls per respondent on the average were necessary for the head of cadastral offices and land registration judges to agree on and take part in an interview.

In case of the land registration judges and heads of cadastral offices there were no rejections and the respondents contacted gave their consent for the interview. The problem with them was to establish the contact with them and agree on an interview. Within 2-3 days of the initial contact, the interviews were scheduled and the respondents adhered to the schedule.

More difficulties were encountered with the local government unit representatives and there were respondents who wanted to direct the invitation to participate in the poll towards „higher“ or „lower“ instances. The beneficial point was that they could recommend the participants who might participate in the poll and that we had a relatively wide database of potential respondents. In this segment, it was extremely difficult to find a respondent from the list at all; secretaries and other colleagues were giving instructions as to when and whom to call along with their own estimates on the relevance of the targeted respondent for the research topic. As a rule, the calling procedure (difficult access to the respondents, inability to strike an agreement, sending letters about the research, further recommendations on the relevant respondents) was always repeated even with the colleagues giving recommendations.



Table 3. Statistics of the persons contacted

	Total number of persons contacted	Refusals	Other reasons for not participating *	Interviews performed
Representatives of local government units and tax authorities	17	6	6	5
Land registration judges	5	0	0	5
Heads of cadastral offices	5	0	0	5

* inability to contact the right person, to agree on the time for the interview, cancellation of the agreed interviews et al.

The general impression of the recruiting staff was that the recruitment was extremely demanding. Some scheduled interviews were cancelled and quite a few calls had to be made before an interview was agreed upon and carried out. The background for such a protracted and demanding recruitment process was as follows:

- Interview duration: the plan was 30-45 minutes. All potential respondents had quite a few obligations and were busy so it was not easy for them to schedule an interview.
- The respondent was not sure as to whether it was allowed to provide such information: Consents were asked as well as the text of the questions to be asked. Sending clarifications and letters facilitated the recruitment.
- Participants doubting their own relevance. Quite a few questions were asked about different aspects of the renewal of the cadastre and land registers so the respondents often and objectively thought that they could not offer a relevant opinion and/or data for some parts.
- Saturation with polls: negative attitude towards the polls in general; pressure to constantly participate in some kind of research, etc.

Two facts positively affected the recruitment process and the respondents' readiness to participate in the research:

- a) invoking the research client's name and the letter about the research compiled by the research client,
- b) being socially useful by participating in the research.

The in-depth interviews were conducted between 14 October and 5 November 2009. All transcripts were made by 9 November 2009, containing in total over 145 textual pages (A4 format, font size: 10, single line spacing).



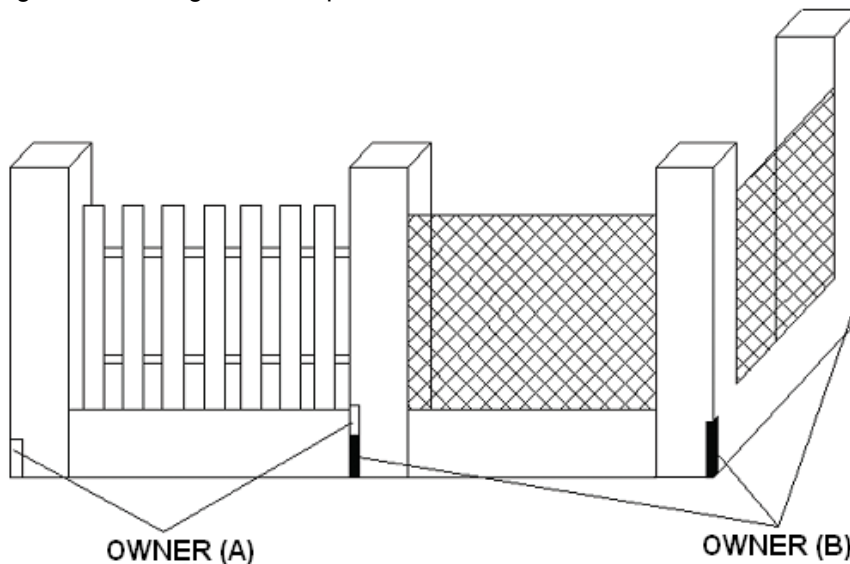
4. OVERVIEW OF THE CONDUCTED CADASTRAL SURVEY PROCEDURES AND THE RENEWAL OF LAND REGISTERS

Although significantly improved in the past few years, the process of cadastral surveys and of officiating the new data has always been complex, long and expensive, and is conducted in the cadastral municipalities where the data status recorded in the cadastre and land registers mismatches to a large extent and does not reflect the actual situation. Depending on the situation at hand, either a complete resurvey is carried out by surveying the entire cadastral municipality or a technical reambulation is performed, aimed at carrying out partial surveys.

The process of surveying begins with the decision of the State Geodetic Administration to conduct a cadastral survey while the Ministry of Justice must give consent for the surveying to start.

The geodetic survey process is performed by licensed geodetic companies selected through a public bidding procedure. In parallel with the surveying procedure, the citizens are informed about its implementation and are asked to stake their borders. During the survey, the contractors collect the data on the cadastral parcel title holders on the spot. Based on the geodetic survey, a new digital cadastral map is being produced, showing the parcels reflecting the actual situation in the field, along with the new evidentiary lists (*popisni listovi*) with the up-dated information on the parcel title holders. This is followed by a court and cadastral public review procedure to which the persons recorded in the cadastre and land registers are also invited. The persons participating in the public review may give their objections to the status of the records based on surveys and the respective commission is obliged to consider all the objections. The public review may, for this reason, last as long as several years.

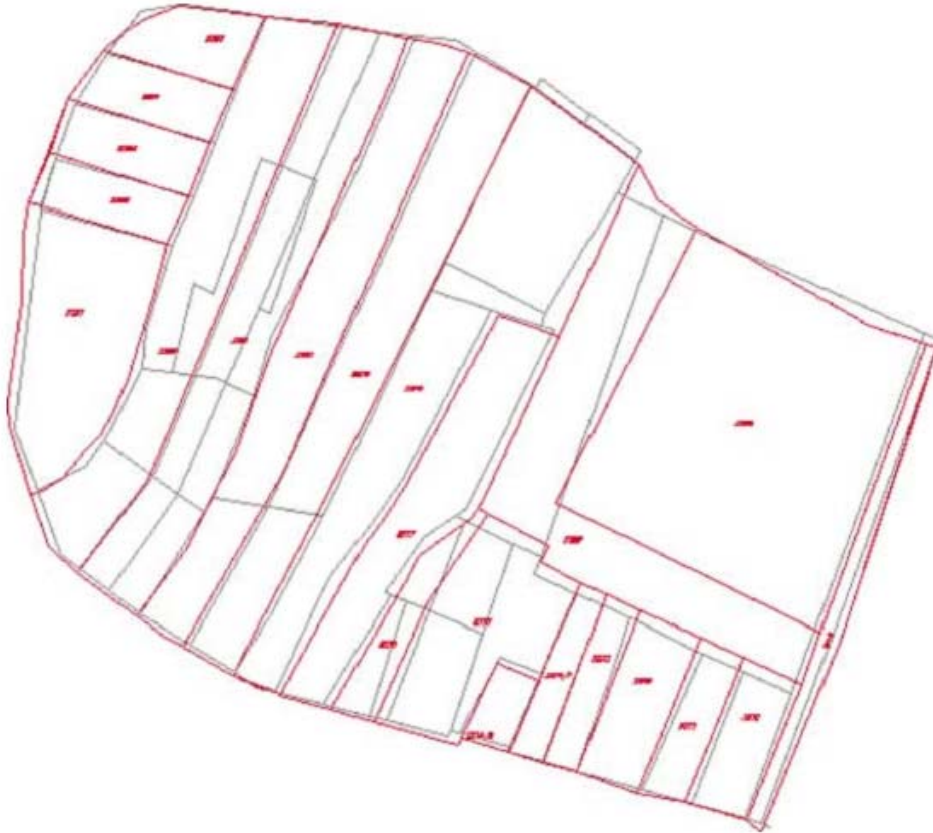
Figure 4 Staking cadastral parcels' borders



Izvor: Ekscentar – Journal of the Students of the Faculty of Geodesy, University of Zagreb



Figure 5 Existing Cadastral plan (grey color) and cadastral plan based on the new geodetic survey (red color) overlap



Izvor: Geodetic Journal 2006/4

During the survey, the land registry clerks produce new land registration files containing the data on cadastral parcels and title holders, and reflecting the actual situation. After the production of all the files for the cadastral municipality where the survey has been conducted, the Ministry of Justice passes the decision to open a new land register and close the old register. At the same time, the SGA Head Office passes a decision to start using the new municipal cadastral documentation (*operat*) as official.

The process of surveying is completed by placing the data in the cadastre and in the land registers in official use and the result of the process is the mutually harmonized data in the cadastre and land registers reflecting the actual situation in the field.

In the past few years, the efficiency has visibly improved in terms of contracting and implementing cadastral surveys as well as reducing the unit prices of the surveys themselves because of a number of new technical improvements (e.g. CROPOS, a system enabling the point determination in the entire territory of the Republic of Croatia, and its integral part GPPS – geodetic precise positioning service) and organizational advances such as, most notably, the cooperation and joint work between the representatives of the cadastral and land registry offices taking part in the working groups that carried out public displays of the data collected by cadastral surveys and the renewal of land registers.

Table 4 shows the trend of the cadastre and land register renewal in the Republic of Croatia between 2000 and Q1 2009. Before the outset of the Organized Land Project implementation, the surveys in three cadastral municipalities had begun and 5 new land registers had been opened. After launching the Organized Land Project, regular activities of the relevant institutions have intensified and the renewal of 109 cadastral municipalities has begun while new land registers have been opened for 78 municipalities where the cadastral municipal documentation has been put in official use.



Table 4. Statistics of harmonizing the renewal of the cadastre and land registers for the Republic of Croatia between 2000 and Q2 2009.

	Cadastral municipalities having started establishment/renewal in this quarter	Opened new EDP LR harmonized with the cadastre	
		No. of CM's	Number of parcels
	No. of cadastral municipalities (CM)		
2000	1	2	3.928
2001	1	0	0
2002	0	0	0
2003	1	3	33.893
2004	8	3	6.117
2005	20	14	34.167
Q1 2006	5	1	1.822
Q2 2006	14	1	453
Q3 2006	7	2	1.925
Q4 2006	3	3	9.458
Q1 2007	3	1	1.294
Q2 2007	3	4	2.978
Q3 2007	3	4	7.439
Q4 2007	6	2	12.499
Q1 2008	5	9	25.090
Q2 2008	11	8	20.010
Q3 2008	5	3	10.046
Q4 2008	2	4	12.075
Q1 2009	7	10	15.807
Q2 2009	4	4	5.859
Total	109	78	204.860

Source: Organized Land

The following tables and graphs give an overview of the conducted processes of the cadastre and land register harmonization at observed locations, overview of the processes of the ongoing land register renewal (public review initiated) and overview of the cadastral municipalities with ongoing geodetic surveys.

The data on the cadastre and land register harmonization in the observed towns indicates that the harmonization process has made the biggest progress in Zadar where 11 out of 63 cadastral municipalities have implemented the process of the cadastre and land register harmonization. Furthermore, another 9 cadastral municipalities are being harmonized in Zadar and 7 cadastral municipalities are undergoing geodetic surveys after which approx. 43% of cadastral municipalities under the jurisdiction of the Zadar RCO will be harmonized with the land registers.

The total area of the parcels harmonized also indicates that harmonization has been most successfully performed in Zadar, followed by Požega where approximately half of the total area is covered by harmonized parcels. Koprivnica and Rijeka have a smaller area of harmonized parcels but the harmonization underway in these areas could soon change the situation. There are no harmonized cadastral municipalities in the area under the jurisdiction of the MC in Zagreb but the harmonization process is nearing its end in 3 cadastral municipalities.



Table 5. Overview of conducted processes of the cadastre and land register harmonization at selected locations

	Total no. of cadastral municipalities	No. of opened land registers	Cadastral municipalities where harmonization has been performed	No. of harmonized cadastral parcels	Total area of harmonized parcels (m ²)
Koprivnica	47	1	Jagnjedovec	3.059	13.735.094
Požega	107	8	Gradac, Brestovac, Dolac, Nurkovac, Završje, Knežci., Zarišlac, Vidovci	7.457	43.180.006
Rijeka	38	3	Kraljevica, Kostrena –Lucija, Bakarac	13.788	13.853.879
Zadar	63	11	Nin-Zaton, Petrčane, Luka, Dragove, Grbe, Soline, Veli rat, Vir, Vrsi, Ninski stanovi, Premuda	42.781	97.793.862
Zagreb	50	0	---	---	---

Source: Organized Land

Table 6. Overview of the process of the cadastre and land register harmonization underway at selected locations

	Total no. of cadastral municipalities	No. of CM's being harmonized	Cadastral municipalities being harmonized (public review begun)	No. of parcels being harmonized
Koprivnica	47	3	Gola, Reka, Legrad	16.898
Požega	107	0	-	0
Rijeka	38	3	Šmrika, Kostrena Barbara, Sušak	13.789
Zadar	63	9	Sukošan, Dragove, Žman, Poljice, Poljice Brig, Žerava; Privlaka, Ražanac, Gorica	27.114
Zagreb	50	3	Blato novo, Centar, Trešnjevka	15.094

Source: Organized Land

Table 7. Overview of the process of the geodetic surveys underway at selected locations

	Total no. of cadastral municipalities	No. of municipalities where survey is underway	Cadastral municipalities being surveyed
Koprivnica	47	0	-
Požega	107	0	-
Rijeka	38	4	Bakar, Kostrena Barbara – dio Urinj, Draga, Stari Grad
Zadar	63	8	Poličnik, Ražanac, Radovin, Bokanjac, Crno, Diklo, Veli Iž, Mali Iž
Zagreb	50	3	Blato novo, Centar, Trešnjevka

Source: Organized Land

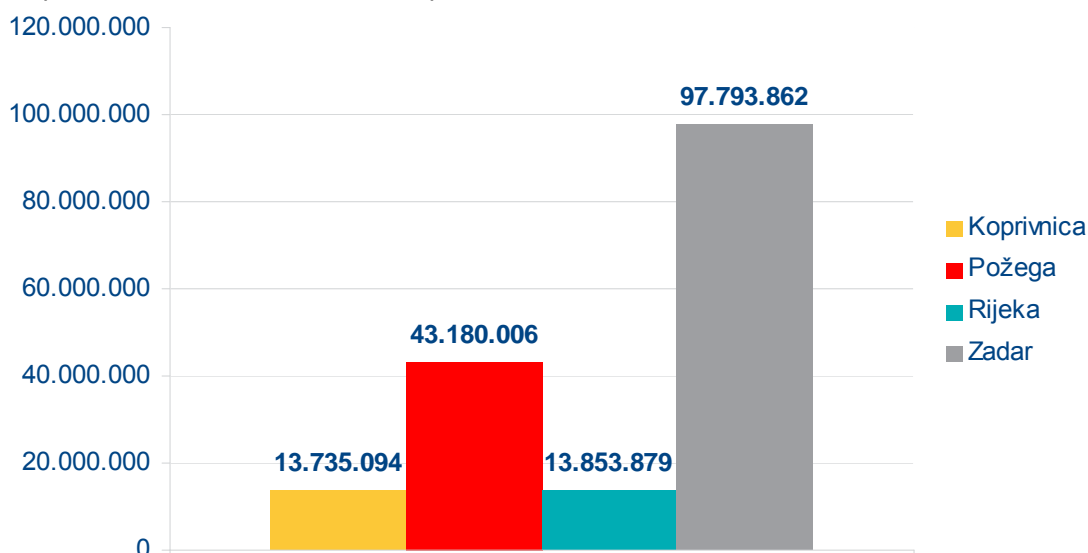


Figure 6 Geodetic survey point at Cadastral Municipality of Klana at Regional Cadastral Office Rijeka



Source: www.klana.hr

Graph 1. Total area of harmonized parcels at selected locations in m²



Source: Organized Land

At the level of the Republic of Croatia, 2.05% out of the total of 3,315 cadastral municipalities were harmonized by the first half of 2005, the public reviews of cadastral surveys and renewal of land registers are underway in 1.84% of cadastral municipalities and the surveys are underway in 3.11% of cadastral municipalities. According to the application reports (*prijavni list*) from the cadastre, 3.47% of parcels were harmonized between 2003 and first half of 2009.

Overview of the effects of the implementation of cadastral resurveys and the renewal of land registers on the example of the town of Zadar

In the area of Zadar, great progress has become visible due to the activities implemented as part of the Project. In 2003, it had a backlog of 12,561 unresolved cases (average time for processing one file amounted to 5 years), the records on entering and processing cases were kept manually and there was a high degree of mismatching data between the court and cadastral records and the actual



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situation (harmonization estimate: 25-30%). After the intense process of renewing the cadastre and land registers, the court has been brought up-to-date (regular cases are processed within 6 days, mortgages within 2 days) and the cases are kept, recorded and processed exclusively in the IT system. There are 30 land registry clerks, 8 licensed land registry clerks, 4 court advisors and 1 judge employed at this municipal court. Apart from this, partnership has been struck between the municipal court and the cadastre which involves a common vision, daily (ad hoc) contacts, periodical analyses (monthly status and project progress analyses, program of measures to overcome certain obstacles and improve the operations etc.) as well as joint development plans.



5. AREAS OF INFLUENCE ON LOCAL GOVERNMENT UNITS

5.1. Impact of the conducted cadastral resurveys and the renewal of land registers on the local government unit budgets

We consider the impact of cadastre and land register renewals on the local government unit budgets as one of the most significant impacts yielding the greatest potential. Although the conducted cadastral resurveys have undoubtedly led to the better managed and better recorded real properties and thus greater revenues from the related taxes, it has not always been possible to clearly isolate the influence of specific activities on the general rise of a certain percentage, given the overall trend of the real estate market growth and other elements that are also affecting the performance indicators of relevance for the activities carried out under this Project.

However, regardless of the concrete indicators or the concrete percentage related to a specific rise, it has been firmly established that the conducted cadastral surveys and data harmonization have had a positive effect on the growing revenues from the real property exploitation, and this segment has been addressed in detail below in this chapter.

The interviewed land registration judges and heads of cadastral offices believe that the budgets and revenues of local government units have been greatly influenced by the cadastral resurveys and the renewal of land registers, primarily because other related fees and revenues generated by charging the utility services have increased after receiving the data on the actual real property title holders, although they do not have concrete statistics.

Nevertheless, the local government unit representatives do not percentage this opinion. Except in Zadar, they believe that the budgetary revenue has not increased due to the cadastre and land register renewal. They justify this standpoint by saying that the revenue from the real property transaction tax is not the only item boosting the budgets of local governments and that the dynamics of other revenues can impact the total revenue. Some cities, such as Rijeka, have had a real property management system together with updated databases of town properties for some time now; they have invested continuous efforts in regulating the property and legal relations so, therefore, this Project is just a continuation of the good work conducted so far at the local level.

The most important reason is probably the influence of the global crisis on the economy in general and on the real estate market in particular. This influence is at the moment great so it is possible that, influenced by negative trends, the respondents tended to assess the effects in the past few years also negatively although the data confirms that the municipal revenues recorded a growth until mid-2008 in almost all of the observed towns so it cannot be disputed that some effects need to be assigned to concrete actions such as conducted cadastral surveys that have, among other things, enabled new investments and market growth.

The impact of the conducted cadastral resurveys and the renewal of land registers on the local government unit budgets has been analyzed on the basis of budgetary revenues of the local government units achieved by charging the real property fees which include the real property transaction tax, taxes levied from the leased business and residential premises owned by the local government units, revenues from utility contributions and from utility fees, revenues from the vacation houses tax and revenues from the tenured agricultural land.

The percentage of the budgetary revenues obtained by charging the real property fees in the budgetary revenue total has also been analyzed but the percentages of individual cities cannot be mutually compared since the budgetary revenues submitted for individual cities do not include all the items stated above. The reason for this is that the monitoring parameters of the budgetary revenue statistics for individual cities have been amended and such inconsistent data has not been used when drafting this Analysis.



The real property transaction tax is levied on the real property transactions: 60% of the total amount charged for the real property transaction tax represents the budgetary revenue of the local government units while 40% represents the revenue of the State budget. The taxpayer of the real property transaction tax is the person acquiring the real property; the tax base composition is the real property value at the moment when the real property is acquired, the tax rate amounts to 5% and the tax is paid only once. It is important to stress that the real property transaction tax statistics cannot be used to calculate the overall value of the market transactions due to various types of exemptions for the tax payers and the fact that the acquisition of the newly built real properties is not considered as the real property transaction but is taxed according to the Value-Added Tax Law.

A significant item of the local government unit budgets is represented by the funds collected by charging utility contributions and fees that, unlike the funds collected by charging the real property transaction tax, represent the exclusive revenue of the local government units. The local government units use the funds collected by charging utility contributions for building and using the utility infrastructural objects while they use the funds collected by charging the utility fees to finance the performance of certain utility services.

The utility contribution is a type of public spending incurred by the investor or rather the owners of the parcel on which a construction is being erected. The payment of the utility contribution is a required precondition for obtaining building permits so the fluctuations in the revenue from utility contributions are a good indicator of the investments at observed locations. The utility fee is calculated per m³ of the building that is being constructed. The local government units determine the unit value of the utility fees in HRK/m³ for certain zones in the town or municipality while the prices in some towns and municipalities differ, also based on the intended use of the construction that is being built (residential, business, production, etc.). The value is the highest for the first zone and the currently enforced legal maximum is 180 HRK/m³.

The utility fee is calculated per m² and the utility fee taxpayers are owners or users of the residential or business premises, garages, building sites used for the performance of business activities and undeveloped construction sites. The amount of the utility fee in HRK/m² is determined by the local government units, depending on the location and land use. According to the data of the Ministry of Environmental Protection, Physical Planning and Construction, the amount of the utility fees in 2009 ranged between 0.24 HRK/m² in Šibenik to no more than 1.27 HRK/m² in Rijeka for the residential premises in the first zone, and amounted to 0.53 HRK/m² on the average. The amount of the utility fee for business premises in the first zone ranged between 1.14 HRK/m² in Slavonski Brod to 8.70 HRK/m² in the City of Zagreb while the average value for the first zone amounted to 4.04 HRK/m².

Since the tax payers are obliged to pay a monthly fee, the revenue from the utility fees represents a constant source of the budget funds so accurate data on the area and owners or rather users of the above-mentioned premises is important for the local government units, and the procedure of renewing the cadastre and land registers results in obtaining precisely this type of data.

The impact of the conducted cadastral resurveys and the renewal of land registers on budgetary revenues of local government units can be assessed by monitoring the growth of budgetary revenues related to the paid utility fees in the cities which have implemented the cadastral resurveys and the renewal of land registers in the observed period.

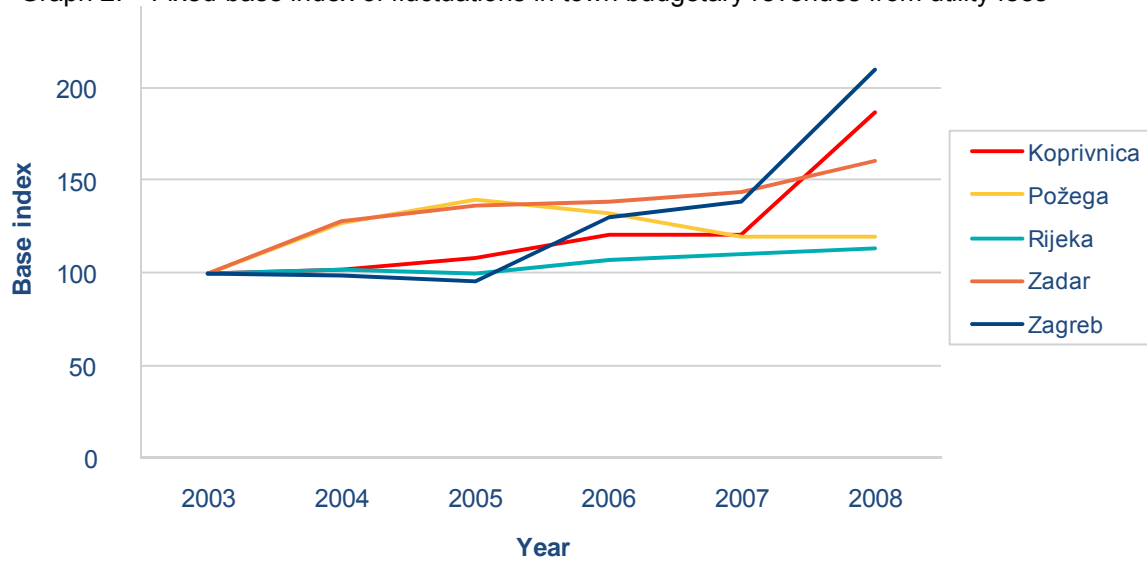
Table 8. Comparative overview of revenue trends related to utility fees paid in selected cities in thousands HRK

	2003	2004	2005	2006	2007	2008
Koprivnica	12.117	12.260	13.114	14.554	14.543	22.581
Požega	6.300	8.000	8.797	8.297	7.500	7.500
Rijeka	94.890	96.730	94.559	101.643	104.579	107.829
Zadar	6.282	8.009	8.590	8.663	9.042	10.049
Zagreb	269.144	263.616	257.368	348.987	372.207	564.987

Source: Town budgets



Graph 2. Fixed-base index of fluctuations in town budgetary revenues from utility fees



Source: Town budgets

Almost all cities show a stable growth of budgetary revenues from utility fees. Namely, the cities of Rijeka and Zadar show a continuous and stable growth of revenues from utility fees without greater fluctuations. Unlike them, Zagreb and Koprivnica show the fast growing revenues from utility fees at the end of the monitored period (2007 – 2008). For the Town of Požega, the peak period for the revenues collected from utility fees was in 2005, followed by a slight decline; nevertheless, these revenues are still higher than they were in the base year of 2004.

These data trends show that it is impossible to determine a clear connection between the cadastre and land register renewal and the growing budgetary revenues caused by utility fees. The increase in budgetary revenues caused by utility fees is obvious but it seems that the issue is an entire set of indicators that caused the situation to develop differently in the observed cities.

The more exact data on budgets is shown below for the target areas.



5.1.1. Town of Rijeka

The key revenue of the Town of Rijeka budget related to the real estate market is the revenue from utility fees showing a stable growth throughout the monitored period, i.e. from HRK 82 million in 2002 to about HRK 108 million in 2008. The utility contributions are a less significant item of the budgetary revenue, but they are a very good indicator of the building investments in the area of Rijeka. The reduction in the revenue from utility contributions in 2007 and 2008 indicates that the building investments in Rijeka have decreased in the last few years. Unlike the budget of other cities encompassed by the analysis, the leased business premises in Rijeka present a very important item of the budgetary revenue (on the average about HRK 72 million).

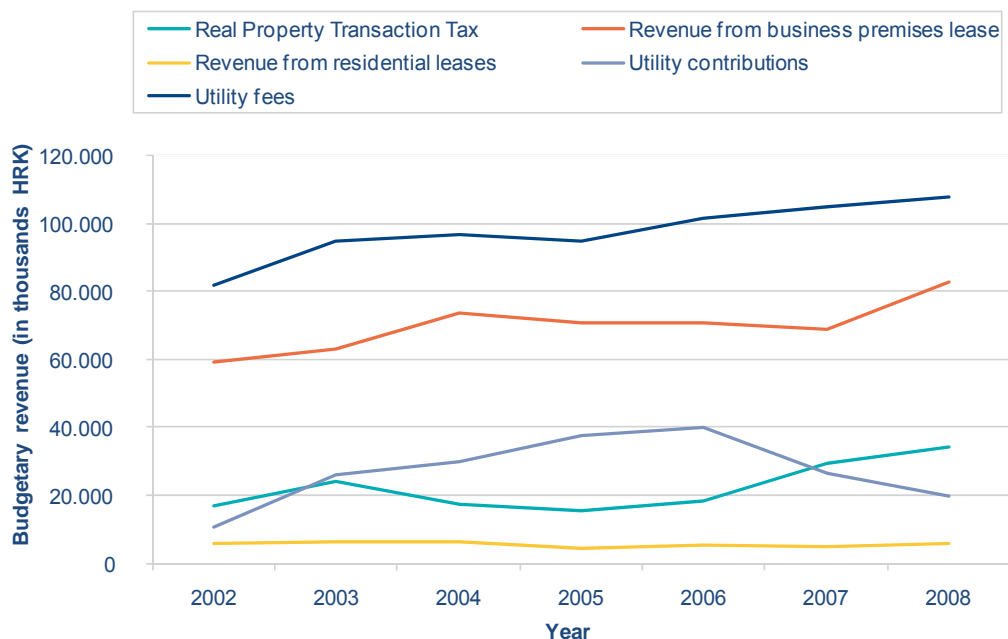
Table 9. Overview of the budgetary revenue of the Town of Rijeka in the 2002 – 2008 period in thousands HRK

	2002	2003	2004	2005	2006	2007	2008
Real Property Transaction Tax	17.000	24.000	17.500	15.531	18.172	29.600	34.367
Revenue from business premises lease	59.000	63.000	73.500	70.500	70.500	68.600	82.600
Revenue from residential leases	5.800	6.300	6.500	4.550	5.300	4.970	5.936
Utility contributions	10.608	26.200	30.000	37.470	40.100	26.422	19.609
Utility fees	82.000	94.890	96.730	94.559	101.643	104.579	107.829
Vacation Houses Tax**	16	16	19	19	19	20	20
Total revenue related to the real properties	174.424	214.406	224.249	222.629	235.734	234.191	250.361

Source: Budget of the Town of Rijeka (amended), all information available at: <http://sn.pgz.hr> (Official Journal – official bulletin of the Primorje-Gorski Kotar County)

*the data on the revenue from vacation houses tax is not shown in the graph

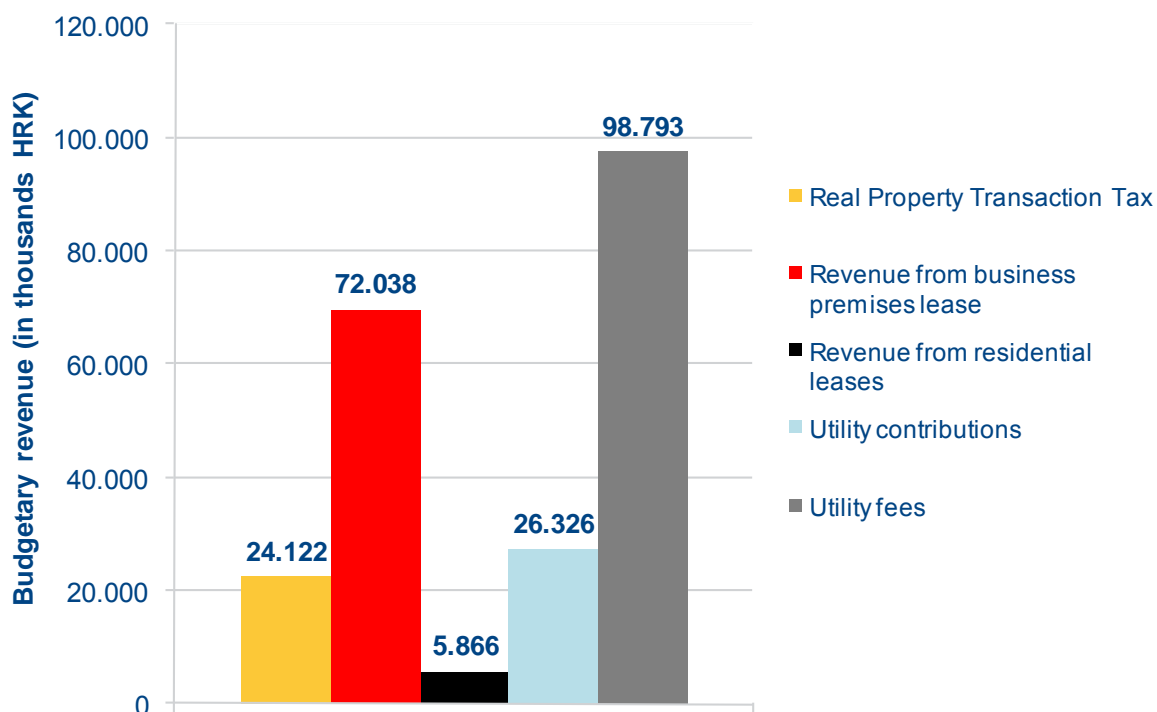
Graph 3. Budgetary revenue of the Town of Rijeka in the 2002 – 2009 period in thousands HRK



Source: Budget of the Town of Rijeka



Graph 4. Relations among particular items of the Town of Rijeka budgetary revenue in thousands HRK – the 2002 – 2008 average



Source: Budget of the Town of Rijeka

Calculation: Puls d.o.o.

The budgetary revenues related to the real properties throughout the observed period mostly indicate a mild incline, with the exception of a slight drop in 2005 and 2007. At the same time, the total revenue demonstrate a mild incline in 2004 and 2006 as well as a sharp incline in 2005 and 2007 followed by a significant decline in 2008.

Table 10. Overview of the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Rijeka

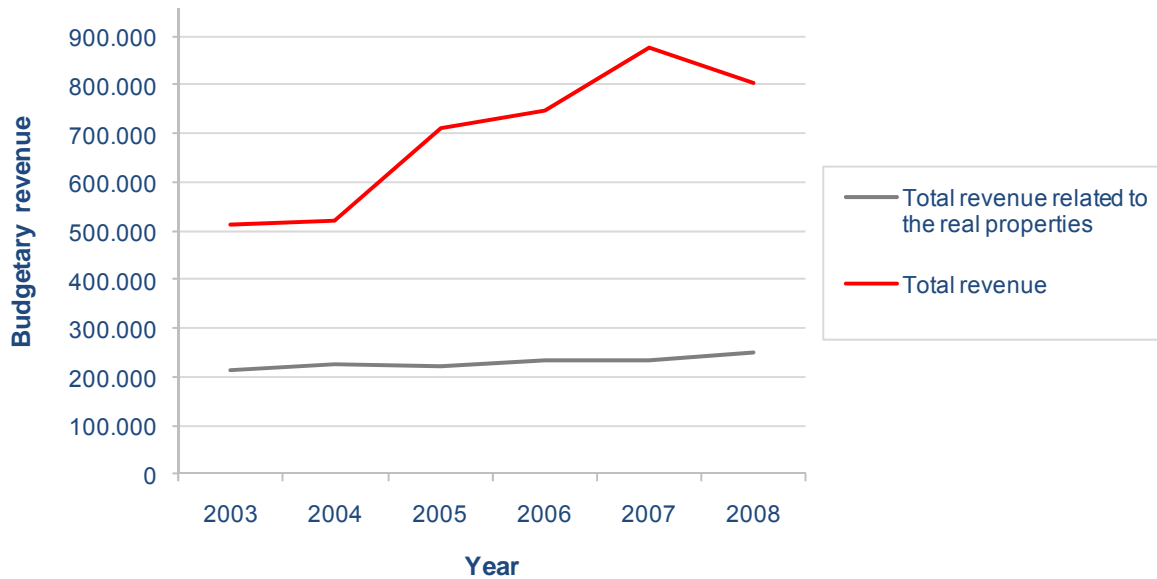
	2002	2003	2004	2005	2006	2007	2008
Total revenue related to the real properties	174,424	214,406	224,249	222,629	235,734	234,191	250,361
Total revenue	-	512,264	520,610	711,627	746,802	878,152	805,188
Share of the budgetary revenue related to the real properties in the total revenue	-	41.85%	43.07%	31.28%	31.57%	26.67%	31.09%

Source: Budget of the Town of Rijeka

Remark: budgetary revenues expressed in thousand HRK



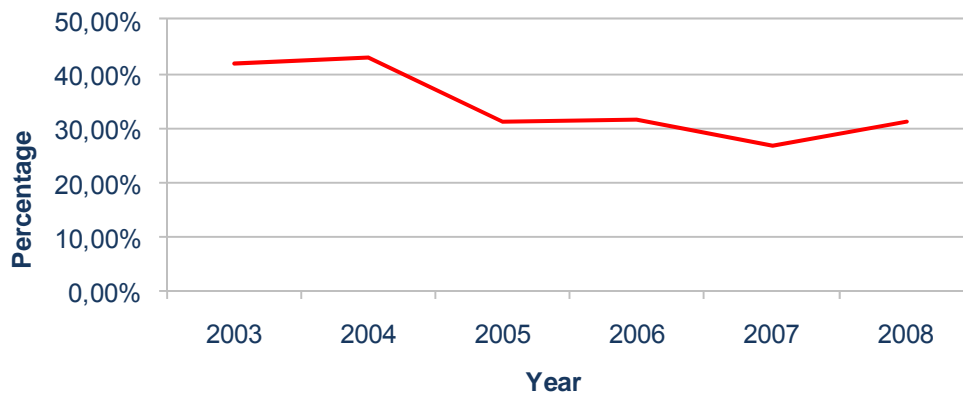
Graph 5. Overview of the fluctuations of budgetary revenues related to the real properties and the total revenue of the Town of Rijeka in thousands HRK



Source: Budget of the Town of Rijeka

The percentage of the budgetary revenues related to the real properties in the Town of Rijeka total revenue greatly oscillates but is significant for each year of the observed period. The percentage reached its peak in 2004 (43.07%) and hit the bottom in 2007 (26.67%). The percentage lowest point in 2007 may be linked to the fact that the total revenue that year, as compared with 2003, increased by 71% while the budgetary revenue related to the real properties increased by 10% at the same time.

Graph 6. Fluctuation in the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Rijeka



Source: Budget of the Town of Rijeka



5.1.2. Town of Koprivnica

Among the analyzed sources of revenue, utility fees are the most significant source of revenue in the Town of Koprivnica budget. The revenue growth generated by the utility fees in 2008 stands out in particular. The utility contributions are also an important, but more variable source of the town revenue.

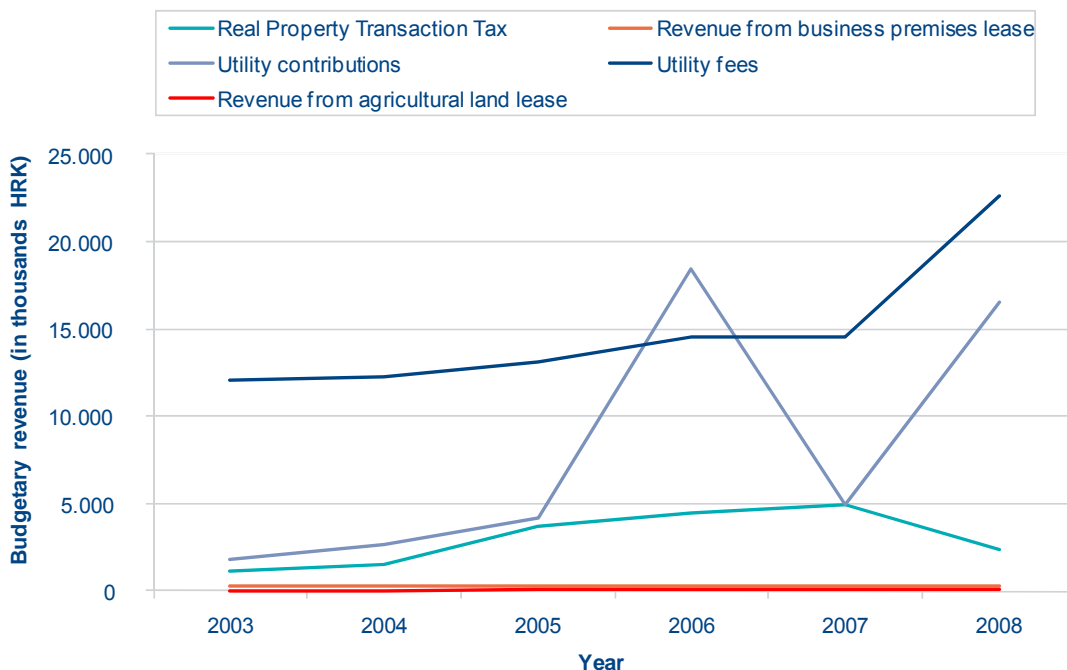
The revenue from real property transaction tax underlines a stable growth of the real estate market in the Town of Koprivnica until 2008 when a decline in the revenue from this tax can be observed.

Table 11. Overview of the budgetary revenue of the Town of Koprivnica in the 2003 – 2008 period in thousands HRK

	2003	2004	2005	2006	2007	2008
Real Property Transaction Tax	1.138	1.560	3.726	4.464	4.990	2.398
Revenue from business premises lease	317	263	259	302	302	263
Revenue from residential leases	0	0	0	0	0	0
Utility contributions	1.836	2.704	4.187	18.471	4.968	16.558
Utility fees	12.117	12.260	13.114	14.554	14.543	22.581
Revenue from agricultural land lease	18	16	107	57	120	107
Total revenue related to the real properties	15.426	16.803	21.393	37.848	24.923	41.907

Source: The Town of Koprivnica budget, data provided by the Town of Koprivnica

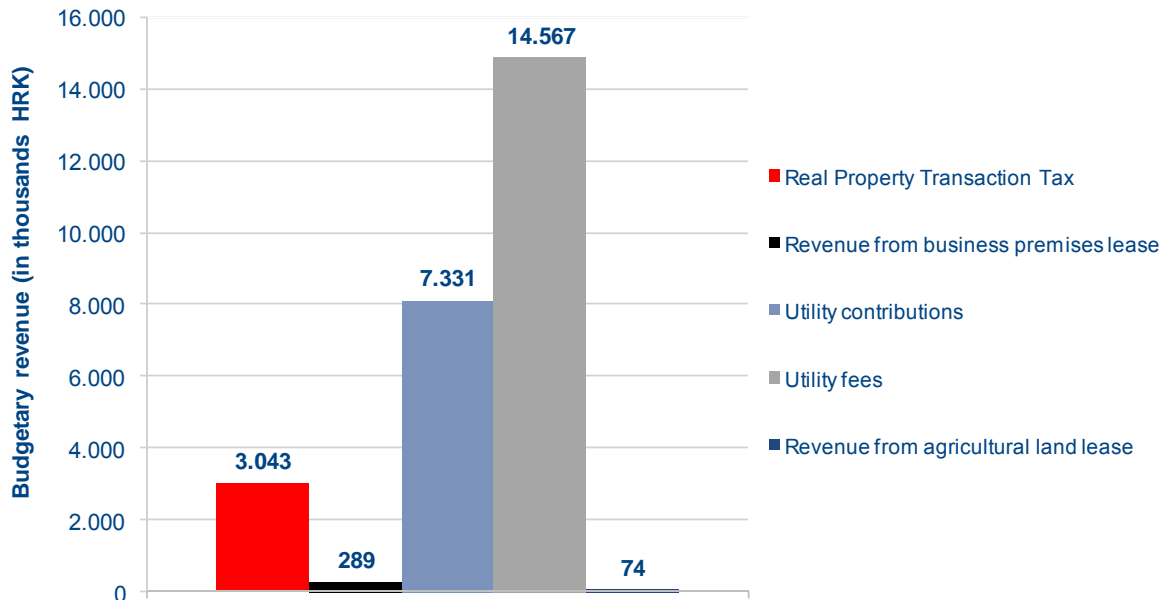
Graph 7. Budgetary revenue of the Town of Koprivnica in the 2003 – 2008 period in thousands HRK



Source: The Town of Koprivnica budget



Graph 8. Relations among particular items of the Town of Koprivnica budgetary revenue in thousands HRK – the 2003 – 2008 average



Source: The Town of Koprivnica budget
Calculation: Puls d.o.o.

The budgetary revenue related to the real properties throughout the observed period shows a constant growth and a sharp incline in 2006 and 2008 as well as a sharp decline in 2007 caused by a significant drop in the revenue from utility contributions. At the same time, the total revenue shows a constant growth with the exception of 2004 when a mild decline occurred. In the observed period, the budgetary revenue related to the real properties increased as much as 172% while the total revenue grew by 66%.

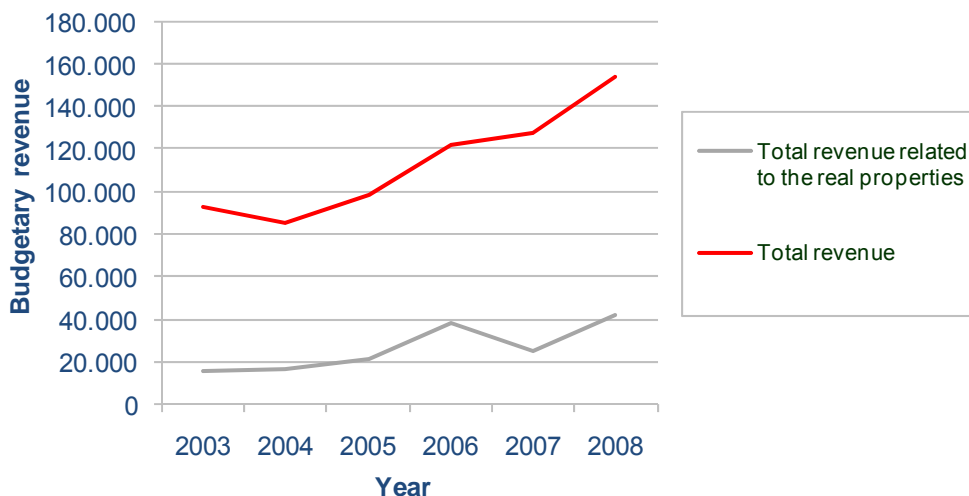
Table 12. Overview of the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Koprivnica

	2003	2004	2005	2006	2007	2008
Total revenue related to the real properties	15.426	16.803	21.393	37.848	24.923	41.907
Total revenue	92.779	85.605	98.032	122.222	127.350	154.002
Percentage of the budgetary revenue related to the real properties in the total revenue	16,63%	19,63%	21,82%	30,97%	19,57%	27,21%

Source: The Town of Koprivnica budget, data provided by the Town of Koprivnica
Remark: budgetary revenues expressed in thousand HRK



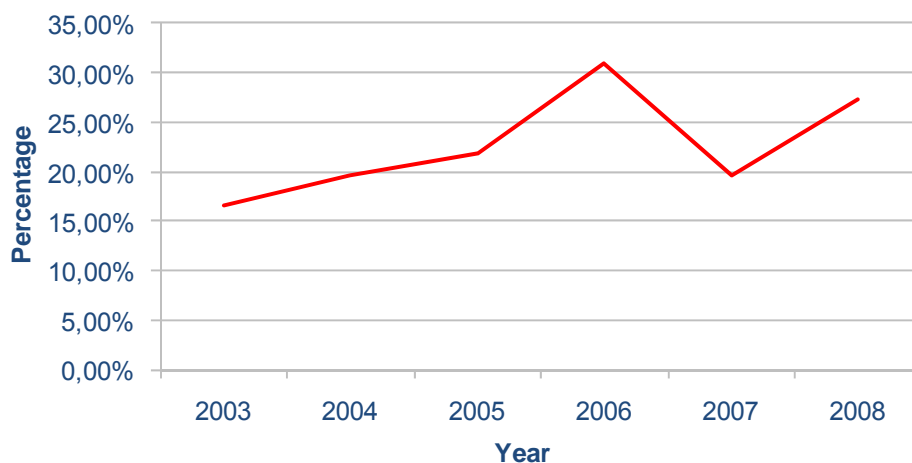
Graph 9. Overview of the fluctuations of the percentage of the budgetary revenue related to the real properties and the total revenue of the Town of Koprivnica in thousands HRK



Source: The Town of Koprivnica budget, data provided by the Town of Koprivnica

As can be seen from the following graph, the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Koprivnica budget shows a slight growth before 2005, a sharp incline in 2006, a sharp decline in 2007 that can be linked to the sharp decline in the revenue from the utility contributions, followed by a sharp incline in 2008. The percentage was the greatest in 2006 (30.97%) and the smallest in 2003 (16.63%).

Graph 10. Fluctuation in the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Koprivnica



Source: The Town of Koprivnica budget, data provided by the Town of Koprivnica



5.1.3. City of Zagreb

The City of Zagreb marks a stable growth in the revenue from real property transaction tax, utility contributions and utility fees between 2003 and 2008. These indicators point towards a stable growth of the real estate market, and particularly towards a stable and intensive investment activity. As opposed to the majority of other analyzed cities, the utility contributions in Zagreb are a bigger source of the budgetary revenue than the utility fees.

Table 13. Overview of the budgetary revenue of the City of Zagreb in the 2003 – 2008 period in thousands HRK

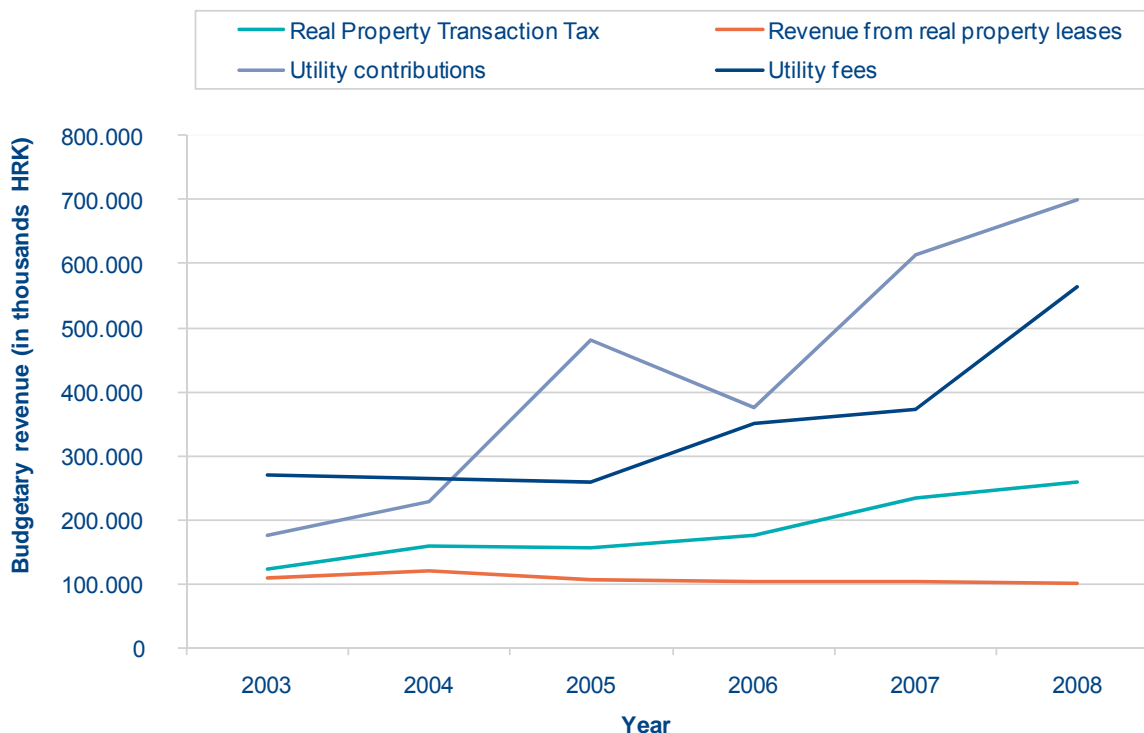
	2003	2004	2005	2006	2007	2008
Real Property Transaction Tax	121.891	157.404	156.627	174.626	233.389	259.354
Revenue from real property leases	109.069	120.350	105.195	103.556*	101.917	101.384
Utility contributions	174.692	227.760	481.380	375.254*	614.295	699.611
Utility fees	269.144	263.616	257.368	348.987*	372.207	564.987
Vacation Houses Tax**	700	767	732	---	643	633
Total revenue related to the real properties	675.496	769.897	1.001.302	1.002.423	1.322.451	1.625.969

Source: Official Journal of the City of Zagreb, Annual Budget Statements

*some information for 2006 is a mere projection due to the lack of more detailed information in the Official Journal

**data on revenue from vacation houses tax is not shown in the graph

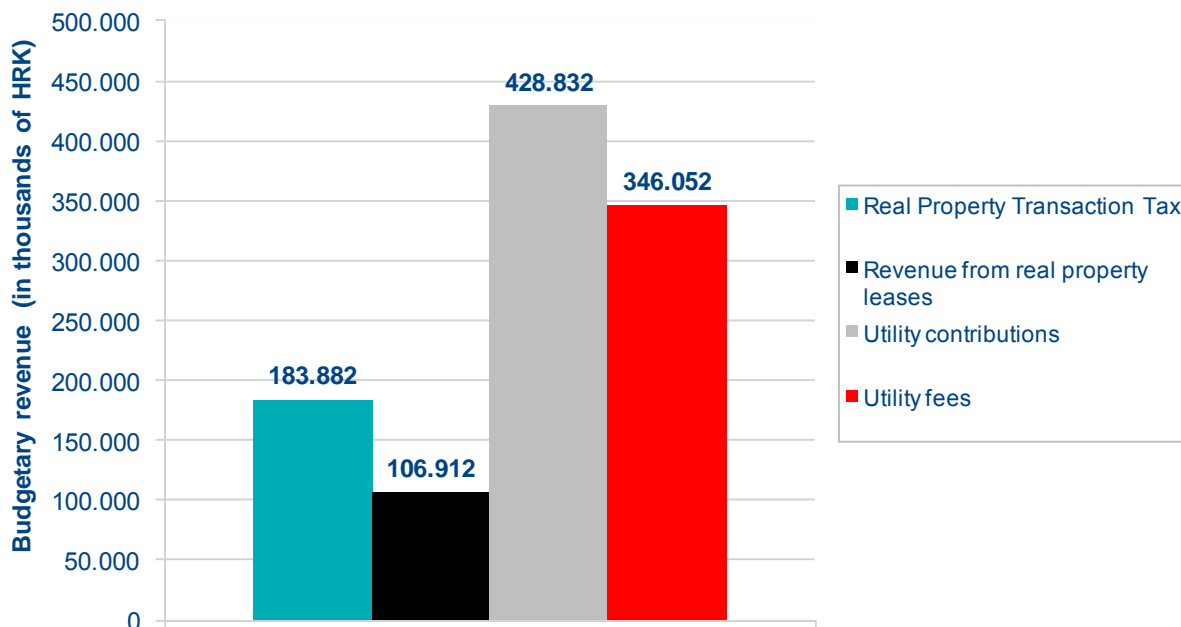
Graph 11. Budgetary revenue of the City of Zagreb in the 2003 – 2008 period in thousands HRK



Source: Official Journal of the City of Zagreb, Annual Budget Statements



Graph 12. Relations among particular items of the City of Zagreb budgetary revenue in thousands HRK – the 2003 – 2008 average



Source: Official Journal of the City of Zagreb, Annual Budget Statements
Calculation: Puls d.o.o.

The budgetary revenue related to the real properties throughout the observed period shows a constant growth, as does the total revenue. In the observed period, the budgetary revenue related to the real properties increased as much as 140% while the total revenue grew by 63%.

Table 14. Overview of the percentage of the budgetary revenue related to the real properties in the total revenue of the City of Zagreb

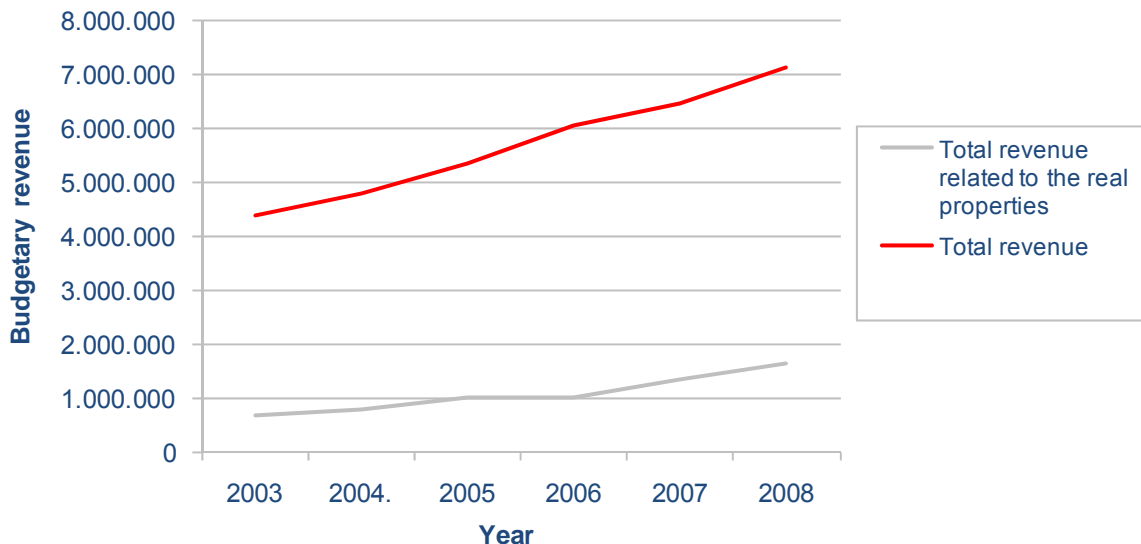
	2003	2004	2005	2006**	2007	2008
Total revenue related to the real properties	675.496	769.897	1.001.302	1.002.423	1.322.451	1.625.969
Total revenue	4.370.354	4.771.657	5.339.072	6.052.637	6.445.001	7.107.578
Percentage of the budgetary revenue related to the real properties in the total revenue	15,46%	16,13%	18,75%	16,56%	20,52%	22,88%

Source: Official Journal of the City of Zagreb, Annual Budget Statements

*some information for 2006 is a mere projection due to the lack of more detailed information in the Official Journal



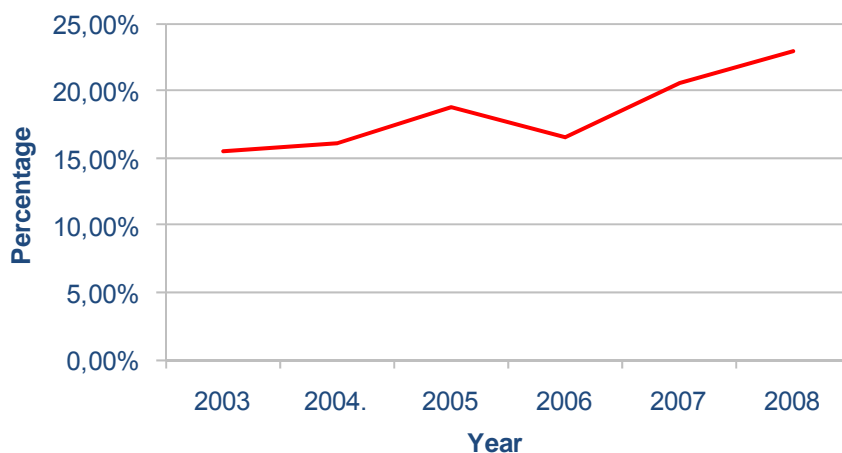
Graph 13. Overview of the fluctuations of the budgetary revenue related to the real properties and the total revenue of the City of Zagreb in thousand HRK



Source: The City of Zagreb budget

As can be seen from the following graph, the percentage of the budgetary revenue related to the real properties in the total revenue of the City of Zagreb budget shows a constant growth with the exception of 2006 when a mild decline was recorded. The reason for this is a slight increase in the revenue related to the real properties in that year along with the 13% growth of the total revenue that occurred in the same year.

Graph 14. Fluctuation in the percentage of the budgetary revenue related to the real properties in the total revenue of the City of Zagreb



Source: The City of Zagreb budget



5.1.4. Town of Zadar

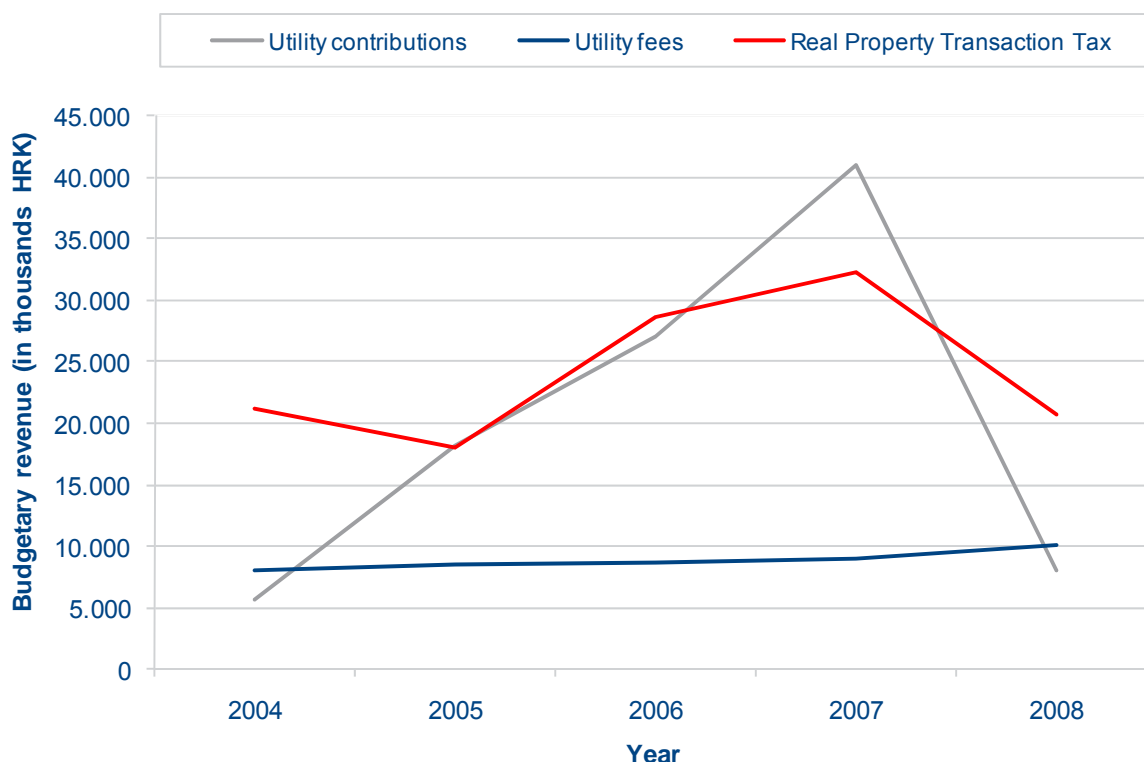
In the Town of Zadar, the available data on the budgetary revenue points to an intensive and growing investment activity through an increase in the revenue from utility contributions (until 2007) and a stable increase in the revenue from utility fees.

Table 15. Overview of the budgetary revenue of the Town of Zadar in the 2003 – 2008 period in thousands HRK

	2003	2004	2005	2006	2007	2008
Real Property Transaction Tax	-	21.128	17.998	28.655	32.200	20.776
Utility contributions	1.660	5.687	18.177	27.078	40.955	8.095
Utility fees	6.282	8.009	8.590	8.663	9.042	10.049
Total revenue related to the real properties	7.942	34.824	44.765	64.396	82.197	38.920

Source: Utility contributions and utility fees- Town of Zadar budget, real property transaction tax – Ministry of Finances

Graph 15. Budgetary revenue of the Town of Zadar in the 2003 – 2008 period in thousands HRK



Source: Town of Zadar budget, Ministry of Finances

The budgetary revenue related to the real properties grew by 136% in 2007 as compared to 2004. However, a very sharp drop occurred in 2008 due to the revenue from utility contributions being five times lower and significantly reduced in that year. At the same time, the total revenue records a constant growth: between 2004 and 2008, the total revenue increased by 92%.

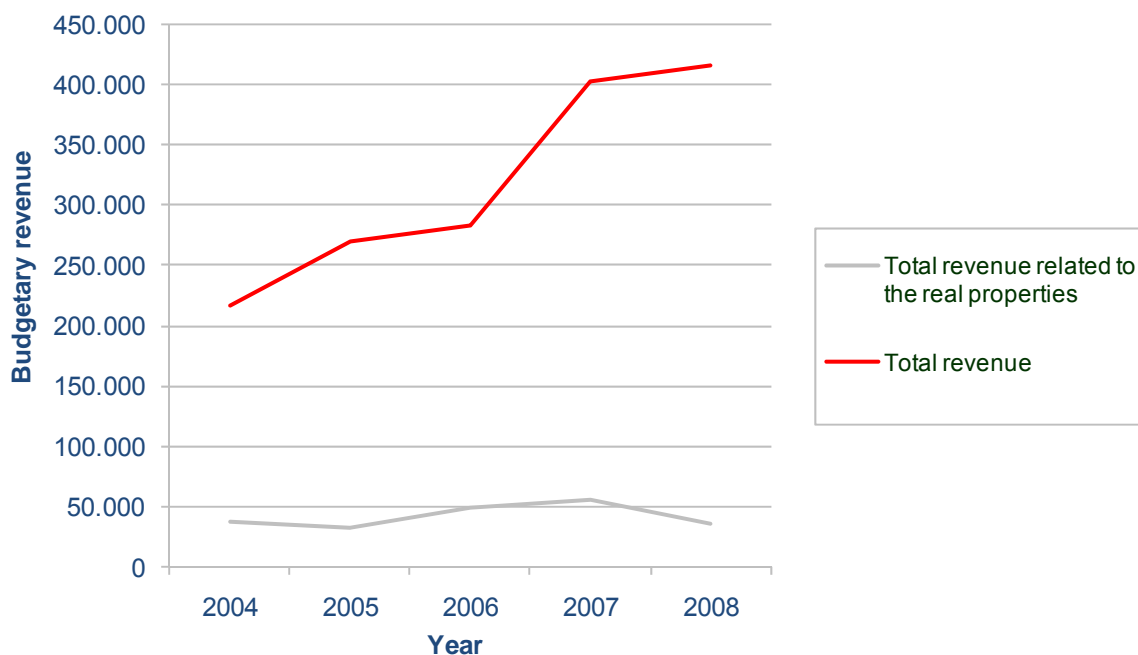


Table 16. Overview of the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Zadar

	2003	2004	2005	2006	2007	2008
Total revenue related to the real properties	7.942	34.824	44.765	64.396	82.197	38.920
Total revenue	172.260	216.087	269.246	282.899	402.048	415.831
Percentage of the budgetary revenue related to the real properties in the total revenue	4,61%	16,12%	16,63%	22,76%	20,44%	9,36%

Source: Town of Zadar budget, Ministry of Finances

Graph 16. Overview of the budgetary revenue trends from the utility contributions and fees and the total revenue of the Town of Zadar in thousands HRK

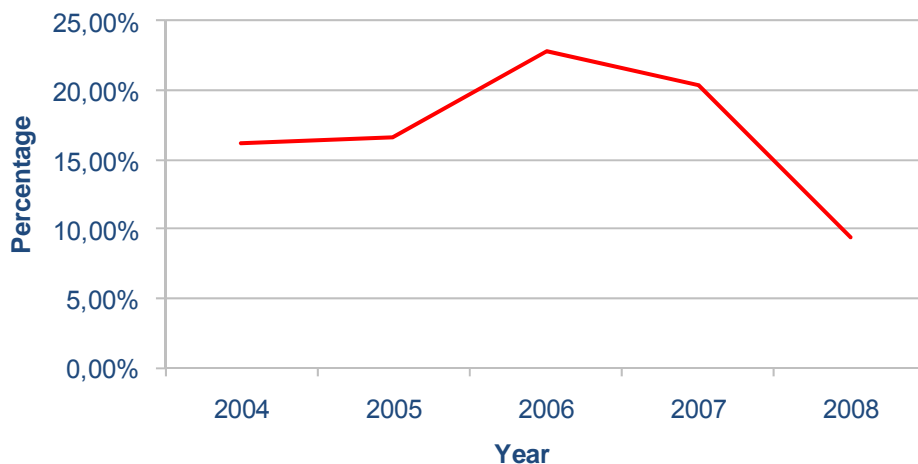


Source: Town of Zadar budget, Ministry of Finances

As can be seen from the following graph, the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Zadar budget shows a constant growth until 2007, followed by a mild and then a sharp decline in 2008 caused by a sharp drop in the revenue from the utility contributions and the real property transaction tax.



Graph 17. Fluctuation in the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Zadar



Source: The Town of Zadar budget

The impact of the cadastre and land register renewal on the budgetary revenue is clearly visible on the example of the Vrši cadastral municipality where the process of the cadastre and land register renewal was completed in 2005. Between 2000 and 2008, the number of transactions was 5 times higher while the revenue from utility contributions multiplied by more than 6 times between 2000 and 2006.

Table 17. Overview of the impact of the cadastre and land register renewal in the Vrši C.M.: number of transactions and revenue from utility fees in thousands HRK

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Transactions	82	96	70	-	-	457	431	339	413
Revenue from utility fees	98	316	382	-	606	593	629	-	-

Source: M. Bitanga, N. Javoran: Reform of land registers and cadastre in the jurisdiction of the Municipal Court in Zadar, October 2009.



5.1.5. Town of Požega

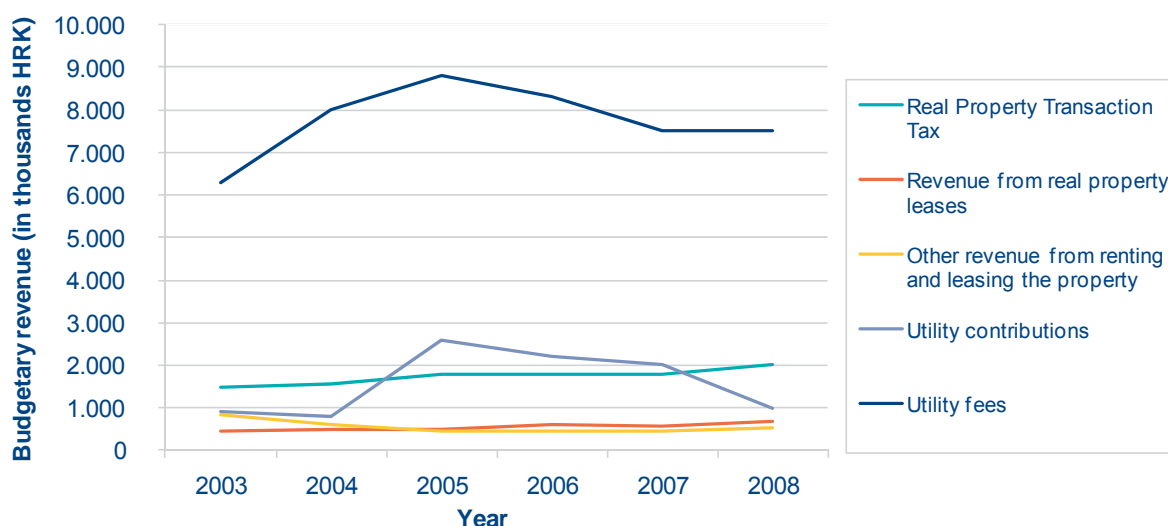
The utility fees represent the most significant element of the analysis of the Town of Požega revenue. The utility fees and utility contributions declined in the last observed period, probably due to reduced investments in the building sector. Unlike them, the real property transaction tax revenue represents the revenue showing a stable growth in the last period as well so we can conclude that the investors are preparing projects by probably investing in land purchases, which indicates further development of the real estate market. The increase in the real property transaction tax revenue can be explained also by the growing number of sales transactions in the residential real property segment since several housing projects were carried out in the Požega area in that period.

Table 18. Overview of the budgetary revenue of the Town of Požega in the 2003 – 2008 period in thousands HRK

	2003	2004	2005	2006	2007	2008
Real Property Transaction Tax	1.500	1.550	1.800	1.800	1.800	2.000
Revenue from real property leases	450	500	500	620	588	700
Other revenue from renting and leasing the property	820	600	450	450	450	550
Utility contributions	900	800	2.600	2.200	2.000	1.000
Utility fees	6.300	8.000	8.797	8.297	7.500	7.500
Total revenue related to the real properties	9.970	11.450	14.147	13.367	12.338	11.750

Source: The Town of Požega budget

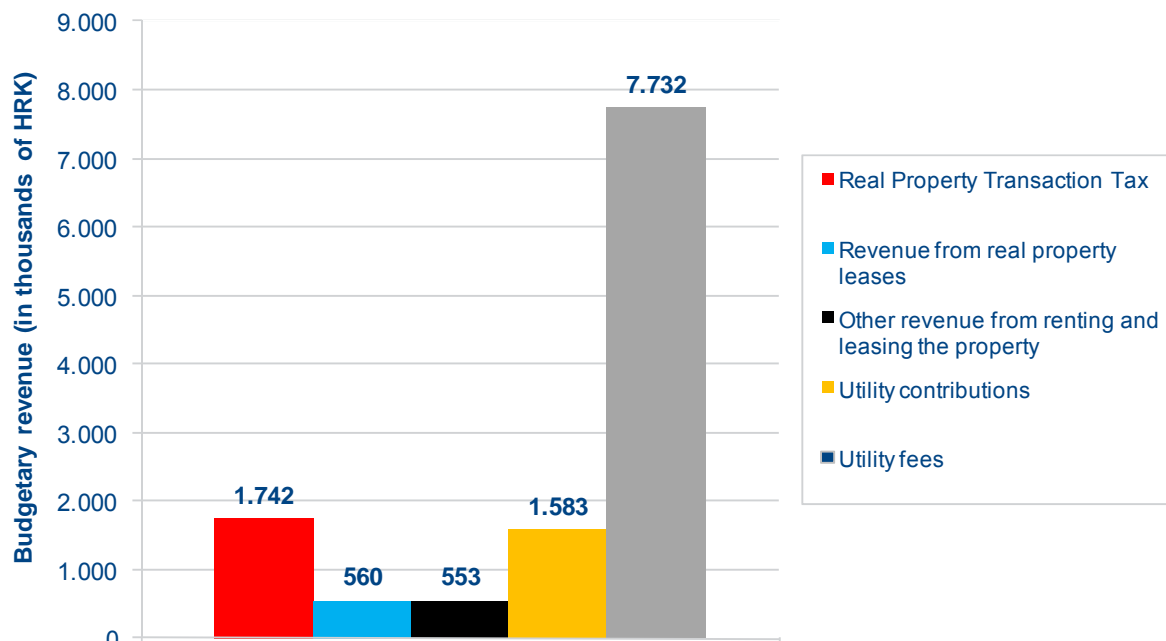
Graph 18. Budgetary revenue of the Town of Požega in the 2003 – 2008 period in thousands HRK



Source: The Town of Požega budget



Graph 19. Relations among particular items of the Town of Požega budgetary revenue in thousands HRK – the 2003 – 2008 average



Source: The Town of Požega budget

The budgetary revenues related to the real properties grew until 2005, followed by a mild but steady decline. At the same time, the total revenue records a constant growth: the total revenues grew by 61% in the observed period.

Table 19. Overview of the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Požega

	2003	2004	2005	2006	2007	2008
Total revenue related to the real properties	9.970	11.450	14.147	13.367	12.338	11.750
Total revenue	44.285	48.859	47.814	51.951	62.801	71.424
Percentage of the budgetary revenue related to the real properties in the total revenue	22,51%	23,43%	29,59%	25,73%	19,65%	16,45%

Source: The Town of Požega budget



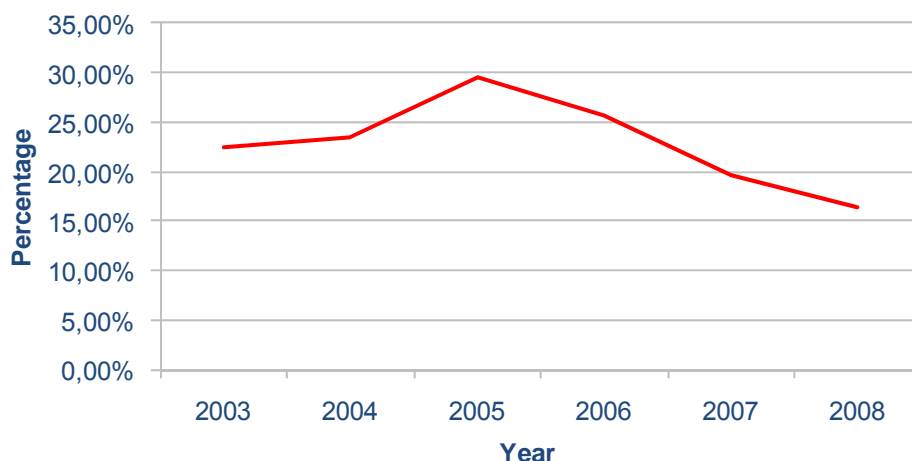
Graph 20. Overview of the budgetary revenue trends from the utility contributions and fees and the total revenue of the Town of Požega in thousands HRK



Source: The Town of Požega budget

As can be seen from the following graph, the percentage of the budgetary revenue related to the real properties grew until 2005, followed by a steady decline that can be linked to a demonstrated, steady incline of the total revenues and a decline of the revenue related to the real properties in the post-2005 period.

Graph 21. Fluctuation in the percentage of the budgetary revenue related to the real properties in the total revenue of the Town of Požega



Source: The Town of Požega budget



5.2. Impact of conducted cadastral resurveys and the renewal of land registers on the physical and urban planning

The respondents believe that the impact of cadastre and land register renewals on the physical and urban planning is only indirect, since the clear property-rights' relations are a pre-condition for the implementation of projects determined by the physical plans. It has been pointed out that in practice the urban planners often make plans without taking into consideration the property-rights' issues so the implementation of such plans is often impossible and the plans are never carried out.

Figure 7 Example of physical plan in force: Corridor of Vrapčanska street's extension scheduled in area with large number of family houses



Source: <https://e-uprava.apis-it.hr/gup/>, area puprose display at digital ortophoto plan according to Zagreb Master Plan

A separate problem for the urban planners represents the development of urban plans in the areas where the cadastral maps in official use were produced by surveys older than 100 years since such plans have experienced several changes due to subdivisions. These plans are difficult to read and it is almost impossible to determine the shape and size of a parcel by consulting them.

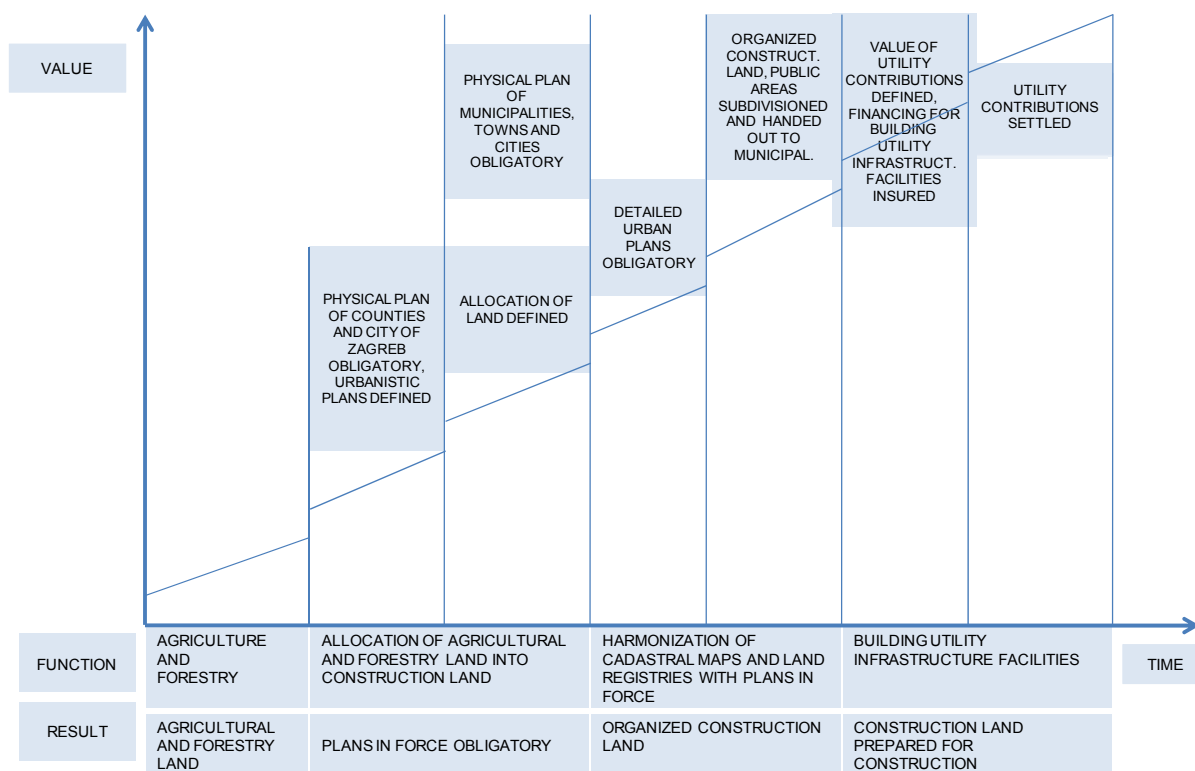
The physical planning documents significantly influence the land market value, as can be seen from the graph below.

The land value significantly increases after the adoption of urban plans and the determination of the construction parcel's land use and degree of development. Namely, at the building sites where the afore-mentioned parameters are unknown, the potential investors cannot calculate the project feasibility since they cannot predict the size of the building to be built and this affects numerous expenses (expense for architectural designs, building, contributions, etc.) as well as the project profit (profit from selling the newly built object). The status of the object and utility infrastructure installations are also important because the non-existing utility infrastructure can, due to certain provisions of the



Physical Planning and Construction Act, prolong the time needed to obtain building permits and can cause additional expenses for the investor.

Graph 22. Land market value as the function of the state of physical planning documents



Source: Construction and real property transactions, IV. Revised edition, RRIF (Accounting, Auditing and Finances)

*Remark: Titles of physical plans from source documents are adjusted to the titles from the current Physical Planning and Construction Act

Based on the above-mentioned effects that increase the land value, it is clearly visible that the data harmonization between the cadastre and land registers directly affects the growing land value at several levels. The first impact can be seen in the creation of datasets allowing the better physical planning and implementation of the existing physical plans while the second impact is demonstrated as directly linked to the growing land value in a situation where the ownership documentation is in order.

5.3. Impact of the conducted cadastral resurveys and the renewal of land registers on investments

The prevailing opinion among the respondents is that the impact of the conducted cadastral resurveys and the renewal of land registers on investments has been positive. By conducting resurveys and renewing land registers, the investments in the local government unit infrastructure will increase and this will result in intensified building sector activities and investments. Specific effects have been recognized in relation to the construction of business zones which represents one of the important pre-conditions for the development of the local economy. Before deciding to invest, foreign investors will highly value the clear property-rights' relations and regulated physical plans. Both of these elements are closely connected to the harmonized cadastral and land registry data so the respondents generally believe that the activities related to the implementation of cadastral resurveys and the renewal of land registers have directly influenced the growing foreign investments in the real estate market, in the areas where these activities have been conducted.



The value of the completed construction works performed on the buildings at observed locations shows significant fluctuations with the exception of Croatia as a whole where constant growth was recorded throughout the observed period, and the City of Zagreb where a mild decline was present in 2005, followed by a steady incline until the end of the observed period. The most significant fluctuations were recorded in Rijeka and Zadar where the value of works by year has more than doubled or has been reduced by more than twice.

It is important to mention here that this data does not include the infrastructural investments since the data on the investment trends in infrastructural projects is not available and that it concerns a segment very much affected by the cadastral resurveys since the infrastructural projects mostly involve large land tracts so the harmonized data on the real property ownership is crucial for the implementation of such projects.

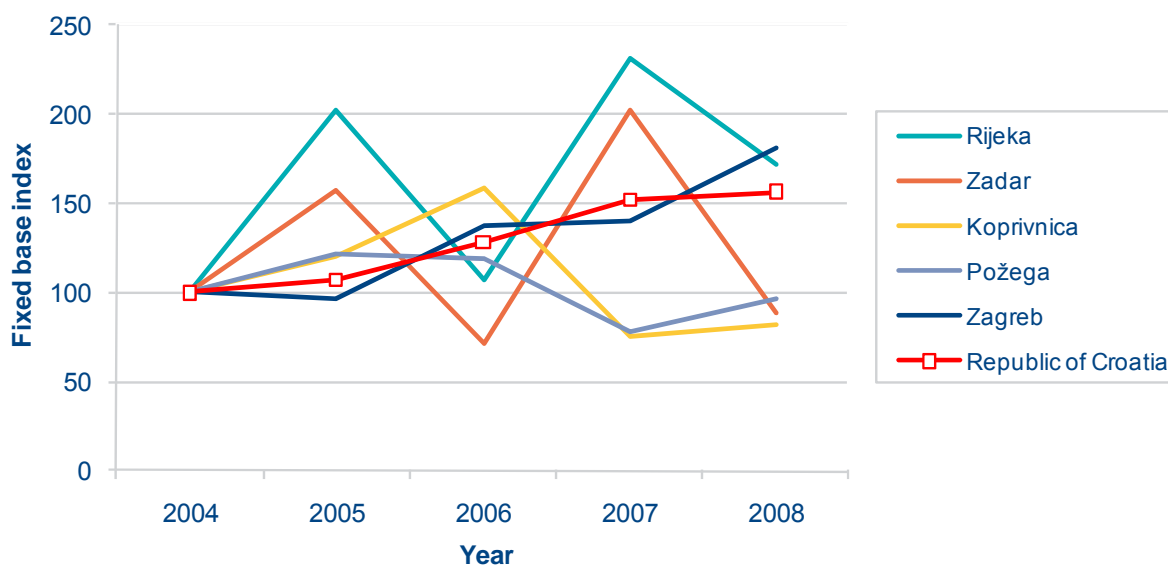
Although the data about investing in apartment building activities does not give a clear indication of the trends related to the effects of cadastral resurveys and the renewal of land registers, they are given as an illustration of the market trends in general, taking as their premise that the harmonization of the real property ownership data is certainly one of the impacts determining the trends on the market.

Table 20. Value of construction works performed on the buildings in the Republic of Croatia and in selected towns in the 2004-2008 period in thousands HRK

	2004	2005	2006	2007	2008
Koprivnica	181.014	217.179	288.403	137.071	149.245
Rijeka	243.981	494.169	261.793	564.415	420.903
Požega	50.237	61.306	59.534	39.492	48.465
Zadar	123.548	195.200	88.332	249.858	108.707
Zagreb	4.354.925	4.229.233	6.004.436	6.134.309	7.901.769
Republic of Croatia	14.985.066	15.999.039	19.272.373	22.830.530	23.479.531

Source: CBS

Graph 23. Fluctuation in the value of construction works performed on buildings in the Republic of Croatia and in selected towns – fixed-base index (base = 2004)



Source: CBS



5.4. Impact of the conducted cadastral resurveys and the renewal of land registers on the level of employment in local government units

While the land registration judges and heads of cadastral offices believe that the employment rates should have been positively affected, the representatives of local government units believe that there have not been any significant changes in the number of employed people. It is likely that in this case, just like in the case of the budgetary revenue, there are other factors, primarily the economic crisis, that have made it very difficult to isolate the impact of renewals on the employment rates in local government units.

The overview of the number of employed persons at observed locations between 2004 and 2008 is provided below. At the level of the Republic of Croatia, a steady growth in the number of employed persons was observed until 2008, followed by a drop caused by the economic crisis. This example is followed also by other counties with the exception of the City of Zagreb recording a mild growth also in 2008, and the Požega-Slavonia County recording a significant decline in 2005, followed by a mild incline up to 2008 when a significant decline in the number of employed persons occurred.

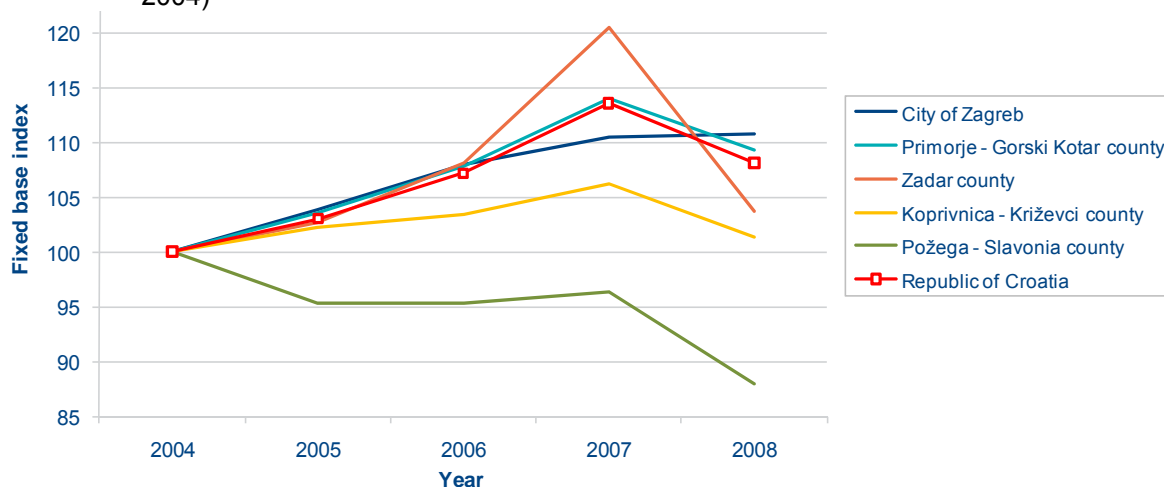
Since the percentage of the volumes related to the real estate market in the total gross revenue has continually been around 10%, it is impossible to pinpoint its influence on the trends related to the general employment rate while the data related exclusively to this segment is unavailable. The data on the overall employment is given as an illustration of the employment trends in general, and indicates that in the past ten or so years, the level of employment at the RoC level grew for the most part until the beginning of a negative trend in 2008, influenced by the global economic crisis.

Table 21. Overview of the number of employed persons at observed locations

	2004	2005	2006	2007	2008
City of Zagreb	325.311	337.551	351.173	359.080	360.278
Primorje-Gorski Kotar	56.791	58.814	61.196	64.759	62.089
Zadar County	16.218	16.649	17.531	19.533	16.808
Koprivnica-Križevci County	18.651	19.070	19.279	19.802	18.886
Požega-Slavonia County	9.903	9.432	9.443	9.541	8.713
Republic of Croatia	810.630	834.992	868.711	920.173	876.055

Source: CCE

Graph 24. Trend in the number of employed persons in selected counties – fixed-base index (base = 2004)



Source: CCE



5.5. Impact of the conducted cadastral resurveys and the renewal of land registers on the economic potential as a whole

When evaluating the impact of the conducted cadastral resurveys and the renewal of land registers on the economic potential as a whole, the following options have been singled out. The conducted cadastral resurveys and the renewal of land registers may have impact at places where the new harmonized data has been put in official use. Additionally, the conducted cadastral surveys and the renewal of land registers have enabled an accelerated investment cycle which is highly important for the stakeholders at the real estate market. The regulated status of parcels impacts on the development of the economy and on all other initiatives because no time is wasted on clearing the property-rights' relations and documents. Therefore the procedure becomes simple, fast and secure which is important because it leaves time for other activities. The cadastre surveys and the data harmonization in land registers are a boost to the real estate market and there is a great potential of influencing the economy due to the increased speed of conducting the process and attracting foreign investors as well as to the expected increased investments in the building sector. Since the process of cadastral surveys and data harmonization is long and expensive, the relevant institutions search for alternative ways of harmonizing the cadastre and land registry data with the actual situation in the areas where the discrepancies are not too great in order to use the Project potential to the greatest extent.

Undoubtedly, the real estate market can function much more efficiently and to a greater extent due to the full harmonization between the cadastre and land registry data and the actual situation which contributes more significantly to the economy as a whole. However, given the great number of factors additionally influencing this element, it is not possible to accurately define the real nature of this influence and the extent to which it remains unexploited today, given that the harmonization between the cadastre and land registry data with the actual situation in the field has not yet been fully completed.

5.6. Impact of the conducted cadastral resurveys and the renewal of land registers on the urban and residential development plans

There are no clear attitudes among the respondents regarding the influence of the land registry and cadastre renewal project on the zoning and housing plans. The opinions have been expressed that more time is needed if some constructive conclusions are to be made regarding the impact. This issue is regulated by the Physical Planning Act but some respondents have pointed out that, due to the Project activities, the physical planning has been facilitated in terms of making the approach to the construction and housing more systematic. However, the problem that still remains is that the infrastructure because the status of parts of land where the necessary roads and other housing related infrastructure facilities should be built, is still unclear in terms of property and legal relations.

It has to be additionally emphasized here a frequent problem with the physical planning is that the plans are made regardless of the actual situation and the state of the cadastre and land registers so such plans often cannot be implemented in practice. However, by harmonizing the data status, new possibilities will certainly open up for developing organized residential quarters at locations fit for such a purpose, especially in smaller towns. In this sense, this aspect should be given a high priority when defining the order of determining the locations for implementing further cadastral surveys so as to prevent the development of residential quarters encountering a problem in the development of the infrastructure caused by unregulated ownership issues or rather the mismatching data in the cadastre and land registers (e.g. residential blocks have been built in Sopnica Jelkovec by the Zagreb Holding investor and only then has the issue of regulating the surrounding locations and solving the transport infrastructure in the form of the extension to Vukovarska Street been addressed).



5.7. Impact of the conducted cadastral resurveys and the renewal of land registers on the protection and improvement of natural environment, fire and civil protection

The respondents expressed the opinions according to which the conducted cadastral surveys and the renewal of land registers influenced the environmental protection and progress: in the case of pollution or some ecological disaster, it is easier to determine the perpetrator and claim the damage if a real property owner is known.

Also, these activities could impact on the fire and civil protection since a regulated situation yields precise data on streets and settlements that are available as well as the registers of spatial units, i.e. the basic data of all units such as streets, house numbers and settlements is kept which is very important for orientation in space, and also represents the foundation for fire and civil protection.

As part of the research, an interesting opinion was expressed that the renewal of the cadastre and land registers does not necessarily have to have a positive impact on the environmental protection. For instance, there are always people wishing to expand the construction areas. The expansion can be motivated by an objective to have the real property records regulated and can often be the reason for regulating the situation. Therefore, regulated real property records can enable a construction area to easily spread into the natural environment, even easier than in the case when the real property situation in the natural environment is not regulated with regards to the property-rights' relations. The respondents believe that it is necessary to closely monitor the transparent spatial planning in order to avoid any possible abuse of regulated real property records. As an example of this phenomenon, it is possible to cite Viškovo near Rijeka where massive overdevelopment has occurred in the past few years due to the regulated records. The overdevelopment has not been followed by infrastructural development so now the construction debris and other waste depots have popped up in this area, the roads are inadequate for the traffic which pollutes the environment, etc.

Figure 8 National Protection And Rescue Directorate employees on drill



Source: National Protection And Rescue Directorate, www.dzus.hr

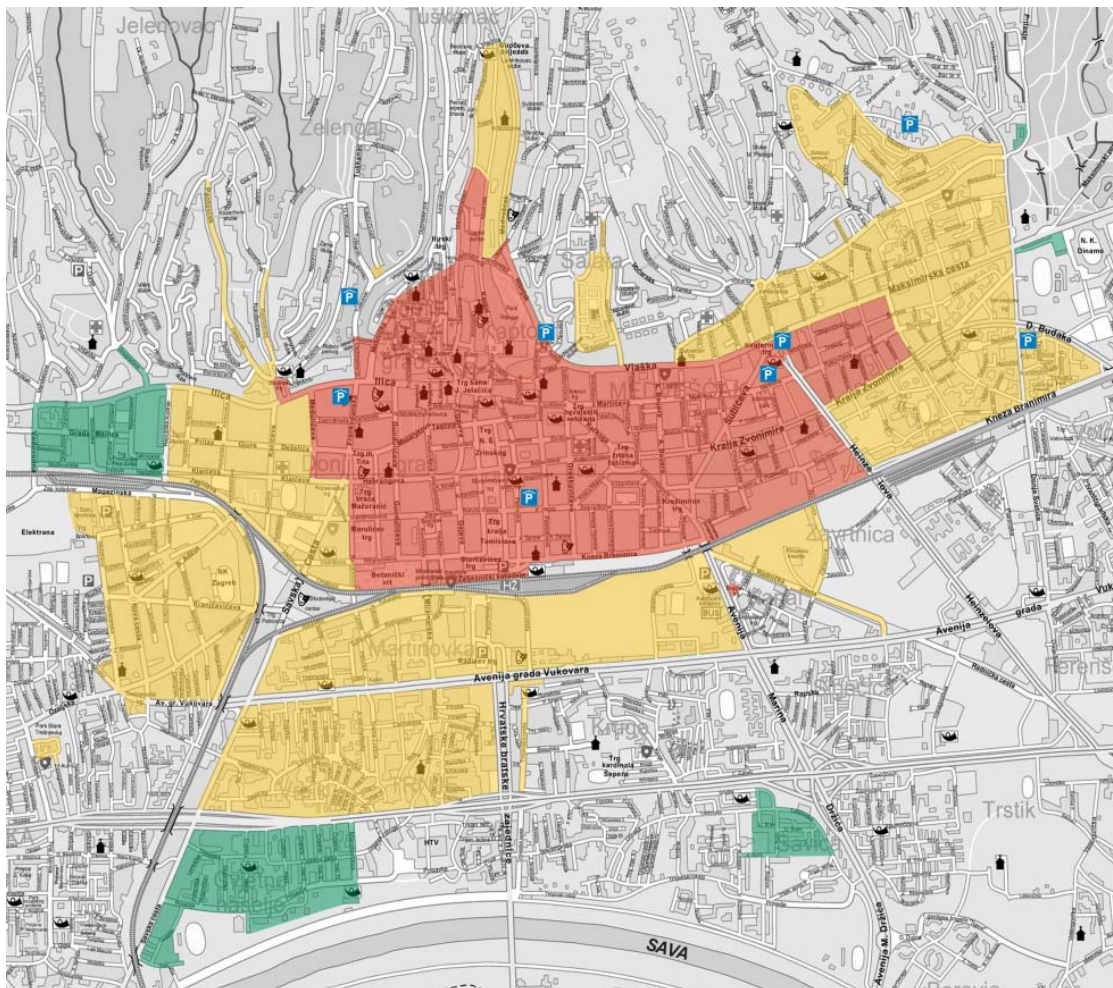


5.8. Impact of the conducted cadastral resurveys and the renewal of land registers on utility services

The majority of the contacted respondents believe that the conducted cadastral surveys and the renewal of land registers have positively impacted the utility services. Some local government units have recognized the advantages of implementing cadastral surveys and renewing land registers so the number of requests to regulate the land registers have increased, particularly in the places where the local government units participate in the activities in order to carry out their utility projects (e.g. in Knin, the survey has been conducted and the establishment of a new land register is ongoing, therefore the local government unit expects significant economic benefits from this project). Furthermore, a regulated land registration and cadastre status enables the charging of all utility fees and the money goes into the budget of the local government units.

It is necessary to add that, by harmonizing the real property data, the towns and municipalities often gain insight into the owners of the real properties. These real properties are often public properties so the town and municipality can, in such a case, start with the refurbishing or reconstruction of such real properties (roads, public parks, locations fit for becoming parking lots etc.) which may generate new revenues for the LGU's as well as new jobs in the utility services branch.

Figure 9 Public parking zones in City of Zagreb



Source: Zagrebparking Ltd., www.zagrebparking.hr



5.9. Impact of the conducted cadastral resurveys and the renewal of land registers on the satisfaction of the users of land registries and cadastral and local government unit offices

The expectations of the service users are mostly aimed at obtaining the accurate and updated data quickly.

There is a prevailing belief among the respondents that the service users are satisfied and that their expectations are met. Furthermore, it is believed that the conducted cadastral surveys and the renewal of land registers have enabled them to perform their job more efficiently and effectively at places where the harmonized data is in official use.

The land registration judges estimate that the users are particularly satisfied because the majority of cases are resolved much faster than before. There is no more queuing, waiting for a long time and complaining. However, the respondents believe that the perception of the land registry office (particularly in Zagreb) is still negative and has been nourished for the past 20-30 years. Also, they think that there are cases that can be processed in one minute if there is good will for that or if someone is bribed.

The representatives of cadastral offices point out that the cadastral map copies are issued within half an hour from the moment the user files an application and, if there are several parcels to process, then this lasts a day or two. Basically, everything is processed within the time frame stipulated by the law. This is regulated by the Administrative Procedure Act according to which every request submitted by a party, regardless of whether it is a physical or legal person, needs to be processed within 30 days. The assessment is that the users should be satisfied if they understand the situation that the cadastre is in.

The local government unit representatives also believe that the users of their services are satisfied with the provided services, that they obtain what they want and that the satisfaction with the services is growing.

Some ideas were pointed out which could additionally increase the user satisfaction:

- a) employ more capable, educated and well paid employees (land registry offices and cadastre)
- b) educate and inform the citizens about the availability of the data on the internet so that they do not need to visit the offices for the purpose of verifying the data (cadastre)
- c) better organization and regulations (local government units)

The land registration judges explain that with the new work organization enforced after 2005, there has been a re-allocation of work in the land registry offices, thus improving their up-to-datedness and establishing a more positive attitude towards the clients. Furthermore, backlogs have been cleared so the employees have more time to dedicate to the clients. The dynamics and performance of the case processing have improved which has directly influenced the user satisfaction.

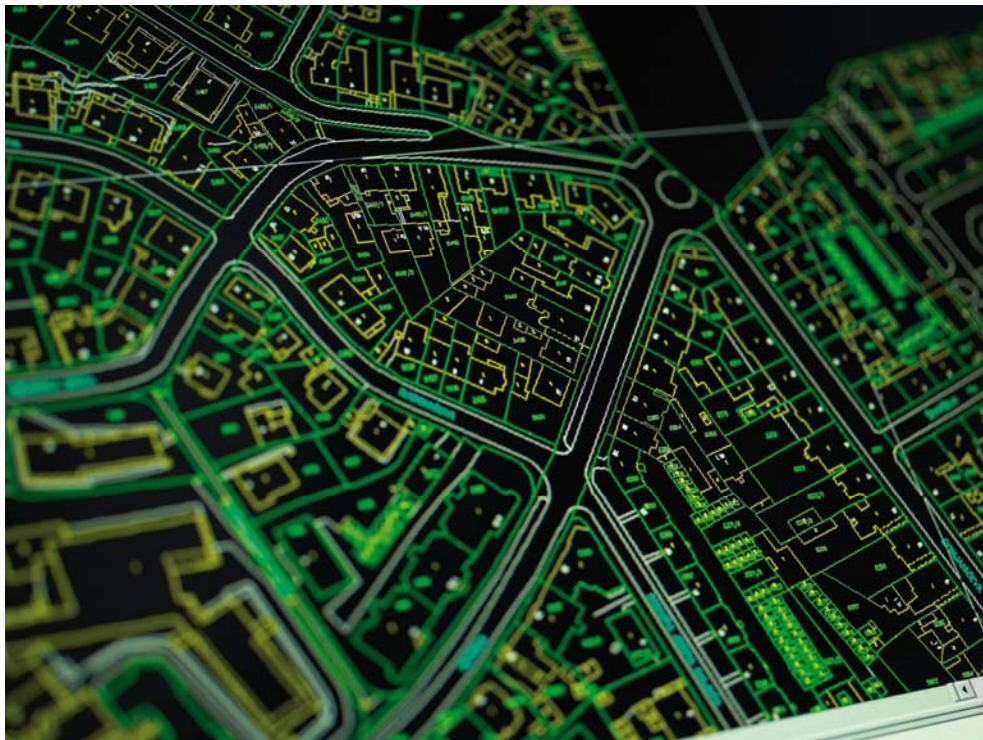
The local government units have increased the number of employees working with the end users; some laws have been supportive in this process (such as the Law on Physical Planning and Construction); a lot of data is available on the internet.

The user requests to the institutions covered by the research have changed in comparison to the situation 5 years ago. The land registration judges point out that the consequence of the land registry digitalization and the availability of the data on the Internet is the factor which led to less requests for accessing the land registers but the number of requests related to loans and mortgages has increased.

In the cadastre, there is a growing need for cadastral map copies which can be issued faster now because they are in digital format.



Figure 10 Display of the cadastral map in digital format



Source: Organized Land

The local government units notice that there are more investors. A growing trend noticed in Rijeka is that physical persons demand substitute real properties and not the money as a compensation for the real properties that they have renounced in favour of the town authorities. Since the town real property portfolio is not extensive, it is often very difficult to meet these requests.

The availability of the data on the Internet has reduced the number of service users who come to the offices only to obtain some information. The land registration judges believe that the communication has accelerated and that the clients who visit the offices now are mostly those who are not familiar with the Internet which means the elderly population in rural areas. However, the clients who used to come to the offices in great numbers with the queries were the investors who do not come anymore. Nevertheless, there are still many citizens who expect from the clerks not only to resolve their case, but to provide legal advice related to further processing of their case, which is neither the scope of work nor the knowledge required from the land registry clerks.

Heads of cadastral offices state that citizens come to them for information, but the number of such queries is clearly declining.

The local government representatives point out that there are still many users who come only to obtain some information. The estimation is that such users make up 1/3 of all service users.

The system of informing the service users is organized by publishing the information on the web sites. Therefore, regarding the land registers, there is an application on the Ministry of Justice's web site where the clients can obtain the information on the status of their real property in the land register and see how their case is being processed. It is also possible to check on the Internet the status of the registration, and to ask questions. The public can also be informed through brochures produced as part of the Organized Land Project. In land registry offices, no one is assigned to provide only the information, so the clients obtain the information from any clerk at the front desk or from a judge.



UREĐENA ZEMLJA

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Figure 11 Reduced display of the extract from the cadastral map made by the old surveys in 1:2880 scale

KOPIJA PLANA

Mjerilo 1:2880



REPUBLIKA HRVATSKA
DRŽAVNA GEODETSKA UPRAVA
PODRUČNI URED ZA KATASTAR SPLIT
ISPOSTAVA SUPETAR

K.O. *801211AN*
Br. plana *5*
čest. zem. *330/23*

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KLASA: 935-06/03-01208
URBROJ: 541-18-09/ *09* -03-2



Supetar, *07.03.2008.*

[Signature]
Ovlaštenik

Source: Zane Ltd's in-house database



UREĐENA ZEMLJA

Nacionalni program sređivanja zemljišnih knjiga i katastra

Figure 12 Reduced display of the extract from the scanned cadastral map in 1:1000 scale



REPUBLIKA HRVATSKA
DRŽAVNA GEODETSKA UPRAVA
PODRUČNI URED ZA KATASTAR KRAPINA
Krapina, Magistarska 12, tel/fax: 049/371-040

REPUBLIKA HRVATSKA
DRŽAVNA GEODETSKA UPRAVA
PODRUČNI URED ZA KATASTAR KRAPINA
KRAPINA

Katastarska općina: KRAPINA GRAD
Broj kat. plana: 23
Katastarska čestica: 3414/3,3975,5106/1

IZVOD IZ KATASTARSKOG PLANA

Klasa:935-06/08-01/01
Ur.broj:541-08-02/05-08-791
Krapina,26.08.2008.

IzvorNIK: skenirani katastarski plan

Mjerilo 1 : 1000



a) Upravna pristojba po tarifnom broju 1. i 55. u iznosu od 40 kn naplaćena je i na podnesku poništena.

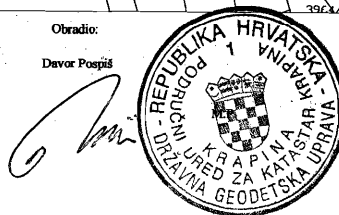
b) Oslobođeno pristojbe po čl. _____ točke _____ Zakona o upravnim pristojbama (NN 53/1991).

Materijalni troškovi prema pravilniku o određivanju stvarnih troškova podataka državne izmjere i katastra nekretnina (NN 26/2000) u iznosu od 30,90 kn naplaćeni u gotovini

Obradio:

Davor Pospiš

Orjerava:



Source: Zane Ltd's in-house database



In the cadastre, apart from the Internet and brochures, there is no specific information service, but anyone can visit the office and have access to the data. It is considered that the system of providing information has improved. The Public Awareness Campaign is being conducted through the national Organized Land Project and most citizens are familiar with their rights and obligations.

A local government unit representative from Zagreb points out that the situation in the City of Zagreb is not satisfactory regarding the provision of information to users. There are too many departments and the users have difficulties finding their way around.

The local government units publish on the internet all of their decisions that refer to the real property transactions and planning.

The judges in the land registry offices notice that farmers are a group of users having specific problems with their real properties. The farms were purchased mostly according to the status recorded in the cadastre and not according to the status recorded in the land registry office. The agricultural land is not attractive because it does not have a high market value but it has the value for the people cultivating it. Therefore, if they wanted to use the state incentives, they would have to invest significant resources in regulating their ownership status. The afore-mentioned problem occurs in the areas around Zagreb, then particularly in Slavonia and in the areas around Bjelovar, Daruvar, the Zadar hinterland (Ravni kotari) and the Neretva hinterland where a part is correctly recorded, but a larger part is not. The farmers are therefore a group that should be helped by the State to regulate their ownership status through special programs.

The respondents employed in the cadastre understand that construction investors have problems with the non-harmonization of the special geodetic data sets and cadastral maps so they think that significant improvements will be visible in this respect once this data is finally harmonized.

The local government units have problems with the buyers who bought the land from local government units (problems with records in land registry office), with citizens when physical plans change (frequent complaints) and with those who have not regulated the records of their real property regarding earlier possessors.

The prevailing opinion is that the number of persons having particularly complex problems has decreased in places where the land registers are renewed; the procedures have mostly been processed and completed there, which is definitely a very positive effect of the conducted cadastral surveys and the renewal of land registers.

5.10. Obstacles to using all the possibilities of the conducted cadastral resurveys and the renewal of land registers

The respondents see the following obstacles to using all the possibilities of conducted cadastral resurveys and the renewal of land registers:

- The computer applications used by land registry offices have shortcomings and the employees working with these applications are inadequately trained
- Inadequate quantity of good-quality computer equipment,
- Errors which have occurred during the transcription of land registers into digital databases (due to a large number of data that had to be transcribed and due to the inadequate expertise of some persons who performed the transcription),
- Complex displays in cadastre that very few users can understand,
- Too many regulations regulating different records and databases which are difficult to follow and which change very often
- In the areas outside Zagreb there is still a very small number of users who have access to the internet,
- Inadequate number of educated and professional persons who process the cases and work on the renewal.



6. OTHER KEY AREAS OF INFLUENCE

In order to be able to obtain a comprehensive insight into the impacts of the conducted cadastral surveys and the renewal of land registers, apart from the impacts they exert on LGU's, it is also necessary to analyze their impacts on other elements of importance for the process of the data harmonization of the real property registers or rather the elements of importance for achieving the real, final effects of these activities by enabling the use of the data renewed in such a way.

6.1. Impact on the performance of the institutions involved in the process of cadastral surveys and the renewal of land registers

Given that the end users of the renewed data (both the natural persons, LGU's and legal entities) very often experience the efficiency and usefulness of the conducted cadastral surveys and the renewal of land registers through the performance of the institutions involved in the process of exploiting this data, it is necessary to review this aspect in more details.

When conducting in-depth interviews for the purpose of this research, it was noted when talking with the respondents that the majority of respondents experience the Organized Land Project mostly through the process of the land registry and cadastre digitization and see through this very process the greatest influence of the Project on the performance of the institutions for which they work.

The respondents also mentioned the possibility of providing concrete data, processing cases that had so far been impossible to process, giving relevant datasets for the needs related to the real property exploitation, possibility of improved management of the real properties, increasing the revenues from the identified real properties, etc., as positive effects of the conducted cadastral surveys and harmonization of the data in official use. However, although the respondents are aware of the said impacts, the majority of the respondents experience the most important influence demonstrated by the effects of the entire Project as generating a new, positive climate and through the introduction of modern technologies in the everyday work.

The interviewed representatives of the land registries at municipal courts deem that their performance is mostly good and that they perform the required transactions successfully. For example, the implementation of the Project improved the performance of the land registry office of the municipal court in Sesvete so that now 91% of the applications are processed within 7 days, as opposed to the period preceding the activities implemented under this Project, when this percentage was much lower. The satisfaction with the performance is present also in Zadar and Rijeka. It is interesting that the respondents have expressed the belief that the cases in the Istria County are also processed quickly although the state of the land registers in this county is poor. The gravest situation, according to the interviewed land registration judges, is in Dalmatia and the City of Zagreb where the greatest differences between the land registers and cadastre exist.

As one of the great benefits of the Project, the land registration judges also point out the continuous education implemented under the Project and especially the legal training of all land registry clerks as well as the IT training on using the new technologies in everyday work.

Heads of cadastral offices also believe that they are successful, if taking the number of resolved cases as the performance criterion.

The local government unit representatives were unable to give an unambiguous reply about the performance issue. This is not surprising given the spectrum of tasks that they are responsible for is wide, that their interaction with other institutions is complex and that the legal framework imposes the modes of functioning. They think that they are successful given the realistic conditions under which they operate.

The obstacles facing the land registries identified by the respondents are most often the inadequate legal regulations that obstruct the faster work on establishing the land registers. Namely, the



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respondents believe that the Land Registry Act (OG nos. 91/96, 114/01, 100/04, 107/07 and 152/08) was written having in mind the regulated land registers while they are mostly not regulated in the territory of Croatia so the existing Act is not applicable. The other key obstacle is the lack of employees, especially the educated ones and the necessary work equipment.

In order to improve the functioning, the land registration judges deem that it would be necessary to amend the Land Registry Act and other regulations with regards to the final procedure of regulating the real property records as well as the process of renewing and transforming the land registers whose implementation is faced with a number of normative obstacles.

Figure 13 Land Registry Office at Municipal Civil Court in Zagreb



Source: www.tportal.hr, Organized Land, www.metro-portal.hr, www.vecernji.hr

Heads of cadastral offices state that the personnel issue is of utmost importance for them, that the number of qualified employees should be increased and that the operations that they perform should be adequately rewarded.

Apart from the need for new employees, heads of cadastral offices underline the Physical Planning and Construction Act (OG nos. 76/07 and 38/09) as an obstacle to work more successfully because of the inability to form the parcels which prevents the physical planning. They believe that there the regulations have been amended a lot in the past 10 years and that the employees have difficulties to follow and to implement the afore-mentioned regulations.

Local government unit representatives state that there are problems at the personnel level (inadequate employees' structure, too few architects in, for example, Rijeka), the internal organization level (Zagreb), cooperation with other institutions, etc. However, they agree that, apart from the specific problems that they have, the biggest obstacle to the functioning presents the current economic crisis. The interest of the investor has decreased and towns such as Zadar are trying to influence the development of this industry by offering various incentives.



The conducted interviews clearly show that the replies of the local government unit representatives are much more general while the replies of the land registration judges and heads of cadastral offices are focused on the specific tasks that these institutions have.

The respondents consider the introduction of modern technologies that have significantly alleviated the working conditions, improved the performance and made the institutions for which they work more successful as the most significant benefit of the activities implemented under the Project.

The land registration judges point out that great improvements in terms of performing the tasks were booked as the result of greater speed, clarity and transparency due to the computerization, introduction of the land registration applications, association and cooperation with other land registries in Croatia, and because of the website.

Heads of cadastral offices underline better business organization and digitized branch offices. The textual parts were transformed into databases and a new program called "Vectoria" was introduced that keeps records of not only the textual but also the graphical part i.e. everything is accompanied by images as well.

Local government unit representatives also recognize the improvements resulting from the introduction of modern technologies. Now the employees have access to network and IT services, communicate faster, the flow of information is faster, the information is of better quality, it is possible to make decisions faster and the citizens can contact the employees via the Internet and obtain information about the work of the local governments.

All the respondents stress that they realize that this has been necessary, that they cannot continue to work without it and that this is a trend that simply had to be created and instituted.

6.2. Impact on the ownership rights and real property transactions

There are various opinions among the respondents about the current state of the system of registering the real property as well as ownership and other rights related to the real properties and real property transactions, although the majority of the respondents recognize a positive correlation between the regulated ownership status and the increased real property transactions.

The land registration judges mention that the situation is different in various parts of Croatia and that it is difficult to talk about an overall situation. The situation in the northern, continental parts of Croatia has been assessed as relatively good, especially in the parts where land consolidation was completed in the 1980's while the situation in Dalmatia is for the most parts not regulated or rather the situation in the land registers does not reflect the actual situation in the field. The area around Rijeka was taken as an example because it shows a visible increase in the real property transactions in the areas where the status of the cadastre and land registers has been harmonized, as is the case in the areas of Kostrena, Kraljevica and Viškovo whereby the Rijeka area records the biggest number of real property transactions and the biggest profit for the local government, generated by the real property transaction tax (as confirmed by the data in Chapter 5.1).

Heads of cadastral offices are not satisfied with the current manner of keeping the records and underline the problem of the existence of two separate institutions (land registries and cadastral offices). They believe that one should aspire to unifying the real property registration and records at one place. According to their opinion, everything should be merged into one institution under the authority of the regional cadastral offices which would result in an accurate registration of all the real properties. The respondents representing heads of cadastral offices state that the judiciary considers the merging of the cadastre and land registries represents an effort to leave the judiciary jobless and consider it as a big „informal“ problem preventing the integration of these two institutions.

The local government unit representatives state that the situation in general is good, that the databases are improved and that there is a clear overview of the land registers. Some of them point

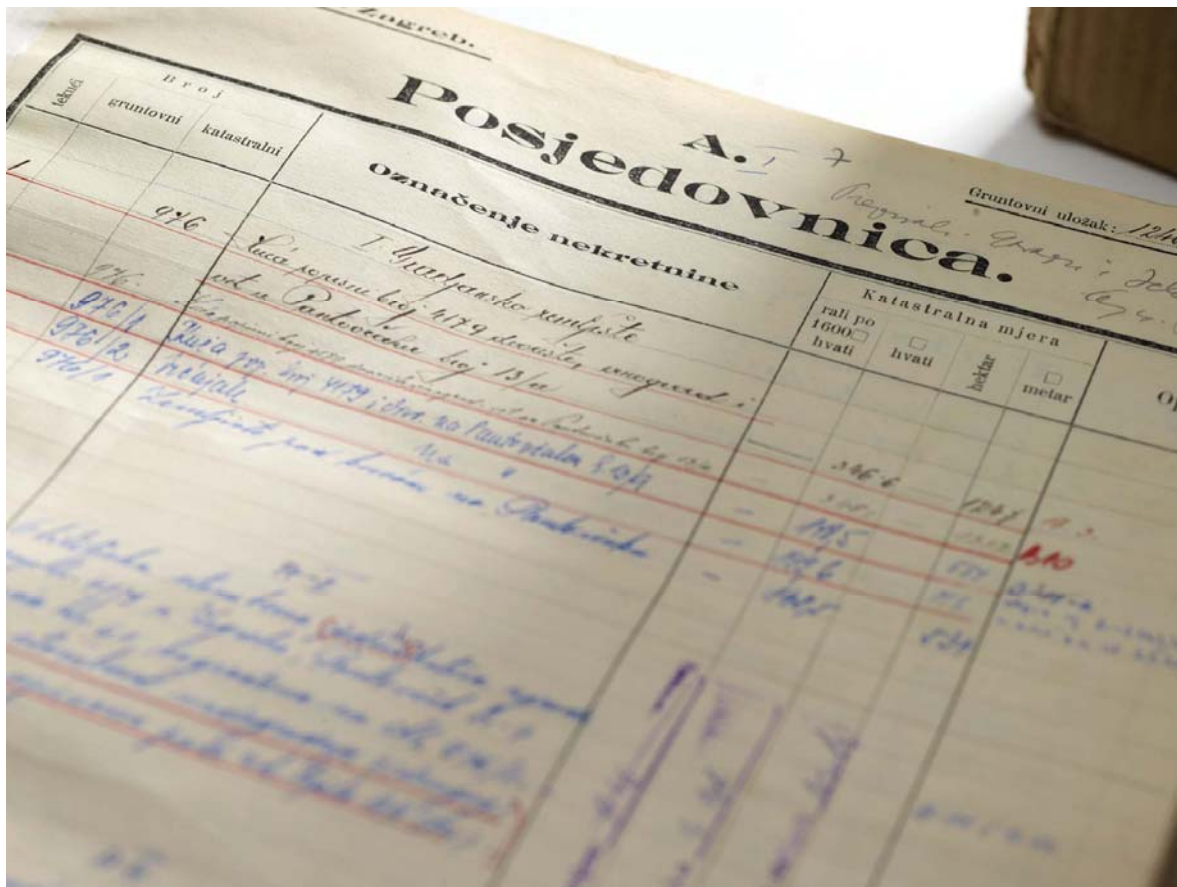


out that this impacted the increased profits of the LGU's in terms of charging greater amounts for utility fees and contributions due to better records on the real property ownership and usage, although they do not have concrete statistics.

All participants in the research believe that the mismatching records are the biggest problem. When the land registries and cadastre mismatch with regards to the parcel number, its size, position, shape, ownership and/or degree of development, this creates numerous problems in disposing with the ownership (sales transactions, building activities, physical planning). Here is where the respondents see the greatest potential in terms of obtaining benefits from the already conducted cadastral resurveys and data harmonization, especially through future surveys, until full harmonization of the data and records is achieved. It has to be mentioned here that, although the respondents lacked any concrete statistics, greater volumes, in part directly influenced by the regulated real property ownership status, were recorded in the areas where cadastral resurveys had been completed. This primarily indicates the increase in the revenues from utility contributions (Chapter 5.1), increase in the revenues from the real property transaction tax (not consistent for all areas where the surveys have taken place but still giving an indication). Although it is not always possible to pinpoint the portion of the increase that relates to the effects of the conducted resurveys and related activities, it is still clear that the correlation exists.

The citizens, unaware of their duty or rather obligation to record the changes, are underlined as a separate problem. The citizens have the obligation to report every change (real property transaction, change of personal details, etc.) both in the land registry and in the cadastre. It often happens now that the recorded status of ownership does not reflect the actual situation, i.e. that it is necessary to find and prove who the real owners are. This creates problems in sales transactions and prevents the full potential of the real estate market to be fully used.

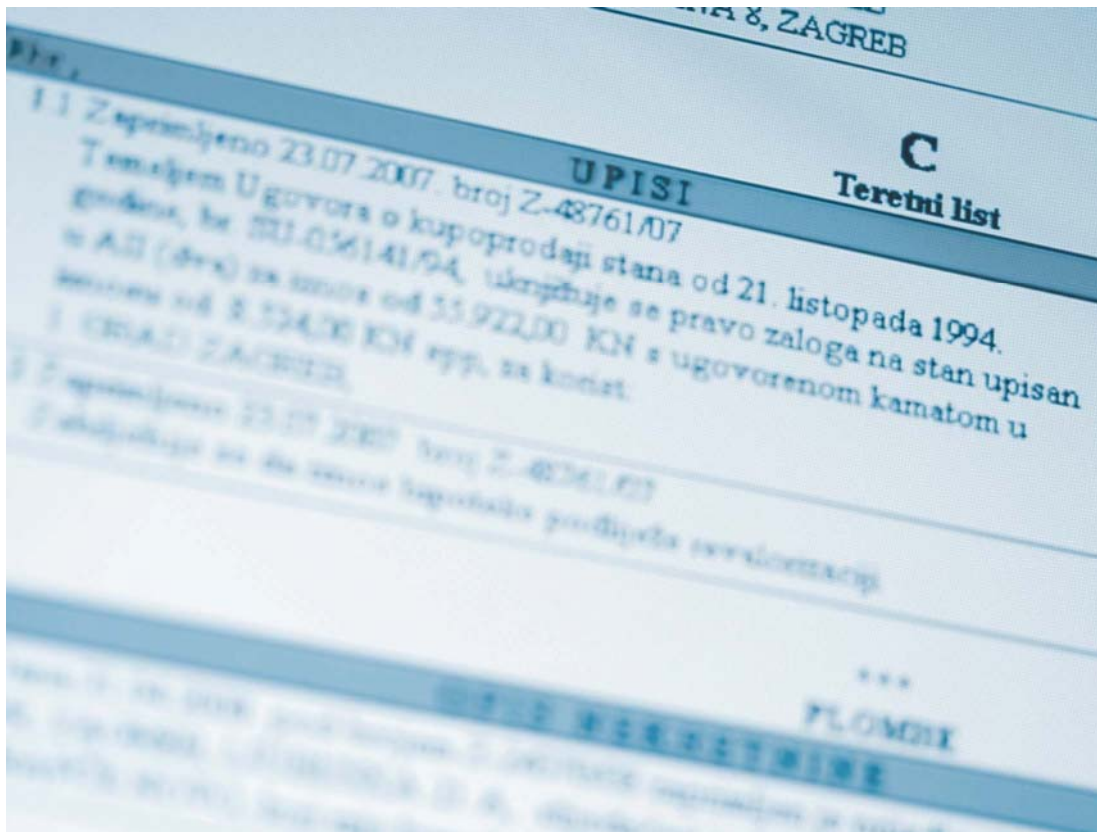
Figure 14 Manually kept Land Registry Book



Source: Organized Land



Figure 15 Display of e-Land Registry extract



Source: Organized Land

6.3. Impact of the mismatching data on the functioning of the entire system

All the groups encompassed by the research (land registration judges, heads of cadastral offices and local government unit representatives) agree that, wherever the data and records on the real properties are harmonized, it is possible to use them optimally and to a greater effect. The problems detected in the system of recording the real property, ownership and related rights are stated as having a negative influence on the economic development of the society. Although the respondents are aware of the conducted cadastral resurveys, only a small number of the respondents directly linked them with the LGU's during the interviews.

The respondents recognize that, due to the unregulated registration of the real property titles, the possibilities for building and further developing the real estate market are limited and that the development of the economy as a whole is also limited. However, very few of them recognize concrete links between the conducted cadastral surveys and the growing number of investments or vacancies, although it is evident by looking at the market in the past years that the links exist or rather that the number of investments in the real property segment has increased in the areas where cadastral resurveys have been carried out.

The respondents believe that the unregulated situation aggravates the physical planning and its practical implementation although the current physical plans are in force throughout the RoC so it should not be concluded that the unregulated situation is an obstacle to passing these plans.

Although the impact on the physical planning is addressed separately in this Analysis (Chapter 5.2), it should be mentioned here that the mismatch between the cadastral and land registry data is more of



an obstacle to the enforcement of physical plans than to their adoption (although the data in Chapter 5.2 shows a positive correlation between the duration of the physical plan adoption procedure and the implementation of cadastral resurveys and the renewal of land registers in the sense that where the resurveys have been carried out and the situation in official use is harmonized, the process of adopting physical plans is faster, probably due to the fact that there are no protracted public reviews and halts in the process due to disorderly records).

Furthermore, the land registration judges state that the records show that the number of litigations and disputes about the real properties has been significantly reduced in the areas where the surveys have been carried out and the situation in official use is harmonized.

Heads of cadastral offices mention that the mismatching records slow down the system functioning and that a lot of time is lost on updating or rather maintaining and changing the data. Heads of cadastral offices believe that savings can be created by merging the cadastre and land registries because the parties would then not need to travel from the cadastre to the land registry and vice versa, thus making the work cheaper and faster.

The respondents see the solution for the mismatching data in the data being further harmonized, in investing in additional funds at the State level aimed at regulating the property-rights relations and in merging the cadastre and land registries into one institution. When implementing the afore-mentioned, the key lies in a more active participation of both the executive and legislative powers and the involvement of the counties and local government units, as well as the development of the public awareness in particular as to the rights and obligations in recording the ownership and related changes.

6.4. Impact on improvements in the system of registering the real properties as well as ownership and other rights in the past five years, as influenced by the renewal of the cadastre and land registers

The land registration judges and heads of cadastral offices agree that significant improvements have taken place in the system of registering the real properties as well as ownership and other rights in the past five years or rather in the period of the Project implementation.

According to the respondents, the improvements relate to the following:

- a) Initiation of numerous land registers renewal procedures. The renewal is in an advanced stage but it will still take many years to achieve an ideal situation. The respondents underline that the current state is different in different parts of Croatia.
- b) The introduction of the IT system as the key element that will improve the system efficiency: The introduction of the IT system has reduced the time for processing cases and enabled faster access to information.

According to the respondents, the stated changes have directly affected the improvements in the system of registering the real properties, ownership and other rights, and have created a number of positive consequences that impacted the satisfaction of the users using the services of the land registries and cadastral offices (banks, surveyors, investors, citizens, etc.). Its direct impact on the development of the economy in general has been firmly identified and the efficient real estate market has been recognized as a strong impetus for a whole number of supporting industries that combined have a relevant percentage in the overall economic balance (in general, the unregulated property-rights' relations are halting the development of the infrastructure, economy and foreign investments).

Local government unit representatives do not have a clear insight into specific improvements and they could not identify the intensity of the improvements and the reasons causing the improvements. The lack of knowledge about the problems of registering the real properties, ownership and other rights and the wide spectrum of interests that they hold make them less competent collocutors when it comes to the specificities of the system of registering the real properties, ownership and other rights.



The respondents share the opinion that the positive changes have been inspired by the alignment of the Croatian legislation with the EU regulations, and have been partly conditioned by the awareness and needs of the citizens.

The respondents believe that the improvements in the system of registering the real properties, ownership and other rights due to the implementation of cadastral resurveys and the renewal of land registers have also had a positive impact on the real estate market itself in terms of increasing the real property transactions and in terms of completing a greater number of real property sales transactions more successfully.

Table 22. Statistics of selected land registries and their performance by category for October 2009.

	Požega	Koprivnica	Rijeka	Zadar	Zagreb
Received cases	559	500	2.059	1.335	5.472
Cases resolved	615	496	1.986	1.298	6.973
Unresolved cases	260	157	580	435	22.119
Scope of case processing	110% (5)	99% (4)	96% (4)	97% (4)	127% (5)
Backlog in months	0 (4)	0 (4)	0 (4)	0 (4)	3 (1)
Verification %	100% (5)	100% (5)	100% (5)	99% (5)	100% (5)
Processing in 7 days (of new cases)*	71% (4)	95% (5)	88% (5)	79% (4)	38% (1)
No. of parcels inside jurisdiction	201.085	253.540	221.951	314.528	294.368
No. of parcels harmonized with the cadastre	6.093	3.059	13.788	42.781	-
Overall level of operations	4,5	4,5	4,5	4,25	3

* the number in parenthesis determines the performance by category on the scale of 1 to 5 whereby 1 represents the lowest performance rate and 5 the best performance rate

Source: Organized Land statistics

The table shown above clearly indicates that, among the observed locations having the degree of operations marked as 3, Zagreb stands out while the performance rate in other towns is 4.5 or rather 4.25. The moderate overall rate for Zagreb is mostly influenced by the number of as much as 22,119 unresolved cases and the 3-month backlog in processing the cases although approx. 1,500 cases were resolved in the observed period as compared to the applications received.

An important performance indicator of land registry offices is the percentage of unresolved land registration cases by year. At the level of Croatia, the peak is 2005 when 25% more cases were processed as compared to the number of the cases received, and the backlog was cleared. Since 2003, the land registry offices in Rijeka, Zagreb and Zadar have raised the level of resolved cases to over 100% while the land registry offices in Koprivnica and Požega need more time for that. The percentage of the cases resolved at the level of Croatia and at the level of the observed towns converges towards the target amount of 100% (in other words, all received cases are resolved) apart from Zagreb where the percentage of resolved cases continues to exceed 100%, which means that the backlog created in the previous years is also being cleared.

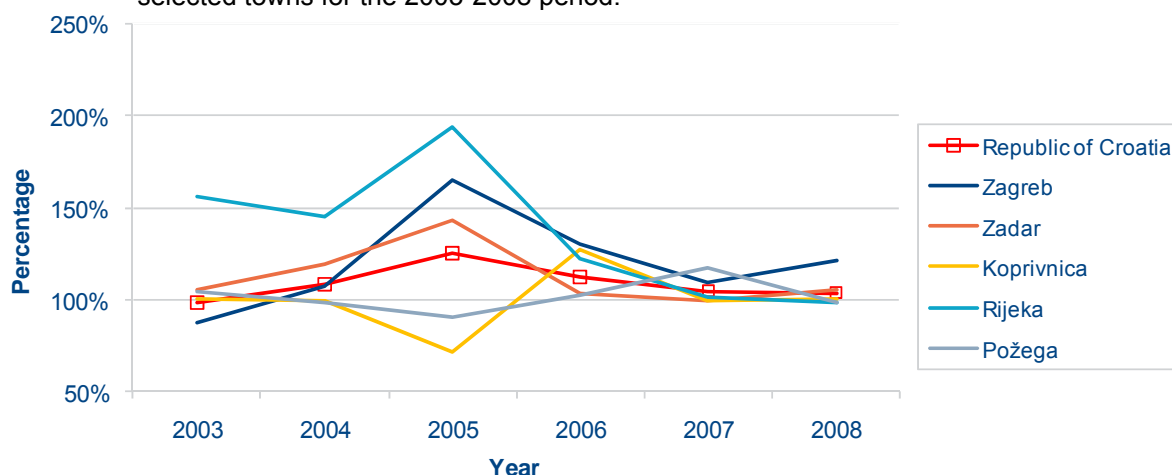
Table 23. Number of the resolved land registration cases in the Republic of Croatia and selected towns for the 2003-2008 period.

	2003	2004	2005	2006	2007	2008
Croatia	98%	108%	125%	112%	105%	104%
Zagreb	87%	108%	164%	131%	109%	121%
Zadar	105%	119%	143%	103%	99%	105%
Koprivnica	100%	99%	72%	127%	99%	100%
Rijeka	156%	145%	194%	122%	101%	98%
Požega	104%	98%	90%	102%	117%	98%

Source: Organized Land



Graph 25. Percentage of the resolved land registration cases in the Republic of Croatia and selected towns for the 2003-2008 period.



Source: Organized Land

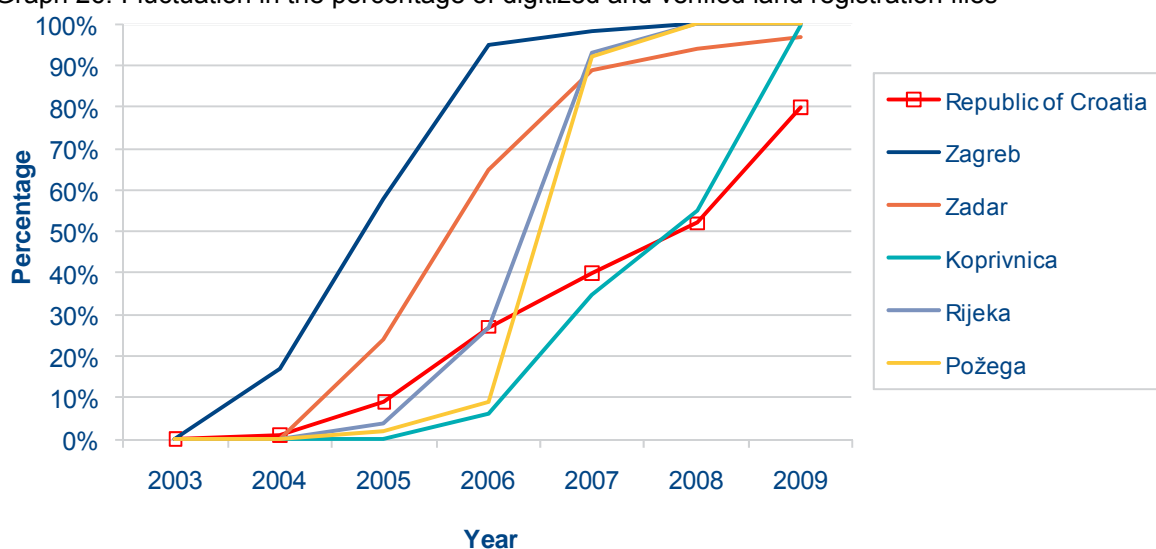
The data on the percentage of the digitized and verified land registration files has also been collected. This means that the files have been digitized and that the harmonization of digitized files has been double-checked against the file from the paper land registers. All the land registry offices started from zero in 2003 while today the verification process has been completed at 3 out of the total of 5 observed locations while another 3% or 0.4% respectively of the land registration files needs to be verified at the two remaining locations.

Table 24. Percentage of digitized and verified land registration files

	2003	2004	2005	2006	2007	2008	2009
Croatia	0%	1%	9%	27%	40%	52%	80%
Zagreb	0%	17%	58%	95%	98%	100%	100%
Zadar	0%	0%	24%	65%	89%	94%	97%
Koprivnica	0%	0%	0%	6%	35%	55%	99,6%
Rijeka	0%	0%	4%	27%	93%	100%	100%
Požega	0%	0%	2%	9%	92%	100%	100%

Source: Organized Land

Graph 26. Fluctuation in the percentage of digitized and verified land registration files



Source: Organized Land



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When analyzing the replies given by the respondents who participated in in-depth interviews, it can be observed that the prevailing opinion is that the renewal of the cadastre and land registers has positively influenced the real estate market. The land registration judges state their experiences with the number of transactions, speed of implementing the transactions and placement of loans have significantly been increased in the areas where these activities have been implemented. Heads of cadastral offices believe that the investors lean towards choosing the location where the situation is clear and where legal security has been established because it also increases the probability that the transactions and investments will also increase along with the certainty that the real property value will increase, too. The importance of accelerating the processes at the real estate market has been recognized also by the local government unit representatives.



7. COMPARATIVE ANALYSIS PER AREA

The following table shows an overview of the different answers obtained from the respondents, categorized by location and by the difference in replies.

Table 25. Overview of discrepancies in answers according to the topics and the respondents' location

	Location				
	Zagreb	Zadar	Rijeka	Koprivnica	Požega
Level of case processing performance	- (surrounding area, e.g. the situation is much better in Sesvete)	+	+	+	+ LR court was also successful before
Difficulties encountered by institutions	Bad internal organization of local government unit	Economic crisis (they try to affect the employment rates)	Personnel problems (not enough architects)		Personnel problems
Real property registration system	- (dissatisfaction with slow work of LRO's, misunderstandings)			+ No problems	Good, land consolidation completed in the eighties of the last century
Providing information to users	- (too many departments in a local government unit)				Many users do not have access to internet
Impact of the Project on the budget	None.	Positive.	None. The situation regarding the real property records status was also relatively good before.	None. Even before, the situation had been regulated, they have had digital cadastre since 1997.	None. The Special State Concern Areas – mostly the real property transaction tax is not paid
Problems faced by farmers as a group		Appear in the Zadar hinterland			Due to cheap land, very often the procedure of registering ownership titles is more expensive than the land itself



In principle, there are no big differences among the locations covered by the research. It has been pointed out that the situation regarding the real property records is much better than five years ago at all the locations. The previous level of organization is taken as a benchmark. Some locations such as Rijeka, Požega and Koprivnica were not in a bad situation before, so the progress is weaker.

The improvements are uniform: the digitalization is completed as are the re-surveys (at least some parts at every location), harmonization of cadastre and land registers and training of experts (at least partial). All this has enabled the land registry cases to be processed faster and has reduced the time spent with the clients (who are also happier). Furthermore, it has positively influenced the speed of processing land registry transactions which opens up new possibilities for the real property market and new investments. It has also facilitated the urban planning and development of utility-related activities.

Therefore, this indicates a pattern of changes and effects noted everywhere, regardless of the degree of the cadastre and land register renewal, demonstrating no significant differences of quality between the locations. To record more precisely the differences among the locations, it is necessary to conduct further research or wait a certain amount of time in order to see the effects of the renewed cadastral and land registration data.

Many respondents have underlined that this is a recent project and that more time is needed to be able to evaluate the results objectively and to understand the actual changes and impacts.



8. CONCLUSION

The Analysis demonstrates the impact of the conducted cadastral resurveys and the renewal of land registers on the real property market in general and on the local government units in particular.

The impact has been recognized at several levels and mostly concerns the fluctuation of the budget funds collected by the local government units caused by greater possibilities for exploiting the real properties and better determination of the real property titles. The impact can be seen in the growing investments at the real estate market in terms of the investors being motivated to invest under the influence of the regulated real ownership status as well as in the bigger employment rate per local government unit and the economic potential as a whole.

Particular attention has been paid to the analysis of the impact on the urban and residential developments and the physical and urban planning in general as well as the utility services and the environmental, fire and civil protection. As a consequence of the conducted activities, the impact has also been measured with regards to the satisfaction of the users of land registries, cadastral offices and local government units as well as how the use of the data renewed in such a way impacted on other elements of importance for the realization of the actual, final effects of these activities. Hereby, the analysis has focused primarily on the performance of the institutions involved in this process, the status of ownership rights and real property transactions, how the problem of the data mismatch impacts on the functioning of the entire system. Furthermore, the improvements in recording the real properties, ownership and other rights in the past five years have been described with regards to the conducted cadastral resurveys and renewals of land registers.

In all of the above-mentioned categories, benefits of the activities implemented under the Project have been recognized although it has not always been possible to substantiate them with the statistics, given that the other real estate market mechanisms (such as the demand and offer, etc.) also impact on the performance indicators that are relevant also for the activities implemented under this Project. However, regardless of the quantity of the data allowing to clearly isolate the trends or confirm the concrete statements given by the respondents involved in the research, it has been clearly confirmed that the conducted cadastral surveys and data harmonization have had a strong synergic effect, together with other market trends, and have contributed to the overall positive climate that has driven the market.

The implementation of cadastral surveys has been recognized as necessary for creating a platform for harmonizing the data in the cadastre, land registries and in the field while the harmonized data status is a prerequisite for further real estate market development. The harmonized status is also especially important in order to achieve optimal benefits from the real property sales since there is a direct link between the regulated and transparent ownership and the real property value as well as the number of the real estate market transactions in general. The research has confirmed that the volume of the real property transactions has increased in the areas where the data between the cadastral municipal documentation and the land registers has been harmonized.

During the research, the respondents have also assessed as particularly important some overall effects of the entire Project. First and foremost, the respondents believe that the activities implemented under the Project have affected the increased work performance of the institutions of relevance for the real estate market, primarily the land registry offices, cadastral offices and its counterparts within the LGU's. The respondents link this effect not only to the implementation of resurveys and the renewal of land registers but also to the introduction of modern technologies and the training of the staff on how to use them, as has been made possible by the Project. The respondents see the significantly reduced number of litigations and disputes related to the real properties as a consequence of the increased performance of the institutions and these effects are particularly visible in the areas where the data has been harmonized.



The increased performance of the institutions has led to the growing satisfaction of the users with the services provided by these institutions while the improved work of these institutions will indirectly lead to the creation of further preconditions for using the overall potential that these activities yield for the economy in general.

The respondents point out that further education of the staff of the institutions would entail considerable further improvements of the work performance of the relevant institutions as well as the overall increase in the number of high-quality, trained workers.

As part of the research, the respondents recognized the limitations to the implementation of cadastral resurveys and the renewal of land registers and were aware that the procedures necessary for their implementation were extremely complex and costly.

Although the respondents during the interviews confirmed that they recognized the progress in standardizing the real property data between the cadastral records, land registers and the actual situation in the field achieved by implementing the cadastral resurveys and the renewal of land registers, the respondents think that the data mismatch between the land registers and cadastre still represents a problem for the real estate market transactions and prevents the potential of this market to be fully used. The lack of the awareness of the owners' obligation to report changes has also been pointed out since the citizens are still not fully aware of the need to record the actual situation in the cadastre and land registers, which additionally contributes to the mismatching data.

With the help of the data obtained when testing the attitudes of the respondents during the interviews, the research has confirmed that the harmonization of the cadastral municipal documentation and the land registers has yielded a platform to further develop the real estate market and supporting industries and to use the resources related to this market in an best way.

The parties involved in this research share the opinion that, given the potential of further carrying out the activities under the Project until completely harmonizing the data about the real property status and ownership in the cadastre and land registers, the cadastral surveys and further data harmonization should certainly continue, respecting the limitations imposed by the lack of resources and by the protracted procedures.

It is therefore important to take into account the real and concrete objectives when prioritizing the RoC parts to be further surveyed as well as weigh the interests of respective LGU's when reviewing the requests for implementing these activities. After having selected the locations for implementing further activities, care should be taken that the activities are monitored and that improvements are balanced in terms of further investments in the staff (new employees, training, adequate salaries) and the degree of the technical equipment of the institutions in order to maximize the effects of the implemented activities and the practical achievements.



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