# Institutional Reform In Land Administration: Does Simplification Create Transparency?

Aida Custovic
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# Institutional Reform In Land Administration:
# Does simplification Create transparency?

by

Aida Custovic

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Thesis Assessment Board

| | |
|---|---|
| Chair: | Prof. Ir. Paul van der Molen |
| External Examiner: | Dr. Petter Pilesjo |
| First supervisor: | Dr. Arbind M. Tuladhar |
| Second supervisor: | Drs. Johan de Meijere |
| Course coordinator: | Andre Kooiman |


UNIVERSITY OF TWENTE.
FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

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# Abstract

The main objectives of this paper were to identify elements of institutional reform that are most affected by simplification of land registration procedure and to analyze access to information in terms of transparency.
To achieve these objectives, registration processes were observed in two countries, Croatia and Netherlands. For this research qualitative approach is used, meaning that collected data are more in the forms of words than numbers. Open and semi – structured interviews were conducted with various stakeholders of the system. Comparing countries with different political, cultural, historical backgrounds and different land registration systems, three main indicators of simplified procedure were derived: cost, time and number of steps. Institutional requirements of each country for achieving lower number of mentioned indicators were studied. After analyzing affected institutional elements this research takes an approach of system modelling where Croatian land registration system is re-engineered in order to achieve simplicity. Models are developed using UML. The proposed model is divided into four subsystems: supply, update, subdivision and transfer. Each subsystem is explained at organizational and functional level. Organizational model includes databases at central and local level. Database at local level contains information from local cadastre and land register offices. Central level can access and supply information at customers request. Base of land records is at central level and contains selected information which is provided out of charge to all customers with Internet connection. Functional level includes main processes and functions of mentioned subsystems. Finally data model for the local databases is created based on core cadastral domain model. At the end process is assessed to prove that reduction in time, cost and number of steps has occurred. .Establishment of proposed effective system of land registration is major challenge for Croatia, country which is facing rapid development of land and real estate market. Process re-engineering is based on the research findings that organizational and legal aspects are the most important elements of institutional reform in land registration system. Organizational aspects are the most affected by simplified procedure of land registration process. Complexity of the procedure negatively influences access to information. Access provided by different organizations to the same data causes customers confusion and dissatisfaction. Simplicity of procedures can contribute to trust building, but it is not the ultimate requirement. Creating environment where people trust into system is essential to create well functioned system.

Key words: transparency, simplification, land register, process re-engineering

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# 1. Introduction

## 1.1. Background

Non-transparent management in dealing with land issues in any country can prevent both; socio-economic and environmental development in sustainable way. Therefore, one of the important requirements for organizing and arranging land matter is to establish an effective and well organized reliable Land Administration System. Key dimension of well-functioning such system is a high level of transparency that is essential condition for reducing corruption in land dealing.

Transparency is defined as "a process by which information about existing conditions, decision and actions is made accessible, visible and understandable" (Nelson, 2001). There are three basic elements that are most essential for bringing transparency to the users of the system. There are access to information, public participation and institutional reform. On the top of these elements, professional ethics and code of conduct bring LAS effectiveness in service delivery.

Open access to land information about land ownership, land value and use limits illegal land sales and helps to prevent illegal actions on land (Molen, 2007). Public participation is to promote transparency by taking into account the views of citizens in development decisions and it varies between simple sharing of land information and active engagement in decision making process (UN HABITAT, 2004).

Third element of transparency, institutional reform is probably the most complex one as it refers to issues such as legislation, organization, decentralization, coordination between different organizations, regulations, standards, etc. Moreover, definition and scope of institution is often perceived differently by different disciplines or organizations. In LAS, if one talks about simplification of organizational processes, there are these issues of institutional reforms that require careful attention.

According to North (1990) "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. Theory of institution is based on human behaviour combined with theory of the transaction costs. See figure 1.1. In process of exchanging goods one party is always more informed about valued attributes of certain product than the other. In order to gain profit, party can easily conceal that information. Maximization of an asset's

value can be caused by those parties who influence the variations of attributes of the asset. Therefore, transaction cost is determined by the costliness of information. In other words, the measurement of the attribute's value and costs of protecting rights over asset are paid. Hence, individuals behave opportunistically and boundedly rationally it is impossible to structure perfect sales contracts in the property market (Zevenbergen, Frank and Stubkjaer, 2007). North also pointed out that transaction cost reflects complex of institutions that arrange economy and also society. He argues that lack of information creates chances for opportunistic actions In order to prevent that, different administrative institutions should develop systems which would offer reliable and up-to-date information to the involved parties and that would decrease the transaction cost. But it is still is not clear how to perform institutional change and what tools to implement for the purpose of making information available to everyone without corruptions.

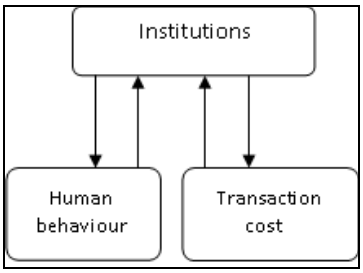

**Figure 1.1: Concept of Institution**

If institutions are rules of the game, organizations are involved players. According to North (1990), organization provides a structure to human interaction which consequently reflects to the human behaviour. Organizations include combination of skills, strategy and coordination of the players - group of individuals with the same purpose to achieve objectives using the same rules. Organizations are thus designed or developed inside the institutional framework, but at the same time they create their own framework which can influence the costs that arise in the service delivery.

Information Technology combined with institutional reform is the engine for organizational change. But applying technology into practice and people's everyday work and life is a long term process. Bloomfield and Hayes (2009) confirm this by underlying the key concept of change is not to focus on organizational structure but rather on the concrete work practice and what people actually do within "rules of the game". Sometimes manual system in developing countries works well, even though theoretically it is not expected to be efficient (McEwen, 2001). Silva (2007) gave an example from North America where GIS system failed to be accepted by Indian Organizations because they found it senseless. Therefore it is not advisable just to adopt new technologies without process of learning. If new technology is going to be adopted and institutionalized, it must be understood by people who use it.

In Land Administration System effective implementation of Information Technology (IT) combined with GIS (Geographic Information System), RS (Remote Sensing) and control of transaction cost will create strong organizational structures or processes which will increase transparency. In such innovative environment, Silva (2007) indicates that there are many institutional obstacles of such implementation. The idea of using concepts on organizational structures from the developed countries for the third world countries is more complex due to institutional barriers on the changes required. Even in the developed countries it is impossible to perform changes within organization if institutions are not well established for using latest technologies supported by appropriate innovations. In general, it is necessary to establish appropriate legislation and legal framework and simple processes with clear steps within and between organizations.

There are various tools provided by UN HABITAT (2004) for helping institutional change and to increase transparency. Some recommended tools are establishing mandate of organizations, service charter and front offices that deliver service. Mandate of organization contains information about responsibilities and duties of certain organization toward specific task. Service charter offers information about the level of the service that is being provided within reformed environment. Also if service goes wrong, organization is itself responsible for compensation of the losses. It helps in trust building between organization and public. The role of front offices is to provide services and inform general public about the role of specific organization and services and to increase public participation to information. But its role is highly dependent upon operation of back offices and basically it provides information about actions taken by back offices. It also helps to improve communication between citizens and government and contribution to public participation. All these mentioned tools support institutional reform by implying simplification of administrative procedures. One simple approach for simplification is to develop one stop shop where organization's interaction with its customer is coordinated, recorded and structured by customer relationship management.

Simplified land administration system within one stop concept enables citizens to get all information by contacting transparent front office. Other approach for access to information is by mail, phone or internet. All processes for the services are normally completed by back, hidden office which makes customers time and expense saved. Example of one stop shop at the European level is EULIS, (European Land Information System) which provides direct access to official land registers of member EU states (Gustaffson, 2008).

## 1.2. Research problem

According to UN-HABITAT report (2004) transparency is critical when dealing with land policies, land transactions, information about land availability and registration rights. Land registration aims to respond on basic questions: "Whose land? How much land? Where is it located?". If institutional reforms are not done appropriately during simplification of organizational processes, answers to these questions easily trigger many land conflicts about land ownerships and use of land. This calls into the questions on the role and objectivity of governance when institutional reform as one of the transparency elements takes place

Another issue is that people in many developing countries lost trust and confidence in public institutions (although there are variations between countries) because of the lack of transparency. If procedures are hidden, people are often inclined to believe that they are taking place outside the law. (Wallace, 2006). Without transparency and confidence in government, economy of the country collapses creating negative impact on the Gross Domestic Product (GDP) (UN-HABITAT 2007). Process of building trusts on public organizations takes time, especially because trust is subjective concept linked to human behaviour theory. It is important step toward establishing good governance. Trust and good governance support and feed into each other (Blind, 2007). When applying good governance principles to land administration in order to prevent corruption, the essential and most effective way is to include organizational manual (as quality manual) with a set of rules and expectations about procedures (FAO, 2007).

However, the complexity and unclear legislation of Land Administration procedures creates opportunities for corruption. The registration process of land ownership is often complex and time demanding. The pilot project made for Mongolia (Bagdai, Veen, Molen and Tuladhar, 2009) showed that privatization process is hardly understood by citizens and potential landowners. They are forced to visit many land offices and submit various documentations in order to allocate their property. Like this there are many other examples of complexity of procedures within land administration. Land titling process in Ecuador is taking between 9 months and 5 years. In Peru it lasts approximately 43 months, in Bolivia it takes about 23 steps which means many years (Molen, 2002). If these processes were simplified land administrators and employees would be limited in pursuing their own self-interests. Working with standardized rules makes irregularities within fees, change and proceeding time more visible (Molen, 2007). The complex procedures are fruitful for corruption and also coming with an extra complication – increase of transaction cost.

As the above experience shows, land registration process runs well only if every transfer is transparent and registered (Zevenbergen, 2007). Even though registration is obligatory in many countries, people still avoid registration of every transfer. Reason is complexity of the system which involves energy, money and time needed for collection of documents. The most important aim of land registration is to support on reducing uncertainty on land tenure rights. But reduction of uncertainty on exchange of land rights may also cause higher transaction cost.

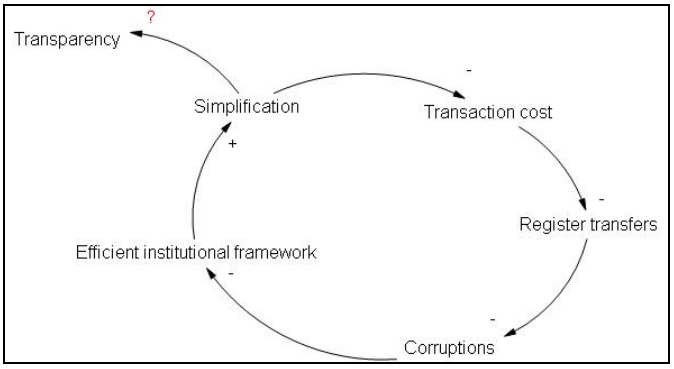


**Figure 1.2: System dynamics of register transfers**

As we can see on the figure 1.2 of casual loop diagram shows transaction cost as a main driver in the system. Lower transaction cost increases the number of register transfers. If transfers are registered through simple procedures, opportunities for corruption are lower. If there is no corruption it means that institutional framework function well. And only with efficient institutional framework it is possible to perform simplification of the procedures. However, it is still not clear if simplification brings transparency, because research is required to find out which elements of institution are affected by simplification of organizational processes and how.

## 1.3. Research objectives

The main objective of this research thesis is to investigate the role/impact of simplification of the registration process on institutional reform and access to information for Land Administration System. In order to accomplish those case studies of two countries system will be conducted. The sub-objectives are formulated as follows:

a) To identify and analyze elements of institutional reform that are most affected by simplification of the land registration process

b) To analyze access to information in land administration in terms of simplification and transparency

### 1.4. Research questions

In this research, the following questions are laid down to achieve each of above sub-objectives:

a) To identify and analyze elements of institutional reform that are most affected by simplification of the land registration process

1. What are the most important elements of institutional reform in Land Administration Systems?
2. Which institutional elements are the most affected by simplified process of the land registration?

b) To analyze access to information in Land Administration in terms of simplification and transparency

3. How complexity of the procedures affects efficient access to information?
4. How does simplification contribute on building trusts and transparency?
5. How can registration process be simplified to achieve transparency?

### 1.5. Methodology

The following methodology will be employed for this research and carried out into four main phases as indicated in the figure 1.3:

a) Literature reviews
b) Case studies and fieldworks
c) Analysis of affected institutional elements, access to information and relations between transparency and simplification
d) Process re-engineering for simplifying the model

**a) Literature Reviews:** In first instance**,** extensive scientific literature search and review through library and on line sources is made to enhance knowledge and experiences for in depth understanding of the transparency issues in Land Administration and institutional change as an element of transparency.

Institutional elements such as legislation, organizations, decentralization, and coordination between different organization, standards and regulation will be studied. Related concepts to land administration processes such as transaction cost and information technology will be explained. All elements of institutional reform that need to function well in order to perform

successful LA procedures will be Institutional elements such as legislation, organizations, decentralization, coordination between different organization, standards and regulation will be studied. Related concepts to land administration processes such as transaction cost and information technology will be explained. All elements of institutional reform that need to function well in order to perform successful LA procedures will be investigated. Literature review will include land registration (principles and process) together with Unified Modelling Language (UML) as a language of characterizing processes by presenting dependencies between different structures. Explanation of different types of UML models which can present complexity of cadastral system in technical, economical and institutional aspects will be studied.

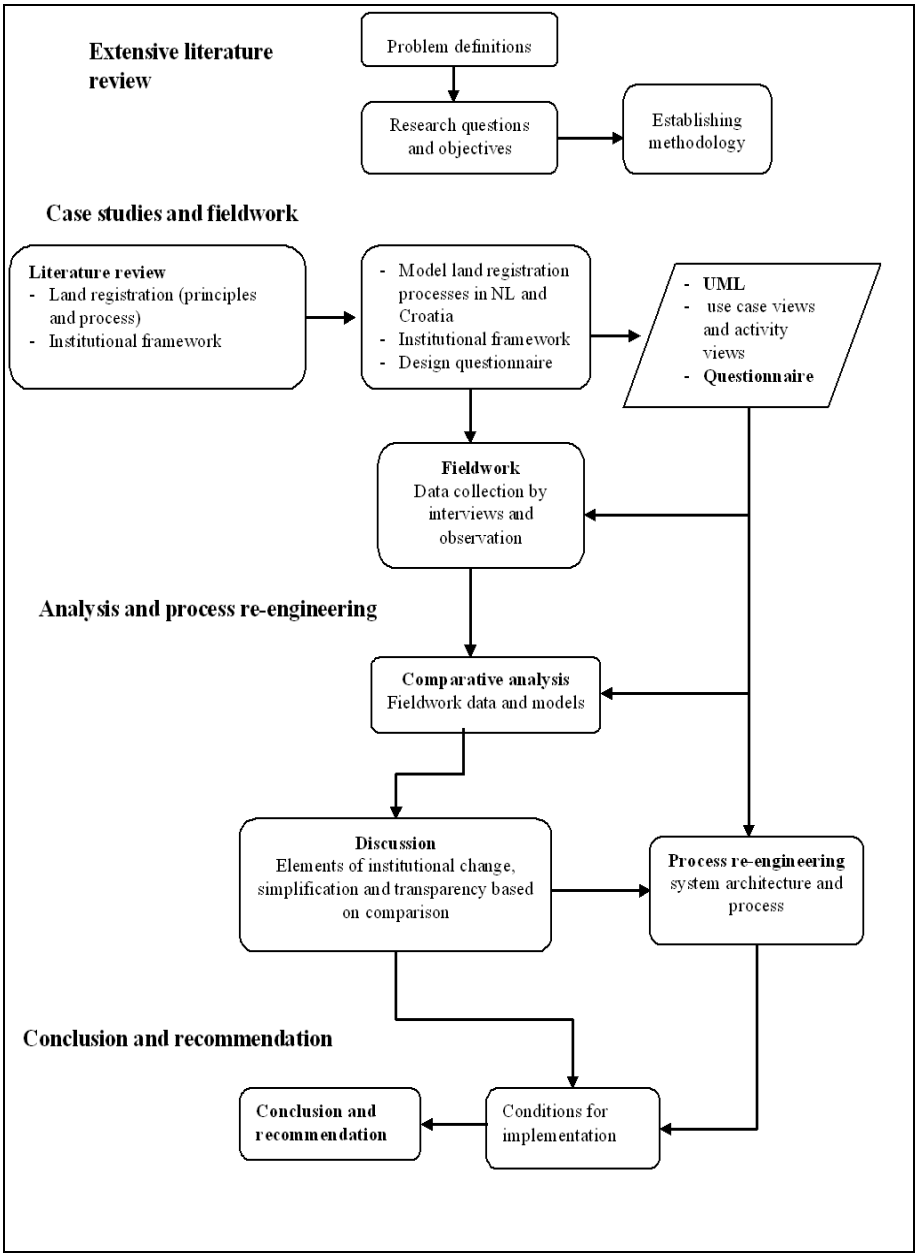


**Figure 1.3: Research approach**

b) **Case studies and fieldwork:** Two countries that have land registration system using IT are chosen as case studies for this research. The Netherlands is selected because of proper structure of LA and well established and developed land registration system proper structure of LA system. Croatia is chosen as a country under LA reform with different institutional framework, laws and regulations comparing to Netherland to emphasize dissimilarity, land registration procedures as a part of their LA system will be modelled for each country. According to the designed models, questionnaire structure for the fieldwork will be prepared. Designed questionnaire is assigned to the officials of the municipality who are dealing with land registration issues (buying or transferring land). Second group of interviewed people includes administrators and notaries who are working with registration process. Therefore, criterion sampling method will be performed by sample selection within determined criterion of importance which is job description for this case. Interviews will be conducted in face to face open method

c) **Data analyses:** Models will be compared with the result of the questionnaire to test involvement and participation of the users. Their knowledge and expectation about registration process will be used to evaluate transparency as to link it to simplification which is tool of institutional change. Comparison of land registration processes will be done taking into account variations of laws and regulations that influence procedures and accessibility of information.

d) **Process re-engineering and transparency:** Considering already designed process models, data collected from the fieldwork (from interviews and observation) and results of discussion, process re- engineering model will be carried out to bring out a simplified model of processes with emphasis in the flow of data between organizations and citizens. This task will be carried out using UML also. Main goal of redesigned process is to achieve simplification and transparency of registration procedure.

## 1.6. Research matrix

Research matrix (table 1.1) is presenting the sources and methods for answering research questions.

**Table 1.1: Research matrix**

| Research question | Interview | Observation | Documents |
|---|---|---|---|
| What are the most important elements of institutional reform in Land Administration Systems? | √ | | Land laws<br>Library sources<br>On line sources |

| | | | |
|---|---|---|---|
| Which institutional elements are the most affected by simplified process of the land registration? | √ | | Data collected for research question 1 |
| How complexity of procedures affects land administration system? | √ | √ | Land laws<br>Library sources<br>On line sources |
| How does simplification contribute on building trust and transparency? | √ | √ | Data collected for research question 1,2 and 3 |
| How can registration process be simplified to achieve transparency? | | | Library sources<br>On line sources<br>Data collected from research question3 |

## 1.7. Thesis structure

Chapter 1 – Introduction
This chapter provides information about research problem, followed by research objectives and questions.

Chapter 2 – Literature review of registration process in Croatia and Netherlands
In this chapter, literature about land administration processes under different institutional frameworks will be presented. Existing registration system in The Netherlands and Croatia are thoroughly reviewed presenting historical background and procedures emphasizing institutional aspects and framework for each country.

Chapter 3 – Research methodology
Illustrations of data collection process, interview design and conduct of fieldwork will be provided. Statistically processed field work data will be presented.

Chapter 4 – Discussion on results

This chapter will be based on comparison between two different registration processes, mostly in the terms of institutional elements and access to information. Models will be analyzed also by comparing with fieldwork data, discussion on findings and comparison with previous researches.

Chapter 5 - Process re-engineering

Process re-engineering of ownership transfer in Croatia will be done based on the results of collected data and discussion. Redesigned process will be established mostly on positive experience from Dutch registration system with main goal to achieve simplification.

Chapter 6 – Conclusion and recommendation

This chapter will present conclusion and some recommendation developed from the research.

# 2. Land registration process in Netherland and Croatia

## 2.1. Introduction

The main purpose of this chapter is to give an overview of registration process in Netherland and Croatia. Main emphasize is put on organizational aspect and role of institutions which influence workflow management and access to information. Subchapters are organized to present an outline of historical background, organizational, technical and legal aspect of two countries finalized with layout of current process.

## 2.2. The Netherlands

Netherland is situated with the area of 41,526 km2 and population of 16.4 million. It is parliamentary democracy under constitutional monarch. Free elections are performed every 4 years. Dutch Government is formed by Queen and Councils of Ministers and its verified by parliament at any time and matter. Parliament is composed of the second chamber with most political power and first chamber with main task to give opinion on bills before becoming laws. Ministers, provinces and municipalities have their mandates regarding the national, regional or local matters. Also, provinces and municipalities are regarded as some kind of territorial decentralization.

### 2.2.1. Historical background

As Netherland became part of the France in the beginning of 19$^{th}$ century, fiscal cadastre was introduced. After gaining independence system of land and building taxation was maintained. To facilitate the process in 1825 it was decided to join land registers and cadastre within the national tax department, Ministry of Finance. Here are the roots of Netherland Cadastre in which cadastres and land registers are joined together into one organization. When new Civil Code was adopted few years later cadastre also gained a role of juridical or legal cadastre which persists today and serve to a multipurpose aim (Molen, 2003) and as a key to public registers. Kadaster was recognized as an independent public body constituted by special law ”Cadastre organization act” and today is fulfilling that mission within the principle of 100% cost recovery.

### 2.2.2. Organizational aspect

Land administration and cadastral mapping are tasks at national level and they are under the Ministry of Housing, Physical Planning and Environment (VROM). In order to achieve functionality of organizations it is important to precisely define

their mandates, tasks and responsibilities (Molen, 2003) The minister has certain political responsibility for the stability of organization like establishing the fees for the products and services, approving the annual and long term policy plans and allowing annual accounts. He is also in charge of appointing and dismissing the members of Executive Board which is responsible for governing the organization. It consists of 3 members who inform minister on limited number of concerns giving him capability of meeting demands on political level. Board of directors controls the decisions of Executive Board. Another important organization is User Council which advises the Executive Board on all aspects of the service of Kadaster (Kadaster, Annual Report, 2008). The Council includes representatives of notaries, municipalities, water management boards, real estate agents, banks and consumer organization. The Legal Certainty and the Geo Directorates are dealing with production. First one has responsibility to ensure the smoothness of legal registration process while the second one is in charge for measuring and updating cadastral map. Services which stand up for internal, customer and IT service together with Strategy and Policy Directorate and Financing, Planning and Control Directorate also support Executive Board. Kadaster organization is presented in the figure 2.1.

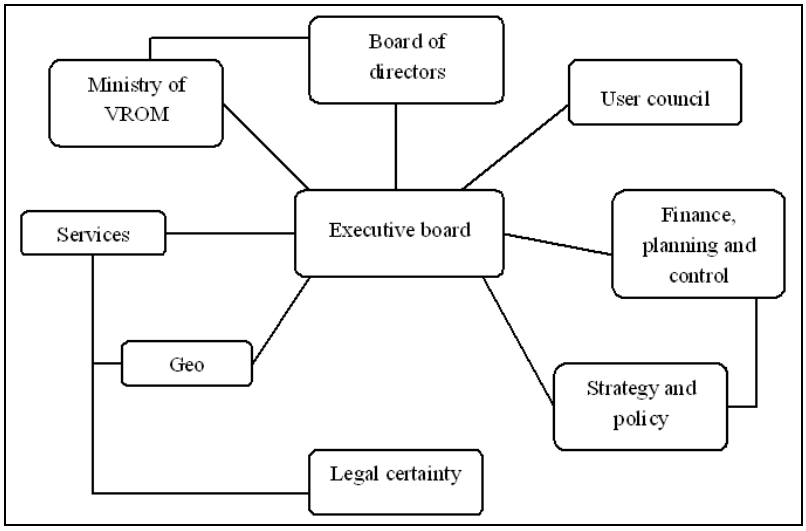


**Figure 2.1: Kadaster organization**

In this moment the Agency consists of head office and 6 regional offices where the registers are kept, the parcel boundaries are surveyed, maps are maintained and information are provided to the users. The Kadaster processes one million conveyance and mortgage deeds and twenty million requests for information (www.kadaster.nl) Notaries account for 95-98%of deeds (Zevenbergen, 2005). Since notaries fees are not precisely determinated they use price as a competitive tool. All

financial streams around transfer go via them which lead to customers dissatisfaction because they often find charging rates too high. Notaries have full monopoly when its up to the deeds registration and all process is dependent upon them. As long as they cooperate well with the Kadaster the system runs smoothly. Another important customer for Kadaster are municipalities. In Netherland there are more than 400 municipalities which provide information about natural persons addresses. Kadaster is using information about person's address while municipalities are taking information for their tax collection. The cadastral desk in municipalities increases potential of overlapping available data (Laarakker, 2002). The advantage for civilians is that they can collect cadastral data from municipalities for the process which is within municipality responsibility.

Kadaster strategy is based on numerous objectives which Kadaster is trying to achieve. The primary objective is to provide greater attention to their clients wishes and to facilitate processes for organization as for clients (Cimander, 2006).

### 2.2.3. Legal aspect

Cadastre and land register in Netherland today ensure security of legal land tenure as security in the land market (Molen, 2003). By Cadastre Organization Act Kadaster is established as independent public agency. Its tasks are formulated by public law and Kadaster is accomplishing them independently with limited political responsibility (Kadaster Annual Report, 2008). The legal framework includes the Netherland Civil Code, the Cadastre Act, the Cadastre Organization Act and other acts and regulations. Civil code is main component of the legal framework and it defines the real rights like property rights and mortgages (Molen, 1996). Civil Code prescribes Public Register. The Cadastre Act formulates regulations for Cadastre and conditions for registration in Public Register. Within this framework Cadastre is obligated to develop as a user orientated organization and to provide its information to interested customers (Climander et al, 2006). All information on ownerships and maps are maintained and updated by Agency only. Agency is responsible for marketing, producing and finance but minister decides about fees for service. The Agency must fully recover its cost, but in the same time by law it is non-profit organization which means that information supply to clients must be at lowest possible cost.

State is regarded as any other owner of the land from the point of view of civil code except the part about paying taxes (cadastral template). Land taxation system is functioning at municipal level. Since by law Kadaster is the only organization in Netherlands responsible for cadastral issues, its main task is to increase accessibility and availability of information. In order to achieve higher efficiency and speed up

the procedure of land registration, the electronic submission of deeds is accepted by national parliament and is legally possible since 2005. The formal beginning of the system was launched by Minister of Housing, Spatial Planning and the Environment emphasizing the importance of service. The agreement was first reach with the group of professional notaries in 1998 that recognized electronic conveyancing of deeds as more secure and efficient system.

The Netherlands operates the deeds system and the proof of ownership is derived from the registered deed which transferred property from one owner to the other.

### 2.2.4. Technical aspect

In Netherland all land is displayed under the system of land registration (Zevenbergen, 1998). The system is divided into three information sets; 'Public register', 'Cadastral register' register and 'Cadastral maps' (figure 2.2). Public Register consists of notarial deeds which are proves for activities like creation and transformation of real rights to land, achieved in chronological order (Ploeger and Stoter, 2004). Kadaster gives access to Public Register. The cadastral register includes two DBMS (Data Base Management System); one for maintaining geometry and topology of the parcels called Information System for Surveying and Mapping (AKR) and another for administrative and legal data called Automatic Cadastral Registration (LKI) (Lemmen et al, 1998). Two separate systems are connected via interface which makes sure that information is appropriately updated (Osch and Lemmen, 2004). The process of registering land rights is automatically updated together with other surveying and mapping activities if necessary. The main function of public register which is hold by Agency is to guarantee legal land tenure security as the security in the land market.

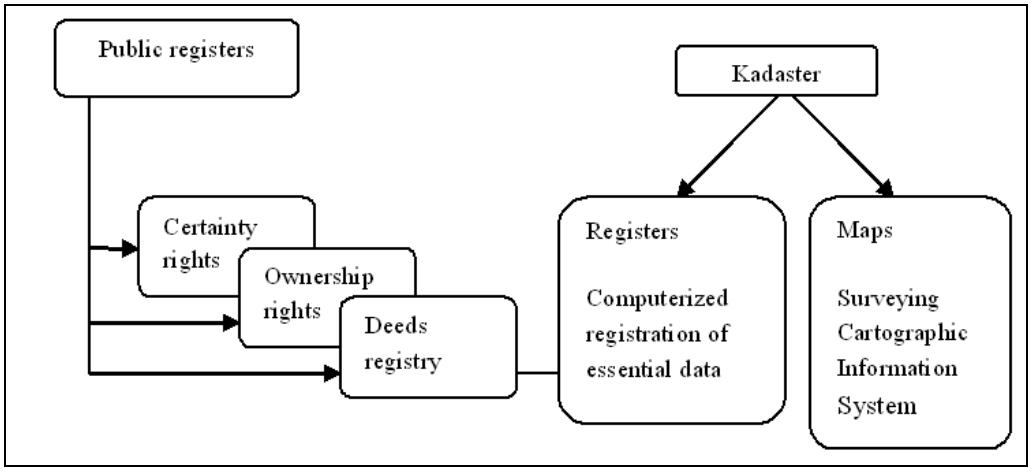


**Figure 2.2: The system of land registration**

Institutional changes of the cadastre are not only led by efficiency issues but also by development of technology (Salzmann, 2002). Kadaster is supporting technology that can reduce complexity when accessing information. IT component is crucial aspect in cost control and complexity reduction. If management is centralized on the server the process of updating data is easier to maintain. All employees have remote access based on their role. Land surveyors can easily access GIS application from field and working from home is available as working from office even though desktops are not controlled by Kadaster. Figure 2.3 is showing system architecture that Kadaster is trying to achieve considering the fact that system contains information about approximately 7 million parcels, 3.5 millions right holders and with large amount of products delivered electronically to the customers (Osch and Lemmen, 2004).

### 2.2.5. Access to information

As a customer-orientated organization Kadaster is driven by the initiative to ensure accessibility and availability of information. Clients can on-line access to various databases with administrative and cartographic data leading to quicker and cheaper procedure which is important in achieving efficient and effective system (Cimander, 2006). Databases are spread over regional cadastral offices and interoperability is accomplished by linking them into on line system. Users access to both systems administrative and maps via client server application which increase the ease of use. With their own username and password clients access to Kadaster on line where authorization controls are performed. Products are divided within the AKR and LKI databases and requested database supply information depending upon the searching criteria (by parcel, person or map). The products are then sent to customers via

HTML or attached by e-mail in a format supported by LKI/AKR databases. Kadaster on line is a tool developed by Kadaster with main purpose to fulfil users needs but also to support vision of Dutch government about providing all products of public organizations via internet (Cimander, 2006). Also by making this information available, Kadaster grants clarity about all registered properties and ownerships issues. By sending request via internet, users all over the world with knowledge on Dutch language can access to information about properties in Netherlands, owners, latest selling price and other details about the property. Overview of purchase price includes values of all households sold over the area of specific postal code. Professional clients after subscribing can also determine how many employees are using specific information and products. Every employee of Kadaster has his own user code, so clients are available to see which products were requested by employees. Kadaster on line products is accessible to everyone without subscription and the only difference from the Kadaster on line is in the payment- therefore users are directed to the payment plaza and after paying on line automatically return to the Kadaster website. Using services of Kadaster on line is much cheaper than requesting this information via post, fax or desk.

### 2.2.6. Layout of current process

When parties (buyer and seller) agree about the sale, according to Dutch law it is compulsory to hire a notary who will make notarial deed of transfer. Public notary investigates the qualifications of the seller to sell the property. Inspection of seller's rights is made by creating an inquiry to the register where sequence of all deeds should demonstrate the ownership of property. When rights or restrictions of seller are verified and both parties agree on price, parties and notary sign the deed. Copy signed by public notary is then sent to the Agency for recording. Before providing the relevant evidence of the registration to the notary, Agency is obliged to check some formal requirements. After notary receives prove of recording, money is paid to the seller.

If there is a need for subdivision of the parcel the procedure is little different. Before survey of parcel registration is preliminary done in AKR by giving temporary parcel identifier. Surveyors locate the new boundary according to owner suggestion. Results of measurements are converted into standard data format and selected for the updating process of spatial cadastral database. After calculation of new parcel area administrative attributes are added to the formed cadastral parcel (Osch and Lemmen, 2004). In Netherland all cadastral surveying is done by surveyors linked to Agency, there is no involvement of private sector. Workflow management of

cadastral updating process is presented below (figure 2.3) together with the table showing procedure of registration (table 2.1).

**Table 2.1: Number of steps when registering property in Netherlands**

| Number of steps | Procedure | Time | Cost |
|---|---|---|---|
| Seller: 1<br>Notary: 3 | Hiring a notary to carry out the registration procedure,<br>verify the authority of the seller and make the deed of the transfer<br>complete the final check | 4 days | 2737 EUR |
| Seller: 1<br>Notary: 3 | Registration of the deed by notary, transfer tax is paid to notary who will pay it to the Tax Authorities after registration. When registration is performed, notary makes the post registration check | 1 day | Transfer tax: 6 % of property value<br>Land registration: 70 EUR<br>Post registration check: 2.8 EUR |

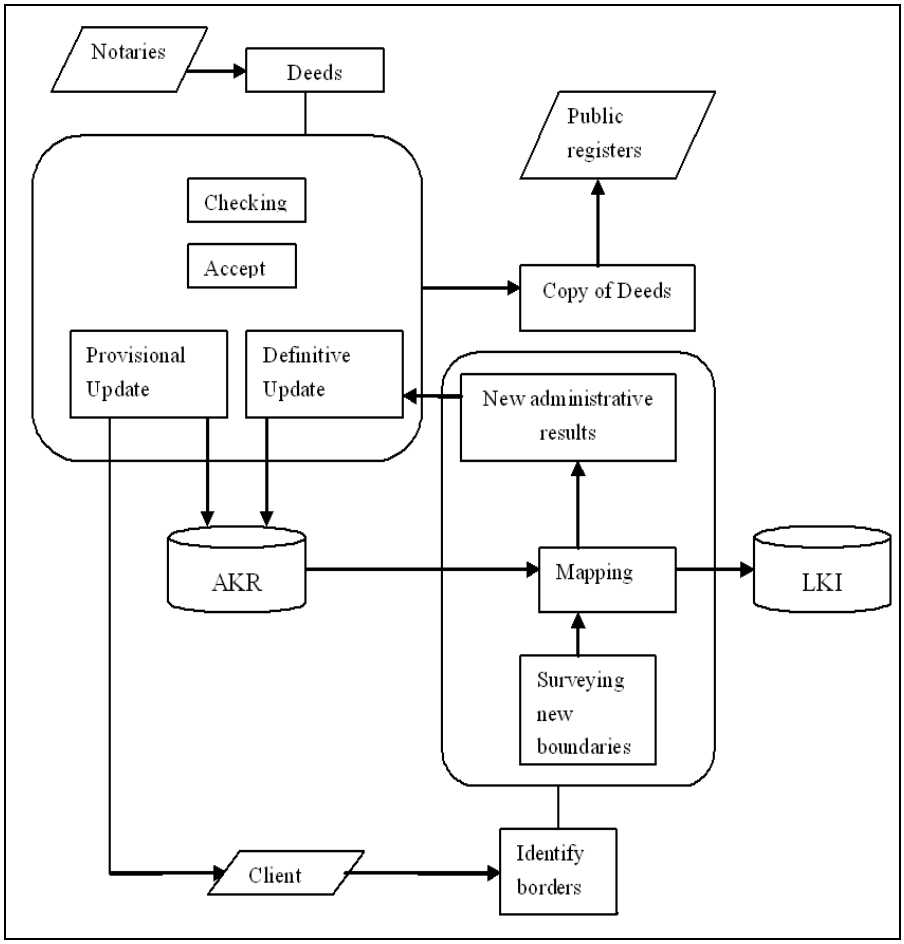


**Figure 2.3: Workflow management; transfer of ownership including subdivision**

Activity diagram (figure 2.4) is showing business process of ownership transfer in Netherlands. Diagram is modelled on the information collected through literature review and will be used to help process reengineering for the Croatia case.

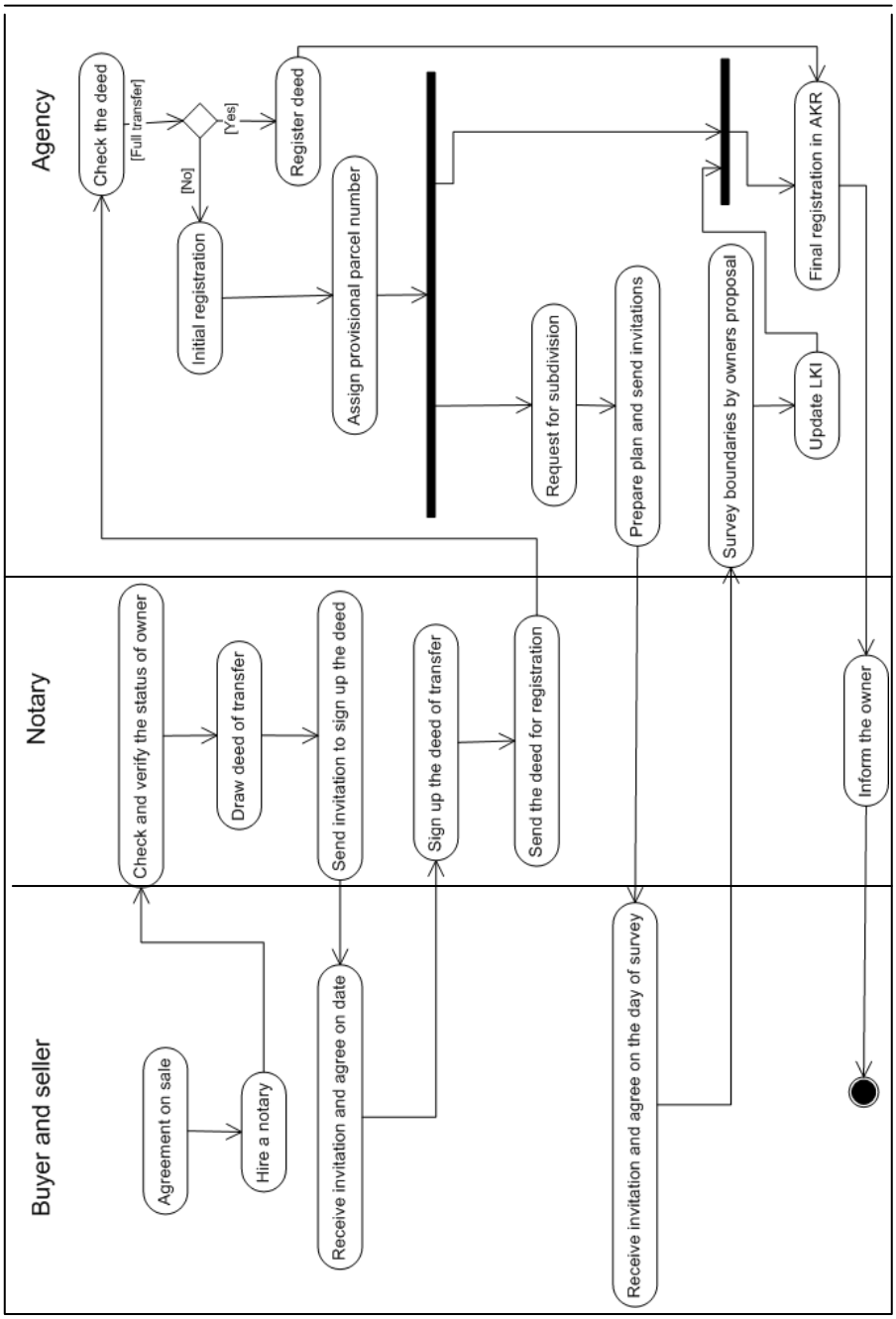


**Figure 2.4: Ownership transfer in Netherland**

## 2.3. Croatia

The Republic of Croatia is situated in the south-east part of the Europe along the Adriatic Sea stretching from the hilly Alps to the Pannonian plain. The country has an area of 56.542 km2 of land and 31 067 km2 of surface sea area and interior sea waters. As per last estimates, Croatia has population of 4.5 million. It is parliamentary, multiparty Republic. Constitution of Republic of Croatia from1990 defines Croatia as democratic and social state of free and equal citizens. The state authority is divided into legislative authority – parliament, executive power – President and Government and judicial authority – courts following constitution and laws.

### 2.3.1. Historical background

Rich historical background which imposed Croatia to many changes of political system during the recent past also influenced the role of land administration as processes and function of land registration. In the middle of 19$^{th}$ century Croatia as a part of Austrian Hungarian Monarchy was introduced to the Austrian Civil Code, which was signed up to the modern Germanic family laws and influenced view toward land administration . After introducing the socialism in 1943 and becoming part of Yugoslavian states, new civil codification was never established. But approach toward public and private ownership during the period of communism was completely different since all land that had greater economic value couldn't belong to the private persons (Majcica, 2004). Because of that, land registers were not updated in particular if related to the public ownership. It was only after Croatia gain independence in 1991, the land registers started to revise and keep informed.

Croatia has parcel based registration system which belongs to Austrian-Hungarian way of property register and date since the 1880s. First cadastral surveying was performed in the beginning of 20$^{th}$ century and it wasn't updated since 1950. Parcel based title registers were established as a part of local municipal courts during the Austrian-Hungarian Monarchy and the system exists up till today. Within political system of Yugoslavia, cadastral role was only due to purpose of taxation while the function of cadastre as a record of real property rights was totally overlooked (Bačić, 2004). After proclaiming its independence in 1991 Croatia went through complete change of economic and politic system. One of the major changes that took part was privatization of common property, the process that gave new crucial role to the Cadastre. Main adjustment, supported by

legalization was in conversation from old Land Cadastre into Real Estate Cadastre.

### 2.3.2. Country in transition

Major challenge for every country in transition is how to reorganize and establish legal framework, financial matters, institutional arrangement ant technical aspects (Dale, 1997). In 1993, UN-ECE (United Nations Economic Commission for Europe) started to prepare guidelines for purpose of managing process of land registration for countries moving toward market-orientated economy. Even though specific design was not created, since situation varies from country to country, main recommendation included implementation of clear legislative framework and required connection of maps with text data relating to ownership and land use. In Croatia, like in many other transiting countries land administration changes have been driven with financial support of World Bank. The project involves: Real Property Registration System Development, Cadastre System Development, Inter-institutional Operations and Information Technology and Project Management, Training and Monitoring (World Bank, 2002). Project is addressed to improvement of property registration system and security of real property rights, developing of technical standards, decreasing the registration backlogs, training staff and the private sector. Harmonization of data between two systems with reality, improvements of customer and service relations, higher awareness of stakeholders are main goals to achieve. The full project is planned to carry out in the period of 15 years, started in 2002. The report from 2008 stated that transaction cost related to registration process has already been decreased by reducing backlogs by more than 60% (40 of 90 Lad Register offices solved the backlogs). Therefore, conclusion is that Croatia has been going through dramatic changes that brought significant progress in the last decade.

### 2.3.3. Organizational aspect

Land registers and cadastres are separated in Croatia and organized under different institutional framework. State Geodetic Administration (SGA) is in charge for cadastral activities and it consists of Head Office, 20 cadastral regional offices, 92 sub offices and the City cadastre office of Zagreb. SGA is (figure 2.5) almost completely independent upon the Ministry of spatial planning, construction and environment. Main task of SGA is to update and maintain technical documentation and statistical data about Real Property Cadastre, geodetic work attached to state border and state official cartography. Cadastral data have crucial meaning in maintaining the Land Register (LR). LRs are public

records on legal status of real property that are able to be an object of real property rights (The law on Real Registers, ch. 1). Main functions of Land Registers are publicity and security, meaning that rights are entered and protection of those is guaranteed to their holders. Registration is performed by 104 Land Registry Offices which belong to municipal courts which are under authority of Ministry of justice. Basic spatial unit for creation of Land Register is cadastral municipality.

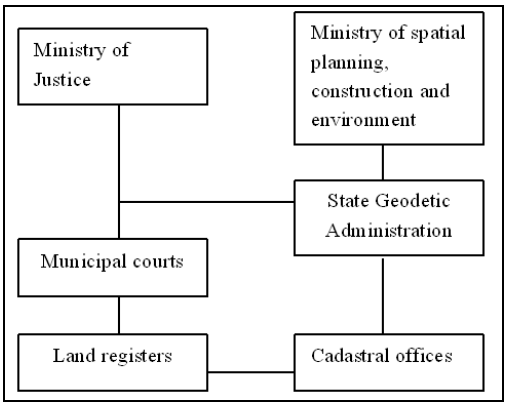


**Figure 2.5: Organizational aspect of cadastre and land register**

Beside the SGA, its regional offices, Ministry of Justice and Land Registers Departments there are many other stakeholders that are important in the process of land transfer. In Croatia, crucial role also play lawyers, surveyors and notaries. Lawyers are in charge of preparing documentation by using services of Land Registers that is later certificated by notaries. Their accountability is not connected to the registration of documents, but in the case of clients get damaged, users are allowed to ask for compensation (Majčica, 2004). Public notaries are responsible only for signature certification in the sale contract, but not for the content of the contract. Hiring notaries in the process of land transfer is compulsory by law. Another important stakeholders are surveyors. Land surveying procedure is operated by special physical and legal persons with licenses issued by SGA (Bačić, 2004). Land surveyors are organized into private sector and have purely technical role by legislation. They do not take any part in process of decision making regarding rights over property. Their function is simply about measuring the current situation on the field and reporting it to the Real Property Cadastre or in some cases locating the boundaries of the property based on the court decision or existing situation in Cadastre (Repanić, 2005). Involvement of many stakeholders (figure 2.6) make process more complicated an

expensive for customers which prefer simple, not time consuming procedures and organizations which would be more efficient and client orientated.

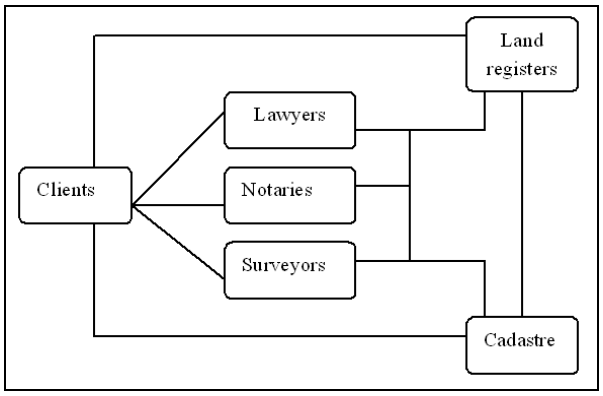


**Figure 2.6: Different stakeholders in registration process**

### 2.3.4. Legal aspect

SGA in today structure was established in1994 and it operates as state administration whose tasks are regulated by "Law on structure and scope of Ministries and State Administrative Organizations". It is under the jurisdiction of Ministry of spatial planning, construction and environment. System of registering property is based on two basic laws; The Law on Land Registers and The Law on State Survey and Real Estate Cadastre. The second one identifies Real Property Cadastre as 'record of land units, buildings and parts of the buildings, as well as other constructions that permanently lies on or below land surface.' The Law on LR acknowledges the data from Cadastre as the basis for LR entries. Cadastral data are changed and maintained according to the cadastral projects produced by private surveying companies. Private licensed surveyors are organized in Croatian Chamber of Private Licensed Surveyors which is responsible for Services Pricelist approved by SGA. Prices are usually established by agreement between surveyor and user of service but in accordance with service pricelist (Bačić, 2004). According the law all data from LR and Cadastre must be consolidating in the Base of Land Records, and that is currently ongoing process (The Law on State Survey and Real Property Cadastre, Ch. 9, s. 85). Adaption to Real Property Cadastre should be reached gradually until March 2010.

### 2.3.5. Technical aspect

Real Property Cadastre is keeping information about location, shape, area, buildings and type of use for each cadastral parcel. While the past Land Cadastre

kept information on land possessors, the new one is keeping information on owners and holders of property rights. Still, it's a record on objects of rights, i.e. the real property units that are determinated by extend of those rights (Repanić, 2005). Land Register is keeping information about owners and holders of real property rights and linking them to the cadastral parcels. The biggest problem is the fact that cadastral information are not in line with the information from Land Registers. Also information from cadastral and land registers are out of date and they differentiate from real situation in the field. Systematic updating is in progress; although the movement ahead is relatively slow (Roić and all, 2008). Main goal is to consolidate the data from both records and to create the Base of Land Records (BLR) which will be update by cadastre and LR depending on their accountability prescribed by law.

#### 2.3.5.1. Structure and content of LR

In the narrow sense, each land register consists of Main Book and Collection of Documents. Additional documents which present LR in wider sense include Collection of cadastral maps and Accessory listings (Figure 2.7). Therefore LR can be split into four main parts (The Law of Land Registers):

- Main book
- Collection of documents
- Collection of cadastral maps
- Accessory listings

Main book is made of: property sheet (sheet A), ownership sheet (sheet B) and encumbrance sheet (sheet C). Sheet A includes cadastral inventory data, sheet B data about owners, co-owners and collective owners while sheet C is about restriction on those rights. Collection of Documents is always in the paper form and it consists of all documents that are foundation for Main book content. Collection of Decision is under the same provision as Collection of Documents and is also in the paper form similar in the case of electronic data processing (EDP). It consists of all decisions made by District Court on applications for entry to LR. Rules of indemnity are not applied for this collection with main purpose to increase protection of EDP LR and to clarify entrance. Cadastral maps, together with property sheet are under cadastral authority jurisdiction. They are used to ease recognitions of parcels shape and location. Accessory listings which include listing of real property units and their addresses facilitate the search of data enter into Main book .

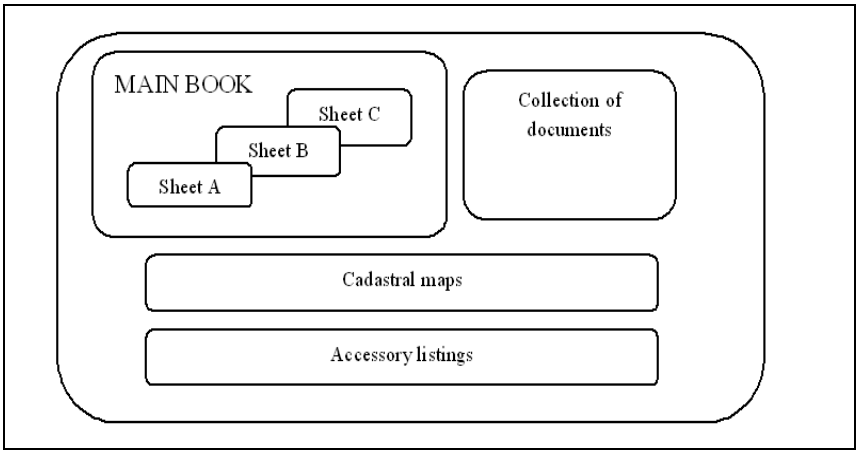


**Figure 2.7: Structure of Land Register**

### 2.3.6. Harmonization

Even though most of the land is now in private use, the ownership of land in some area is quite unclear due to many historical and political obstacles which brought in practice to transfer land without registering the transaction (Blažević,2004). Also process of privatization increased the number of transactions, emphasizing the need for regulation of land register processes and data. According to the World Bank document, in 2002 data defining property in LRs differ 50 % from those maintained in cadastral records. Without harmonization it is impossible to build efficient and strong system which will enforce the real property market. Depend upon the situation on the field, process of harmonization includes three main steps: new survey, re-survey and renewal of data of LR and cadastre (Blažević,2004).

After fieldwork is done all data are prepared for public display which is conducted by two comities, one from cadastre and another from LR. LR comity is making proposal about ownership of the parcels which have already been displayed by cadastre. Citizens are informed about date and place where public display is carried on, and to make changes in registers they must agree about the border, shape and area of each parcel they have rights over. Only then, new LR entity can be created with information about former state and owners of the parcels and documentation used for forming a new status. After public display is done, correct content is entered into registers together with trace how it was made. At the end of harmonization, LR and Cadastre should maintain accomplished situation for the future use. BLR should avoid duplication of data by organized

workflow: cadastre or LR enters the changes under its own jurisdiction and all changes are straight away connected to the matching data under the jurisdiction of other authority.

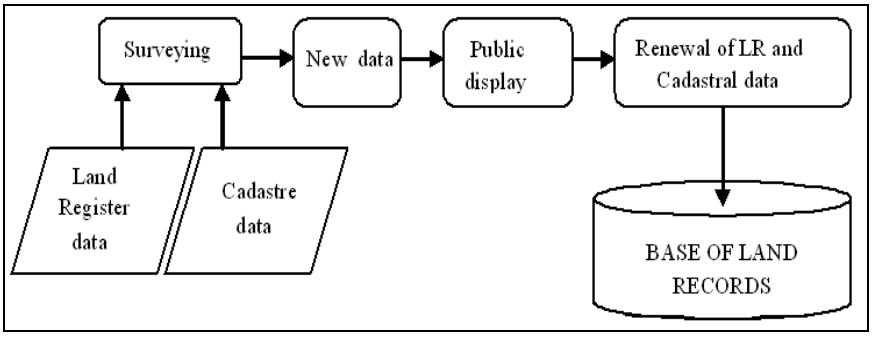


**Figure 2.8: Steps of harmonization**

In the last decade process of harmonization of 220 cadastral municipalities (6 % of total number) was launched and the process is still on. New cadastral and land registers are established for 68 cadastral municipalities, which present 2 % of overall number of cadastral municipalities in Croatia (Magdić, 2009). Acceleration of harmonization of two registers with actual situation on the field is one of the basic requirements for effective and efficient functioning of both systems.

### 2.3.7. Data exchange

Dual system is complex for clients to understand which one is more important and why they are supposed to register in both inventories. Even more complexity is present in a way of data exchange between cadastre and land registry. Land Registration Act prescribes cadastral duties in terms of informing land registry on changes related to geometry and land rights on parcels. Land registers accountability includes providing cadastre with information related to rights on parcels. Existing problem includes difference between data and large amount of legal documentation required to bypass these dissimilarities. For instance parcelling can not be entered into LR without additional deeds. The submission of these documents often creates confusion. As Majčica (2004) states, there are two ways of delivering certification to the LR.

Cadastral is obligated to deliver technical parcelling to LR and the client cannot add the joint documentation (sale contracts) since cadastral delivery is free of fees whilst client must be charged. Consequently client prepares new application for

LR which gets different docket number. Therefore, same matter is being processed twice.

If client adds deeds to cadastre which then delivers documentation to the LR, cadastre is taking role of advocating the client. LR can disregard all deeds as client avoided to pay fees.
Hopefully BLR will allow workflow between two organizations to be more arranged and in order.

### 2.3.8. Access to information

All written cadastral data are transformed into digital form and can be accessed via Internet. Data about the parcel area, use, shape and possessors can be viewed by entering the number of the parcel or the number of the possession registration sheet for the chosen cadastral municipality. This information is available for everyone. Cadastral maps are not available on Internet and can be seen only by visiting local cadastral office. Citizens are allowed to access all cadastral maps in presence of cadastral staff without paying fees. Option of viewing cadastral data is the best way to prevent possibility of unauthorized change of those data (Pahić and Magdić, 2006). Citizens are able to see information about number of cadastral projects made by private licensed surveyors which are technical foundation for updating of cadastral data. Since citizens are capable to reach cadastral data from their homes, transparency is increased and possibility of corruption and fraud is reduced (Pahić and Magdić, 2006). According to the Law on Land Registers, every person has right to access inside the LR and accessory listing. Via Internet users can check data from LR (Land Registers) by entering the number of cadastral parcel or number of property sheet, which enable citizens to check how harmonized the data are between LR and cadastral records. Once when single database will be managed for whole territory of Croatia, BLR will be opened for everyone who asks insights of documentation including information about private ownership of certain party (The Law on Land Registers). Also, register is managed to be transparent and available to citizens.

### 2.3.9. Layout of current process

In Croatia, person becomes owner of a certain parcel if registration in Land Register occurred. There are several types of real property transfer which are legal but for the purpose of this thesis only real property transfer which includes sale is studied. The clients; which are actual owner and owner to be, first have to agree about the unit of land that is object of transfer. Hiring a lawyer is not compulsory, but clients attempt to do so because of the complexity of the procedure. Some

clients decide to run process by themselves as a result of high cost of lawyers companies. In that case, due to their insufficient knowledge procedures appear to be more time demanding and usually with unwanted outcomes. First step is to obtain a land registry extract from the land registry office which must be stamped by the Land Register Court with the purpose to be verified.

Even though Land Registers are mostly digitized and can be checked over on Internet, by legalization only extracts obtained in paper are considered official. Since data from registers are not in line with cadastral data and still not in line with real situation on the field customers are advised to identify the parcel on the field and to compare data. This is done by private surveyors which are compulsory involved in procedure only in case of parcelling, when buyer agrees to purchase only part of parcel. After parcel is identified and surveyed on the field, parcel's area, use, position and boundaries are adjusted. Private surveyor makes a request to the cadastre to modify previous incorrect information about the parcel.

**Table 2.2: Number of steps when registering property in Croatia**

| Number of steps | Procedure | Time | Cost |
|---|---|---|---|
| 1 | Obtain land registry extract from the competent land register court | 1 day | 20 HRK |
| 1 | Compare data (inspect real property physically and check documentation from land register) | 1 day | No cost |
| 1 | If situation on field is not in line with documentation from LR, hire a surveyor to measure the parcel and make a request for data correction | 30 – 90 days | 4000 – 5000 HRK |
| 1 | Obtain new land registry extract | 1 day | 20 HRK |
| 1 | Hire notary to notarize the contract | 1 day | 94 HRK for 2 signatures |
| 1 | Submit the contract to the municipal tax administration | 30 days | No cost |
| 1 | Pay registration fees | 1 day | 200 HRK (registration |

| | | | |
|---|---|---|---|
| | | | fee) + 50 HRK (stamp duty) + 5 % of property value |
| 1 | Register land title at Cadastre | 15 days | No cost |
| 1 | Register land title at Land Register Court | 60 – 80 days | No cost |

When Cadastre accepts and completes the changes through its data base, official application is sent to Land Register to repeat the procedure with its data. When Land Register is updated, the sale contract can be formed. The buyer pays the purchase price when contract is signed by both parties and notary. The cost of land surveying should be paid by seller, while buyer pays the notarization costs. Notary then sends the copy of the contract to the Tax Administration to pay land transfer taxes which are compensate by buyer. Finally the buyer submits the application separately to Cadastre and Land Register. Procedure with time and cost is presented in the table. The land surveyors are not involved in the process if parcelling is not taking part, but since most of data stored in cadastral and land register mismatch, it is highly recommended to hire surveyor before performing and signing up sale contract.

From literature review activity diagram of business process was modelled, including all stakeholders in the procedure, their roles, organizational aspects and required steps (figure 2.9).

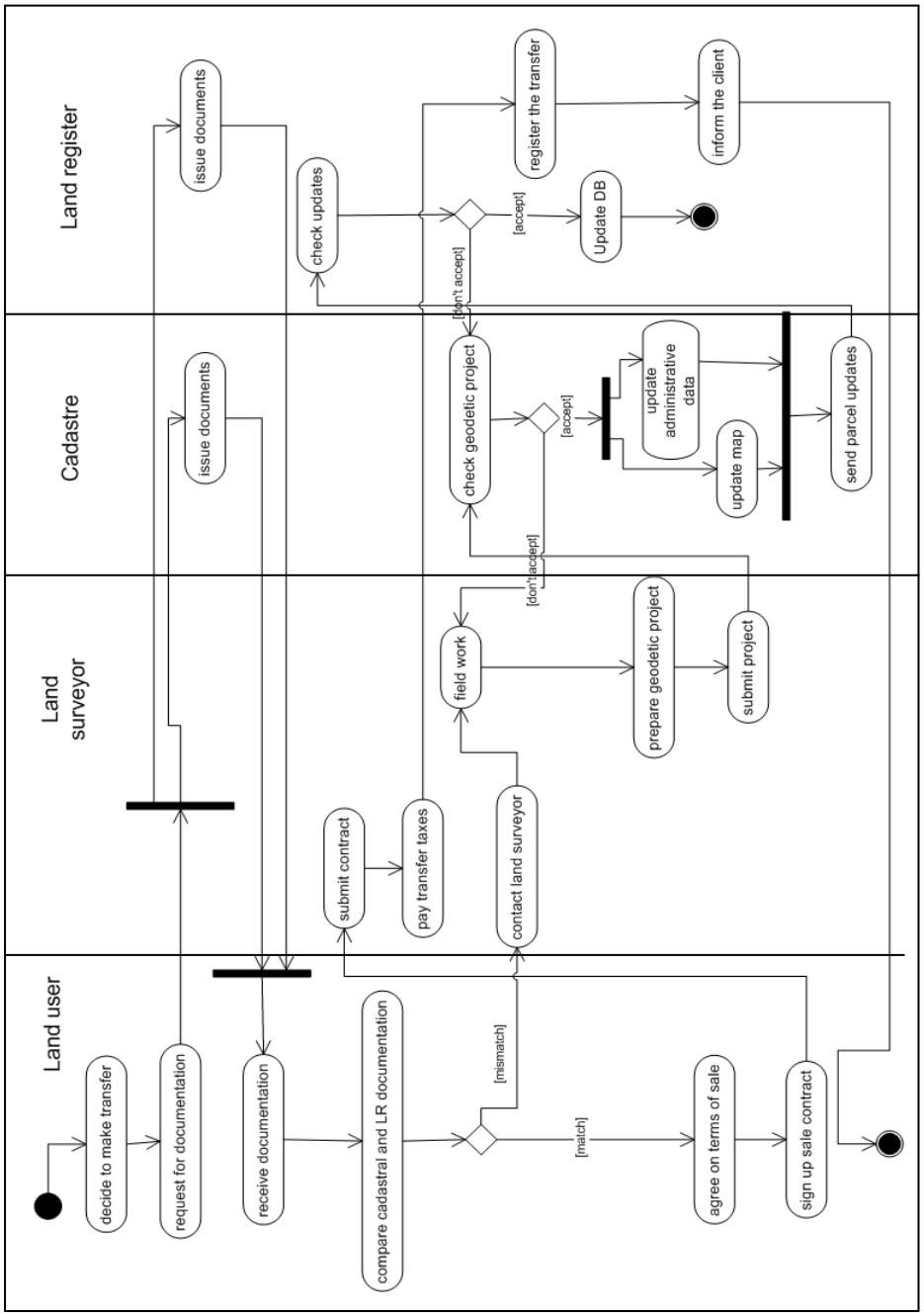


**Figure 2.9: Transfer of ownership in Croatia**

## 2.4. Concluding remarks

Technical, organizational and legal aspects together with some good and week practice from Croatia and Netherland were reviewed in this chapter It is noticeable from the description above that two systems of land registration processes between observed countries are quite different. Roles of specific organization that taking part are shaped by society and historical events. Even though historical background of countries and development of cadastre diverse, there is a still the same need – to create user orientated service. Since Netherland is quite advanced, some of experiences and way of business doing can be used as a helpful model to Croatia in order to create more efficient and effective model. The implementation of ICT supported by legislation and interoperability between organizations achieved in Netherland could lead to faster procedure of harmonization and later on more simplified and rapid process of registration.

# 3. Research methodology

## 3.1. Introduction

This chapter is mainly about research methodology and data collection. First 3 subchapters give explanation on used qualitative approach, case studies and methods of data collection. Then 2 further subchapters are organised in order to give results on data collections in terms of organizational aspects, simplification and transparency for Croatia and Netherlands. Chapter is finalized with conclusion.

## 3.2. Qualitative approach

For this research qualitative approach is used, meaning that data are more in forms of the words than numbers. As Silva and Stubkjaer (2002) mentioned, when dealing with methodologies linked to cadastral development, research approach is largely based on those of social science. Main reason for choosing these methods is established on the fact that cadastre is related not only to land but also to people and institutions. Cadastral development is dependent upon technical aspects but also upon social, political, economical and institutional views.

Description and discovery are more underlined opposite to procedure of testing hypothesis. The methodology is mostly based on people's interpretation of the events they have experienced and their opinion about certain matter. Respondents are allowed to express their point of view and facts. Qualitative research is used to evaluate particular services or programmes by identifying factors which are responsible for successful or unsuccessful outcomes. Important outcomes for this research are efficiency and effectiveness of the land registration procedure which is measured by time, cost and number of steps necessary for achieving the goal. By lowering each of these indicators, simplification is introduced and preformed. By qualitative research, organizational aspects of delivery will be explored. Whole research is based on questionnaire made for different stakeholders and participants of the observed process. Afterwards, data, processes and answers from different stakeholders will be compared and discussed. Within the system of land registration there are different organizations engaged and their presence and influence vary from country to country. It is important to detect the boundary of the system of land registration to facilitate data collection. The professionals that are tightly connected with cadastral issues and process of land registration are land surveyors, lawyers, notaries, land administrators and other experts from field of geoinformation and land management.

### 3.3. Case studies

It was decided for this research to choose multiple case studies of land registration process in two countries: Croatia and Netherland. Even though for multiple case studies one shouldn't put effort into analyzation of representative samples chosen for questionnaire, this research is orientated toward direction of comparing different organization structures. Interrelation and level of cooperation between involved organizations is the main driver to carry out the process into practice. Zevenbergen (1998) pointed out that traditional one- dimensional classification, which includes title/deeds or other categories is not sufficient to get an idea how system of land registration is performed in certain country. To achieve overall idea on process it is important not only to get familiar with laws and regulations (which are sometimes not supported by courts) but to observe processes and conclude how much success of the procedures depends on organizational aspects (Zevenbergen, 1998).

### 3.4. Data collection

Data were collected through interviews and observation, while secondary data about registration process were collected through different available literature from library or on line sources. The questionnaire was used to answer research questions 1-4.

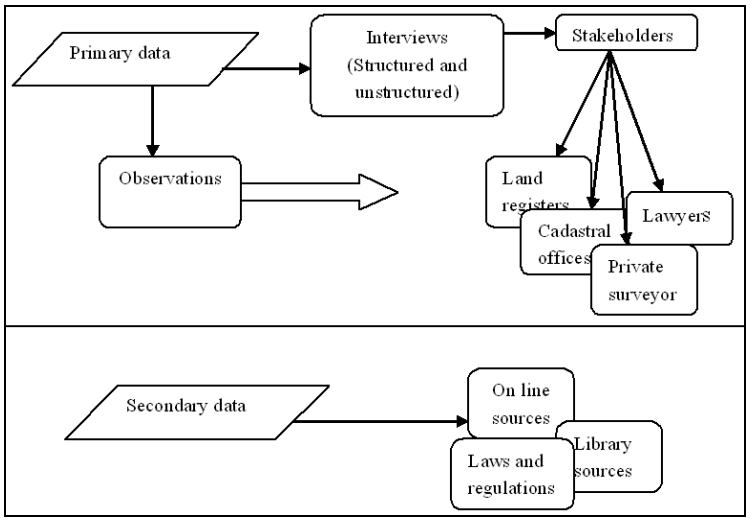


**Figure 3.1: Process of data collection**

Process of data collection is shown on figure 3.1. Interviews were semi – structured, meaning that respondents were encouraged to speak freely about each topic. This types of interviews are time consuming, but addressing a smaller number of respondents.

### 3.5. Case study – Netherlands

Cadastre (branch office Zwolle and head office Apeldoorn) and Enschede municipality were included in questionnaire (table 3.1). For cadastre four individuals were interviewed. The same as for Croatian case, interviewers were chosen according to their job description in order to test level of cooperation between different organizations and simplification as an output. Except job description interviewers are different in their backgrounds which vary from agriculture, land surveying, law and social studies. Therefore, representatives from cadastre covered different areas of cadastral responsibilities and internal structure including board, register and IT component. Interview with municipality representative was mainly based on their cooperation with cadastre and personnel opinion about possible improvements.

**Table 3.1: List of interviewees**

| | |
|---|---|
| Kadaster | - GIS coordinator, branch office Zwolle<br>- Board secretary, Head office, Apeldorn<br>- Tactical information management consultant, Head office, Apeldorn<br>- Registrar, Head office, Apeldorn |
| Municipality | - Coordinator of digital design, Municipality of Enschede |

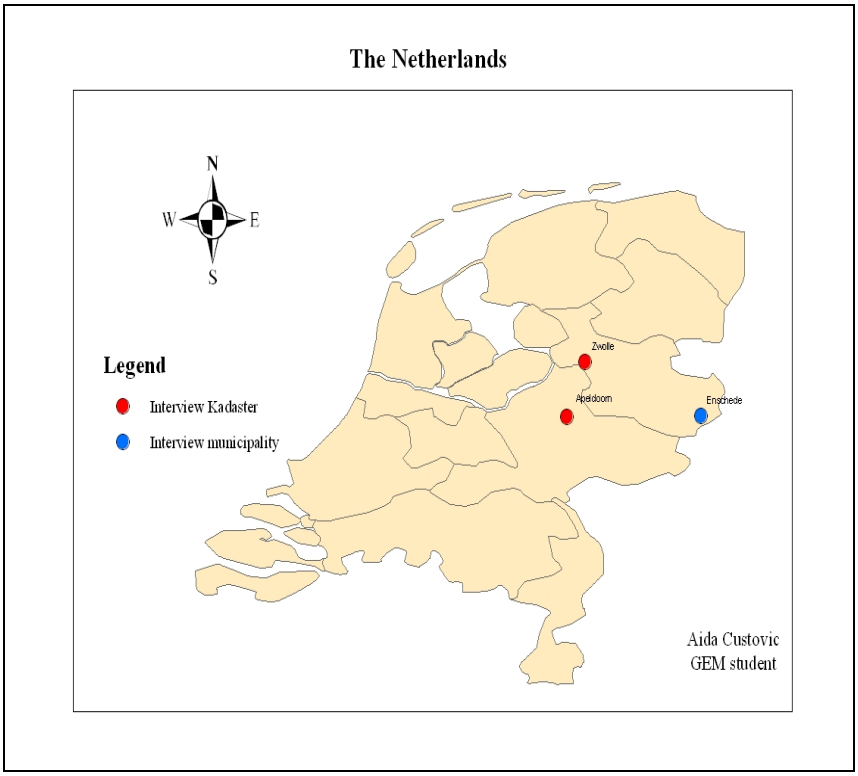


**Figure 3.2: Study area – Netherlands**

### 3.5.1. Results

For this research, case of Netherland is chosen as an example of well functioned system, with an intention to select the most successful tools and try to recommend them as inputs for the improvement of the current Croatian cadastral structure. Since Croatia is in period of change, especially when concerning land registration procedures, better structure and development of the future system can be achieved by applying some of the experiences from the Dutch Cadastre. Collected data are analyzed in a way of studying organizational structure and using interviewees opinion and experience to emphasize the positive arrangements. The questions are formed as a multiple choices giving the interviewees opportunity to express what they see as main quality criteria to achieve simplification.

#### 3.5.1.1. Organizational aspect

Questions regarding organizational aspect are more orientated toward interrelation between stakeholders. All cadastre employees believe that Kadaster relations with

notaries and municipalities are good, but there should be some improvements. Notaries are Kadasters most important customers in two ways: they deliver deeds which are 70% of total Kadaster income, but moreover they are the ones who are requesting and using the most of information. As a result Kadaster is very careful when cooperating with them, trying to meet their expectations. Nonetheless, the notaries could make it simpler if they would agree to adopt the deeds in a way that would make cadastral updating of registers easier. The Royal Netherlands Association of Notaries makes available models for different types of deeds; still notaries apply their own style when creating one. Kadaster made research on how to electronically recognize the fundamental data in deeds, unfortunately without practical solutions. To solve this issue, Kadaster and notaries signed agreement on using model-deeds divided into two parts; first is style-sheet, strict one predicted for electronic stock and second part is expected to be fulfilled with the text related to the specific case. More improvements are slowly introduced to mentioned cooperation and notaries are more willing to accept the changes. Though this change interferes with notaries' freedom to create layout and content of the deed it would contribute to the improvement of the chain of information exchange.

Cooperation with municipalities is rated in the same way as with notaries, interviewees agree that relation is good but still there could be some improvements. More than 400 municipalities are united into Union of municipalities and Kadaster has frequent meetings (board to board) with this union. However, Kadaster does not have information on budgets and priorities of municipalities.

#### 3.5.1.2. Simplification

The participants in interview were asked to rate institutional arrangements which they find the most effective in the process of achieving simplification. Ranking list is between 1 and 4 where 4 is the highest mark and should be linked to the arrangement they think is the most important one. Figure 3.3 is demonstrating their opinion, and as can be seen interviewees highly support combining of Land Register and cadastral mapping. It gives mandatory regime of using the same cadastral identifier and therefore excludes the possibility of maintaining information by duplicating data. All interviewees agree on significant relation between cadastre and land registry where one cannot exist without another highlighting the concept of single unified integrated land registry and cadastral system.

Mandatory role of notaries is not perceived as very meaningful in achieving simplification (ranked by 1.5 on the list from 1 to 4, 1 is the lowest mark) Some of the interviewees agree that when notary delivers deeds to the Register, there is assurance that Register always have fully, complete, actual and updated information. Others think that importance of notaries was more expressive fifty years ago, when majority of population wasn't literate so they actually needed someone to check information and prepare deed for them. Today, when everyone is able to inspect data, presence of notaries in the procedure could be diminished. Some of the interviewees argue that role of notary is still important in terms of giving legal advices to customers and conducting procedures in line with laws and regulations since they are well educated and familiar with the subject.

Involvement of Agency surveyors for cadastral surveying is ranked by 1.5 on the list from 1 to 4. Interviewees do not consider this arrangement crucial for accomplishing simplification. Nevertheless it gives guarantee that they will follow the same working procedures by applying same rules, details and accuracy. Consequently there is no need for applying exceptions when dealing with updating data, all performed measurements are unified in terms of using identical standards. However, there are some predictions that in 5 years period involvement of private sector in surveying will increase. As a main reason respondents state the fact that cadastre is paying surveyors by hour, while working in private sector they would be paid by work they have done. Also cadastral surveyors are getting old and younger generation of surveyors find second solution more plausible.

Centralized offices are result of increased computerization and this arrangement assures that quality control is coming from the head office, even though some local demands are met at the regional/local level. As a consequence of modern technology involvement, Kadaster reduced number of branch offices from 12 to 6, which led to more efficient and simplified work since central management runs everything. Still, work is decentralized as employees are able to work at their homes and land surveyors can send information from field. However, future plans are to decrease number of local offices even more. For agency surveyors greater number of branch offices reduces travel time and parallel fieldwork costs, while in case of hiring private licensed surveyor's amount of offices does not play important role.

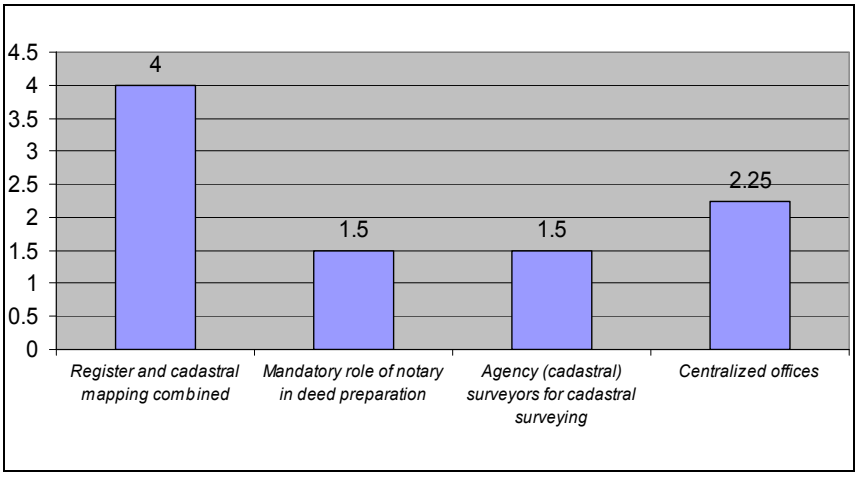


**Figure 3.3: The importance of institutional arrangements**

Interviewees were also asked to rank aspects which they think are the most important in achieving simplification. Proposed aspects were organizational structure, coordination between organizations, IT component and legislation. Figure 3.4 is presenting results based on participant opinion and personal experience.

All of the participants agree that IT component is the less important since it depends upon the law and regulations which make it available to use it in applications. People overestimate IT forgetting that it cannot be implemented without legal framework. Simplification by using IT is limited to law and thus has less effect.

Importance of legislation provokes participants to express different opinions Majority believes that legislation is less important than organizational structure and coordination between organizations. But some consider legislation as one with the most effect since laws prescribe possibilities that are allowed and all other factors are just dependent variables. But there is also a conflict – the more strictly the law is regulated, the more exceptions will be introduced. The same can be applied to the IT technology and organizational structure. No matter how strict law is about certain issues, greater part thinks that organizational structure and interrelation between organizations is key for success.

Organizational structure is very important, even though some of the interviewees pointed out that is highly dependent upon the legislation. However, if the skills

and responsibilities within an organization are at the high level only then is possible to introduce IT and perform planned strategies. Productive interrelation between organizations is achievable if coordination is well established.

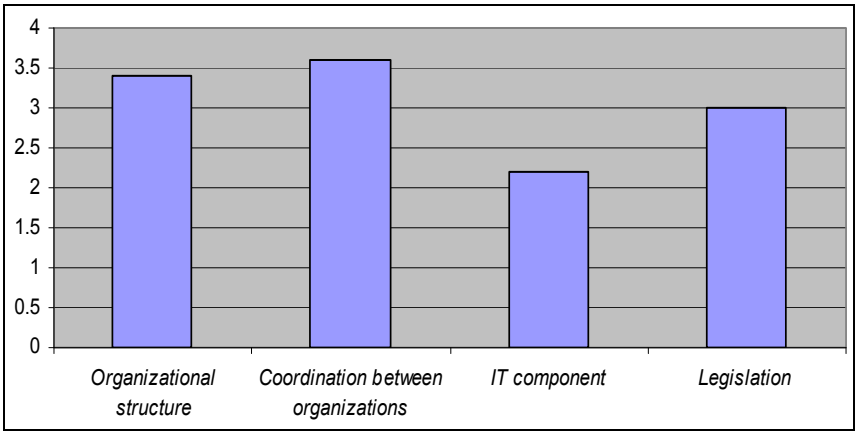


**Figure 3.4:Important aspects for achieving simplification**

When discussing about indicators of the simplification (figure 3.5), interviewees agree that all mentioned processes: reducing time, reducing cost and decreasing number of steps are equally important.

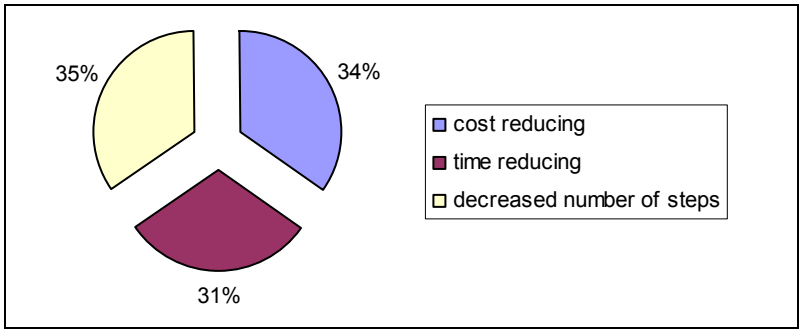


**Figure 3.5: Indicators of simplification**

Interviewees pointed out that customer wants to receive quality information at one place, they do not want to visit many offices in order to collect signatures which would give verification to the official document. Also, by having just one contact when issuing documentation, transparency is presented as clients do not need to meet employees or decision makers. Time, which can also be perceived as cost as well is significant, but participants believe that as long the clients obtain proper,

high quality information without putting too much effort in visiting many offices and without spending too much money on paying different kind of fees time is less important, but still noteworthy.

#### 3.5.1.3. Transparency

All interviewees agree on high transparency for any process of land transactions in Netherland. Process is clear and simplified. All possible improvements are already in the stage of implementation, since Agency is customer orientated and its main goal is customer satisfaction. Figure 3.6 is presenting high and quite stable CPI for Netherlands in the last few years. (Graph was based on the information from www.transparency.org)

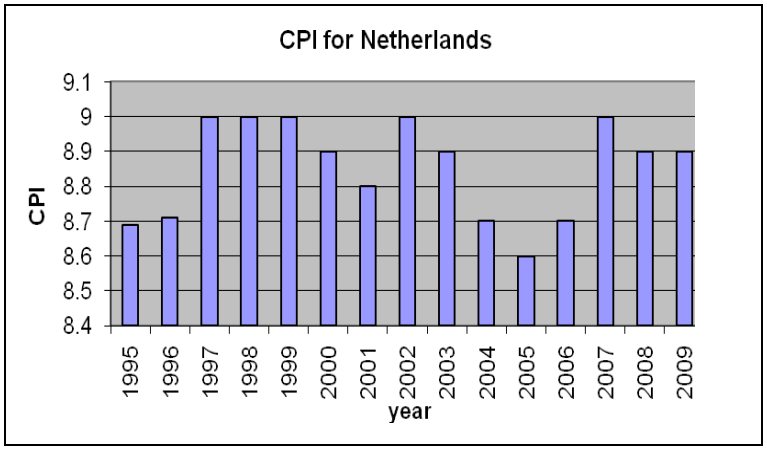


**Figure 3.6: CPI for Netherlands**

## 3.6. Case study-Croatia

All types of people that are involved in registration process are interviewed to get a scheme of ongoing process. List of interviewers is presented in table 3.2. Such sampling is done in order to test level of cooperation between different involved organizations. Interviewees are habitants of two Croatian municipalities: Dubrovnik situated in the southern part of the country and capital Zagreb. These two towns are chosen to present two parts of the country that are quite different in their historical heritage and number of citizens. Dubrovnik is a small town but big touristic centre where land has reached the highest value and capital with all functions of metropolis. A comparison of different professions linked to land

registration process is shown on figure 3.8. Also it is worth mentioning that ratio between private and public sector engaged in questionnaire is 50:50.

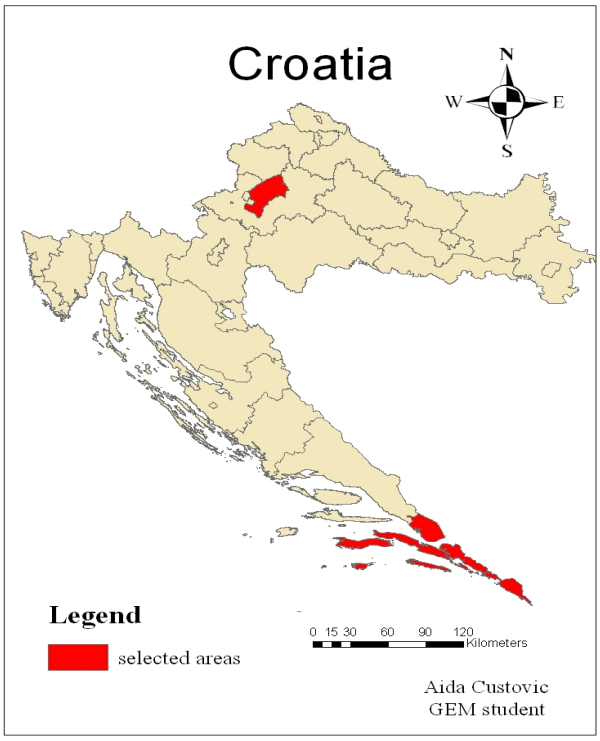


**Figure 3.7: Study area - Croatia**

### 3.6.1. Results

Interviews were open and semi structured. Redundancy of data appeared with people involved in same organizations (cadastral staff from different local offices gave the same answers). Also same questions were differently answered by people working under different institutional frameworks. Employees of land registers do not share same opinion about certain issues with private surveyors. Unfortunately, three planned interviews with employees of State Geodetic Administration were not conducted. Head of Cadastral Department SGA was absent, Head of Cadastral Surveying and Special Registers asked me to forward mail to the above mentioned absent person, and Head of Establishment and Maintain of Cadastral Projects was on sick leave.

**Table 3.2: List of interviewees**

| | |
|---|---|
| Head of Cadastral Department, local cadastre office, Dubrovnik | 1 |
| Head of the Land Register Office, Dubrovnik | 1 |
| Employer of surveying company from Split, local office in Dubrovnik | 1 |
| Manager of surveying company, Dubrovnik | 1 |
| Lawyer junior clerk, Dubrovnik | 1 |
| Lawyer, Zagreb | 1 |
| Head of Cadastral Department, Zagreb | 1 |
| Assistant of Head of Land Register Office, Zagreb | 1 |
| Assistant of Head of technical manager of surveying company, Zagreb | 1 |
| Manager of surveying company, Zagreb | 1 |

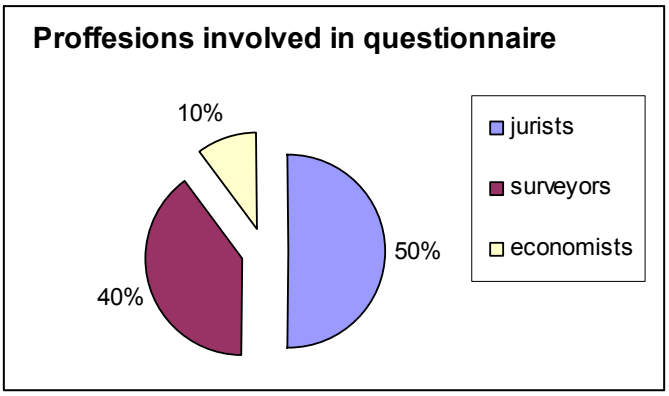


**Figure 3.8: Professions involved in questionnaire**

Questionnaire was designed to cover aspects of institutional change which are important in order to create more effective land registration system. Organizational structure as well as financial mechanism is significant, especially when simplification is main goal. Technical issues which are crucial in speeding up the procedure are also discussed.

#### 3.6.1.1. Organizational aspect

When analyzing organizational aspect, questions were more orientated toward structure inside organizations, number and educational level of employees, need for more professional staff and level of cooperation between organizations. Basically people from public sector need more employees, while people from

private sector have enough staff. Reason is that private sector is much better paid than public one, so it is easier to find workers when offering better job conditions like higher salary. Also for job as a land register administrator there is no relevant education. Employing new people insist time investment to give them corresponding qualifications. For example, to become independent clerk in land register office, first is required to work as junior clerk for 14 month, then to pass state competent exam and afterwards work under supervision of senior clerk. Approximately it takes 3-5 years to become fully independent in the work. Also, most of the people work on contract and in the case of Local Register Office in Dubrovnik; they wait for 7 years until they get job legitimate for undefined time. Because of such a long period, people are very often leaving their unsecured positions after they achieved skills and they search for better and more reliable job conditions.

For the questions of meeting clients need, most of the interviews gave their opinion regarded the structure and workflow of the whole system, and the informal institutional constraints. Formal institutional framework is just small part of overall image, and to understand whole process those informal rules play big role. Lot of misunderstanding and confusion is created because cadastre and land registers are maintaining duplicated data about “owners” and “possessors” over land rights. Since the goal is to unify these two registers, cadastre is at the moment at transition period According to the State Survey and Cadastral Act, cadastre should keep records on freeholders or leaseholders of property, so at the moment cadastre is keeping records on possessors but updating its databases by entering the owners over a certain parcel. The institute of “possession” is creating further confusion due to its different interpretation among clients. Some people believe that cadastre evidence on “possessors” is giving better real situation, since cadastral registers are more often updated. Other argues that in the previous time was possible to change possession without legal documents, meaning that data are not quite correct. All these confusions relating to interpretation and understanding of possessors should be clear, once when unification is performed.

Besides the confusion when relating to legal terms, another source of customer’s dissatisfaction is caused by number of backlogs which is also consequence of transitional period. Even though huge improvement has been done relating to previous years (Land Register of Zagreb decreased the number of backlogs from 141000 files to 23000 files) the fact is that the remaining ones are usually the most complicated and demanding to deal with.

Also according to land registers staff clients are often coming to their offices just to gain information about their specific cases. Staffs usually do not have time to answer these kinds of requests, so they believe that land register offices should have information desk which would be in charge of advising customers and giving them clear instructions on what actions they should take to receive their rights. These desks should operate at least one hour per week, lead by professionals and free of charges.

Another important issue is knowledge about procedures perceived by different involved parties (figure 3.9). Interviewers were asked to rate knowledge of LR procedures of stakeholders in the process. They supposed to mark knowledge from 1 to 4, putting 1 as the lowest mark. Results show that citizens are the least informed about procedures and they recommended publishing of brochure that would include all steps needed to perform the registration. Citizens are not supposed to be familiar with all existing regulations, but brochure should help them to understand basic elements of procedure in simple way. Notaries are also perceived as not being experts of understanding procedure. Surveyors have been criticized as too technically orientated, usually not reading the laws with expectations from cadastral staff to give them explanations on certain acts regulated by law. Interviews rated best the lawyers highlighting those who have specialized for LR procedures as being real experts in that field.

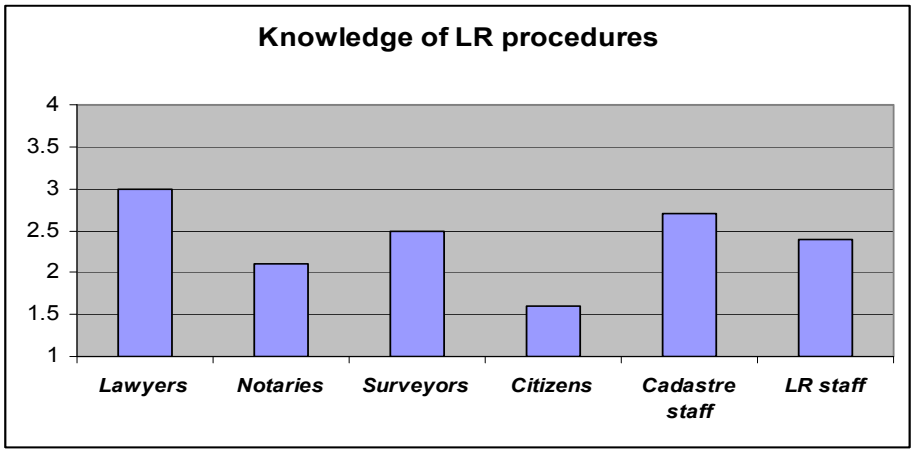


**Figure 3.9: Knowledge of LR procedures rated by interviewers**

Since level of cooperation between different organizations is important institutional aspect which must be achieved in order to perform simplification, interviews were asked to value their cooperation with cadastre / LR (dependent upon their profession and organization they collaborate with). Result is presented

in figure 3.10. Lawyers complained that employees of regional offices do not know and use legal terminology efficiency. Surveyors think that some cadastral staff should be more familiar with information technology. Some of them think that cooperation is based on personal connections, which is truer for smaller offices. Cooperation between cadastre and land registers is marked quite high from both sides which is good base for implementation of common electronic data processing.

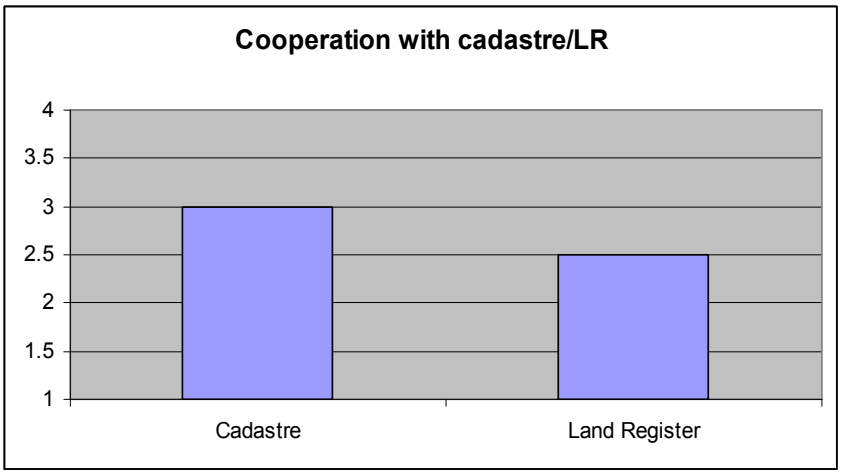


**Figure 3.10: Cooperation with cadastre/LR valued by organizations they collaborate with**

### 3.6.1.2. Simplification

As a main obstacle to simplification of procedures interviews were asked to choose between different options. As it was expected majority found mismatch of data between Cadastre and LR as a main obstacle (figure 3.11). As a result all interviewers are supporting process of harmonization. According to interviewers opinion backlogs will be past as soon as harmonization is done properly.

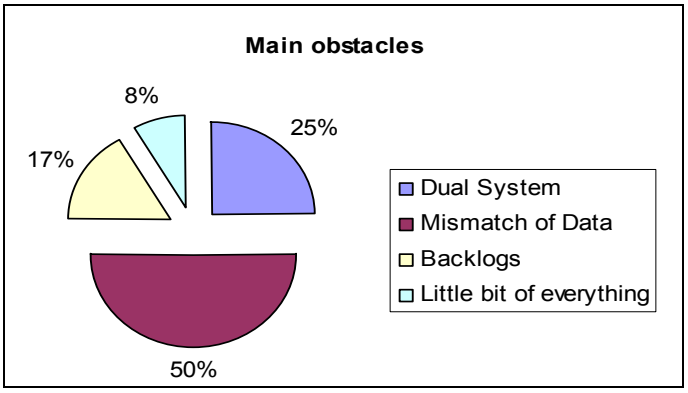


**Figure 3.11: Obstacles in the procedure**

Also different stakeholders were asked to give their opinion on the transaction cost in terms of money, time and effort included within registration process. As can be seen in the figure 3.7, they find procedures too long and too complex for citizens. There are many possible solutions for speeding up the procedures. Except harmonization of data inside cadastral and LR records and introduction of the common electronic data processors, some surveyors pointed out that technical control of their geodetic projects is taking too much time. They consider as they are already licensed for surveying, cadastre should only verify administrational part of project while technical part should be accepted without further examination. If surveyors made an error, they should be penalized by Chamber of Private Surveyors by paying for compensation or loosing their license.

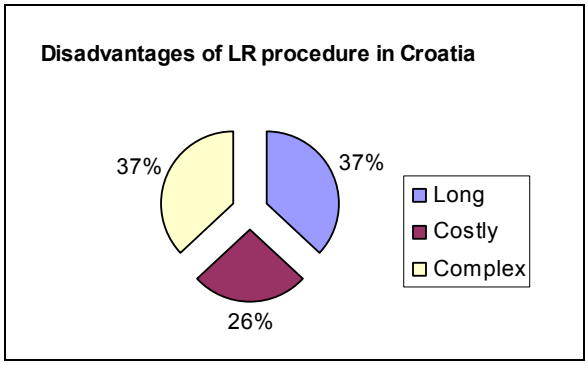


**Figure 3.12: Interviewers were asked to qualify LR process as complex, costly or long**

To achieve simplification, many institutions must be changed. As one of the interviewers stated “It’s not important only to change laws and regulations. The

most important is that people begin to believe that system is on their side, start to have trust in the system." Gaining confidence into organizations is possible only if they are well structured, and procedure of land registration is simplified through decreased number of steps, lower cost, limited required documentation and reduced time to register. Interviewers were asked what they perceived as a biggest problem from clients point of view that is increasing complexity of procedure. As can be seen on the figure 3.13, main obstacle is time and number of steps (42% think that required time is a main problem, 33% believe that is number of steps is big barrier, 17% find amount of required documentation as major blockage, while only 8% blame registration cost). Citizens would even prefer to pay more, but in order to get procedure done in reasonable time. Also required documentation wouldn't be barrier if they could collect it at the one place and without waiting. But since they have to visit many different organizations to gather all documents, long list of needed certificates is creating further complications.

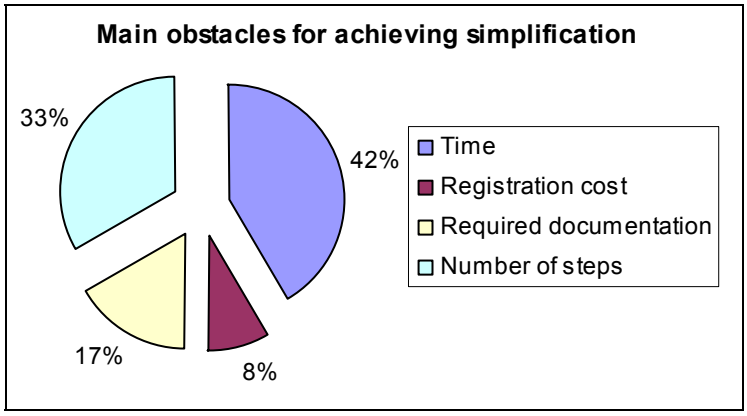


**Figure 3.13: What do interviewers perceive as a main obstacle for LR procedure;**

Also some interviewers added that clients usually make complains about open time of cadastre and land register offices as it goes in line with working time of many of citizens. LR in Zagreb for that reason already made available to citizens to visit their offices two times per week in late afternoon after they are finished with their own jobs.

#### 3.6.1.3. Transparency

As data of cadastre and LR are now available on line, all interviewers agree that level of transparency is much higher than it was couple of years ago. Citizens can check data via Internet and make comparison between cadastral and LR data.

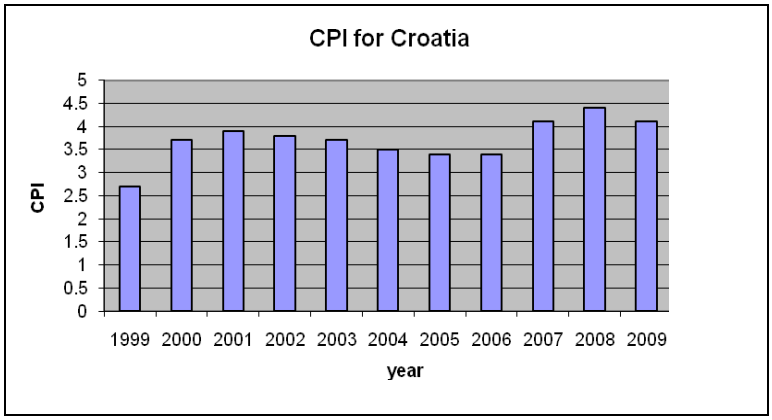


**Figure 3.14: CPI for Croatia**

All information concerning their parcels such as area, land use and ownership can be easily reached. But citizens still can not reach cadastral maps via Internet. If this information is available citizens would get fast access instead of waiting in the queues in front of cadastral offices. They would be able to access all relevant data from their home and immediately speed up procedure. Still, some improvements were made recently which is also presented in the graph of corruption perception index (figure 3.14). Graph was made using information on CPI from www.transparency.org.

## 3.7. Concluding remarks

The methodology of this research is based on qualitative case study approach. Both primary and secondary data were collected. Interviewees were the stakeholder in the process of land registration. Data on various aspects of LR procedure were obtained through semi-structured and open interviews. Results present weak practice from Croatian case caused by inefficient institutional arrangement through organizational aspects and good practice from Dutch case study. Results obtained from observing land transaction process in Netherland will later after discussion in chapter 4 be implemented in process re-engineering for Croatian case.

# 4. Discussion on results

## 4.1. Introduction

The previous chapter presents results of fieldwork data on the issues related to institutional performance as one of the elements of transparency. Results of organizational aspects, such as workflow and interrelation between organization, simplification as product of well settled institutional arrangements and finally transparency as ultimate aspiration were presented.

In this chapter, results will be discussed critically against theoretical background of mentioned elements with emphasis on comparison of Croatian and Dutch process of land registration. First subchapter is related to general comparison of two systems. 2nd part is discussion about elements of institutional reform with emphasis on organizational aspects, legislation and information technology. 3rd part presents discussion on simplification and finally conclusion.

## 4.2. Comparison of two systems

Findings of research for two study cases present process of land registration under different institutional frameworks influenced by different historical, cultural and political background. Netherland has effective land registration system supported by active land market. Croatia recently went through changes of political, judicial, economic systems that affected development of land administration. Privatization of state-owned land and promotion of private ownership affected land market. Dynamic land market forces Croatia to re-engineer process of land transfer by improving transparency, efficiency and effectiveness. Some basic information on two countries and land registration procedures, already discussed separately in chapter 2 are presented in the table 4.1.

**Figure 4.1: Basic information on Netherland and Croatia**

| | The Netherlands | Croatia |
|---|---|---|
| Inhabitants | 16.4 millions | 4.5 millions |

| | | |
|---|---|---|
| Area | 41,526 km2 | 56.542 km2 |
| Parcels | 7 millions | 12 millions |
| Area not registered | - | 7 % |
| Deed/Title | Deed | Title |
| Cadastre/ Register relation | Combined | Separated |
| Land surveyors | Governmental | Private |
| Boundaries | Fixed | Fixed |
| Cadastre/Register Funding | Self-recovering | Governmental |

### 4.3. Organizational aspects vs. legislation and IT

Organizational aspects can be described as "the number of and relations between organizations involved in registration" (Zevenbergen, 2002). Finding of this research is that organizational aspects are the most important elements of institutional reform in LA and as well the most affected elements by simplified process.

Outcome of the research is in line with previous findings. Zevenbergen (1998) stated that the success of the system of land registration depends on organizational aspects and the level of cooperation between organizations. To get an idea about how the process is set up, is not enough to look upon the establishment of the system in terms of legislation and one dimensional classification such as title/deeds, centralized/decentralized or government financed/self supporting, which is discussed in previous section of this chapter. The greater factor is process carried out in practice and workflow inside organizations.

When analyzing importance of IT, different professions have different approaches. The overall opinion among land surveyors in Croatia is that future development of LAS depends upon the technology and computer systems. Dale (1999) already introduced this approach as typical among land surveyors. He stated the problem of not having holistic approach to the understanding of property and importance of data integration. Stakeholders of the registration process are more involved into doing the job under their responsibilities rather than understanding the functionality of all system. It is difficult to change this approaches without adequate long term plans including mostly capacity building as a main driver. Stakeholders should be educated in terms of understanding the all land administration system, no matter what is in scope of their accountability. Dhondt (2002) did research on the relationship between information and

communication technology and work outcomes. According to his results, main drive at work is not amount of technology available to members of staff but cooperation between organizations, customers and employees.

In Croatia the current situation in LA is not supported by law, since law is assuming consolidation of data in the Base of Land Records which still did not take place. Therefore we can say that law is ahead of real situation. Contrary, in Netherland, law about certain matter is established only when is assured that will function well in the practice. Moreover mandatory role of notaries was brought into practice before new Civil Code was completed (Zevenbergen, 2003). All these cases support the research finding about importance of organizational aspects among other elements of institutional settlements. However, Zevenbergen (2003) argued that law is sometimes preventing further development and necessary changes. As an example he used statement of Lower House of the Dutch Parliament which did not recommend shift from the negative to completely different system of land registration but instead affirmed that improvements should be introduced.

### 4.3.1. Informal constraints vs. formal rules

Legislation and technical aspects play big role, but reason for emphasizing organizational aspect can be find under the influence of informal institutional constrains. Political situation in Croatia went through drastic change, informal change could not occur over night. North (1990) already stated that differences before and after such revolutions are often smaller than expected, due to informal constrains. Informal constraints such as norms of behaviour, self imposed codes of conduct and conventions are more durable.

Findings of this research brought out that for cadastral system to function properly it is required more than good technical and legal system. Research also reveals the importance of trustworthiness, already mentioned by Zevenbergen (2002).

As one of the interviewees already stated, the main problem of week LA system is not caused only by complexity of LR process, but people's lack of trust into institutions. Stubkjær (2007) introduced a vicious circle; system of LA will work if people have trust in it and people will have trust in it if system works.

To achieve conditions which are necessary for trust building, many of requirements must be fulfilled. National land policy must be in line with socioeconomic goals meaning that institutional framework must support clarification of lands rights. Land policy must include meetings and discussions

among all stakeholders with private segment, government and civil society organizations (Asian Development Bank, 2007). Only cooperation among different stakeholders with assistance from advisory groups can lead to successful trust building which will help arranging more simplified procedures. Lack of these steps which are implemented into Dutch system caused that Croatia still did not develop land policy toward sustainable economic benefit of the country.

### 4.4. Simplification

Improvement of relations between organizations will mitigate complexity of land transaction procedures by assuring access to information. If people get required information and fast, effective and efficient service it may lead to building of trust into system.

In Croatia, clients may access on line to some cadastral and land register data. Ministry of Justice through its web page provides data on parcel number, area, location, land use, owner's name, and properties listed in single owner's sheet. Cadastre provides on line information on parcel number, area, location, land use and user's name The benefits of web based cadastre and land registry are diminished by the fact that data are not provided through one stop shop. Duplication of data leads to inefficient and ineffective accessibility. Clients must visit local offices to get further clarification. Outcome of this research again support previous findings, that simplicity is important to ensure that access is fair and clear to understand and use (Zevenbergen, 2002)

As many of interviewees stated to achieve simplicity the most important piece of work must be done on the field of capacity building. Since LA, including registration process is about society, organizations and individuals (professionals, managers, administrators, land users) and their relation to land, they must understand how overall system is functioning. Furthermore, specific skills of every involved organization must be well developed (Enemark, 2004). If country like Croatia wants to have LA system similar to Netherlands it needs develop appropriate solutions such as university programs educating professional land administrators.

Since organizational aspects are already emphasized as the most important element of institutional change trust building and capacity development on organizational level will contribute the most to achievement of simplified procedure. Dimensions of such approach include cultural, managerial and institutional issues (Enmark, 2004). Findings of this research is that Croatia and Netherland do not share similar cultural issues related to bureaucratic behaviour,

due to fact that Croatia was for a long period under communistic framework. Still, these obstacles are objects of change, since political structure has already been converted toward capitalism society. So dynamics between different stakeholders are similar and solutions related to development of professionals bodies (private surveyors) or mechanism for sharing geo-information (spatial data infrastructure) can be looked from same perspective which is more discussed and presented in the chapter 5.

## 4.5. Transparency

Different cultural backgrounds, historical heritage and stakeholder's experience of two countries resulted in different attitude toward transparency. While in Netherland interviewees talked more openly about transparency issues claiming that access to information, public participation and institutional framework support transparent environment in the LR process, Croatian interviewees were more careful with answers. No one claimed to be familiar with any aspects of bribe or fraud.

When discussing access to information, finding of this research correspond to previous research work. As Dale (1999) stated "good LA requires access to good land information". Molen (2002) emphasized that open access to land ownership, value and use, which are open to public inspection with limited privacy protection and direct access to services can improve transparency. As we can see from the CPI graphs (figure 3.9 and figure 3.14), after reaching adequate access to information in Dutch system, level of CPI is not dramatically changed no matter what further simplification have been introduced in the system. Therefore, simplification is not ultimate for transparency, but implementation of elements of transparency such as access to information and change of institutional arrangements are crucial to achieve transparency.

## 4.6. Concluding remarks

Organizational, legislative and technical issues were discussed in this chapter in order to compare findings of the research with previous related studies. As institutional segments with influence on the land registration system they were analysed through one of transparency elements – access to information. Because institutions are highly influenced by informal constrains, this aspect was also discussed as important factor in achieving simplified and clear procedure of land registration.

# 5. Process reenginering of ownership transfer in Croatia

## 5.1. Introduction

In previous chapters 3 and 4, the results and discussion of the collected data were presented. The purpose of this chapter is to discuss process re-engineering and to model the simplified process for answering the last research question.

There are 4 sections in this chapter. Subchapter 2 concentrates on the main characteristics of every process reengineering. 3rd section describes the steps that need to be taken to achieve simplified model of land registration process for Croatian case. All recommendations are based on experience from the Dutch system. Redesigned process is presented in the 4th section by using UML use case, activity and class diagram. The final section refers to concluding remarks.

## 5.2. Process reengineering

As Tuladhar (2004) stated when performing process reengineering it is important to include several characteristics. Firstly, many pieces of work and tasks can be combined into one task. During the reengineering of the process it is crucial to identify those steps which can be reduced or merged. Another introduced change is ability of taking responsibility by staff members involved in business procedure. In reengineered process all employees should take part in the decision making and take responsibility for their actions. Modern organizations have a tendency to organize their workflow in vertical, hierarchical way believing that is the only method to assure efficiency based on domination, command and control (Olsen, 2006). In order to prove how inadequate this could be Reihlen (1996) argues that the higher up one gets, the more power he receives but less competence he becomes in technical decision making. All decisions made in the higher level of organization are based on numerous of assumptions but lack of personal knowledge and experience. However people on the lower level of organization show more competence produced by close relation between them and everyday reality.

All steps in process must be performed by logical order and employees must have full understanding of all undertaken steps. If this requirement is fulfilled,

customers find procedure transparent and clear. Furthermore it is important to avoid traditional way of production where necessities of mass market must be satisfied. With the aim to generate more, the needs of the market which is an object of rapid fluctuation may be overlooked. Croatia went through transformation from socialist economy to capitalism and consequently, demands for data related to land increased. Still, the way of supplying customers with cadastral data did not drastically change even though the needs of market completely changed direction. As a result there is a lack of efficiency, effectiveness and transparency in the process.

### 5.2.1. Efficiency

Registration of property transactions must be short and simple. The fewer steps there is, the less opportunity for non transparent activities (Zakout and all, 2006). The importance of efficiency must be constantly monitored by indicators such as time, cost and number of steps needed to perform process. These three indicators make foundation for new redesigned process in Croatia.

One way of achieving efficiency is providing web service. Dutch Kadaster is offering quality on line service with immediate access to all required data. E-shopping decreases time for data collection. Establishment of financial procedures through contracting professional and ordinary clients to cadastral and land register service result in effective cost control. Fewer number of steps and quality data lead to customer satisfaction.

Many researchers linked inefficiency to weak decisions which are mostly caused by failed group processes, the overconfidence of decision makers, weak leaderships or peoples rejection to take responsibility for their actions (Olsen and Pasz 2005). When people are totally independent and responsible for their work not only efficiency is achieved but demand for outside control and command will disappear. Moreover, efficiency will be achieved if overlaps are reduced, and this can be reached by using information technology which will enhance cooperation between organizations, facilitate recording, maintaining and searching of documentation and reliability of the service. Process reengineering assumes radical change and sometimes risk, since new methods are introduced. The hugest risk is possibility of non accomplishing efficiency which is measurable by mentioned indicators and characterized by refinement and incremental improvements (Sarkees and Hulland, 2009).

### 5.2.2. Effectiveness

Effectiveness of the service is also measured by time, cost and customers satisfaction. Effectiveness in LA depends on the capacity building, the general socio-political conditions and political stability (Zakout and all, ).In Croatia law on registration of property transaction is not supporting current situation in the LR and cadastre. This leads to different laws interpretations by different stakeholders and non effective procedure.

### 5.2.3. Transparency

Well known characteristics of transparency: access to information, public participation and applied elements of institutional reform are must for every redesigned business process. Research is based mostly on institutional reform which should be arranged by introducing simplification as a product of well arranged organizational structure. Emphasize is put on interrelation between organization under different institutional rules. In Croatia, cadastre and land register follow different regulations which decreases the transparency of procedure to the extent that even employees of these two organizations are not familiar with all steps included in the process. In Dutch case, mostly because of simplified procedure these confusions among employees and customers are avoided.

## 5.3. Case of Croatia – reengineering land register system

Even though cadastre and land register belong to two separate institutions, customers must see them as a one integrated body. The main goal is to build one databases which will be updated by Cadastre and Land Register. Data from these two different organizations must be harmonized. Harmonization process already started, but with very slow progress. Following definition of process reengineering set by Hammer and Champy (1993), process of ownership transfer should achieve quality and flexibility which is expressed through low cost, excellence service and increased speed of procedure. The simplicity of redesigned process will also have a great influence on shape and structure of organization (Tuladhar, 2004). Simplification implies transparency which is highly needed in order to achieve all of the set goals.

### 5.3.1. Service

When trying to improve service in order to achieve effective land registration system, it is important to look at the other subsystems which are involved. As

Zevenbergen (2002) pointed out success of land market depends on many institutional arrangements of which land registration is one. Efficient transfer of ownership depends on workflow of different organizations involved and their institutional settlement. This research reveals importance of profitable interrelation and cooperation between notaries, Agency and municipalities for Dutch case study. Improvement of service for land transfer issue in Croatia can be reached by improving the teamwork between cadastre, land registers, private surveyors and lawyers. The most important is to share and maintain data between cadastre and land register. Legislation in Croatia is supporting cooperation. Zevenbergen (2002) already emphasized that when developing countries adopt property laws of successful Western countries they experience different results due to subjective models such as norms of behaviour.

Formal rules should be written in way to decrease any negative influence of informal constrains like codes of conduct, customs, convention and tradition (North,1990). These constrains vary from country to country and laws must be shaped in order to understand them and their power. For example, in Croatia people believe that they can get better service if they have connections or friendship with cadastre or land register employees. Even though laws are initially same for everyone, people don't think that procedure is equal for everyone, but still they are not willingness to talk about fraud and bribe. In Netherlands, respondents talked more openly about "transparency issues" claiming that everything is transparent. Informal constraints and formal rules support each other in a way that is impossible to imply something in system which is against regulations. Contrary, in Croatia people are aware of laws, but they still believe that they are not implemented well in the system. This attitude could be avoided if customers would be well informed about procedure, steps taken in the process and role of each organization. Confusion and lack of knowledge about the process, lack of participation and access to information made them believe in non-transparency and non-equality of every customer. According to suggestions of interviewees, cadastre and land register should take the further steps in order to improve system:

- Clearly defined steps for the land registration procedure. (Publish brochure with clear and comprehensible instructions about process of ownership transfer)
- Introduce help-desk in cadastral and land register offices where people can just seek for information and scope of work of these two organizations
- Make legal adviser available at least two hours peer week for customers specific problems, free of charge

- Public notice of the procedure (on the web, in the offices)

### 5.3.2. Speed of service

Speeding up procedure can easily be done by reducing the checks and controls. In Croatia, cadastre is still checking in details the projects submitted by the private surveying companies. Doing that, huge amount of time is being spent on verification of the project that is already verified because surveyor with license is guarantying quality and accuracy of his projects. In Netherlands, surveyors belong to the Agency and they follow specific, defined workflow. This way of arranging workflow inside organization helps to speed up procedure.

Croatians surveyors follow their own rules and regulations; every company has its own way of working. Even local cadastre offices differ in their interpretation of laws. To avoid this it is necessary to follow these requirements:

- Laws must be equally interpreted for each and every local cadastre office
- Number of surveying companies must be decreased to lower number
- Cadastre must stop controlling technical parts of submitted projects

In order to achieve first point, laws must be written in a clear and simple way, without leaving space for wrong interpretation. Land surveyors must be educated to read and understand laws.

In Croatia, every engineer of geodesy with three years work experience and proof of passing the sate exam can form surveying company, which lead to too many surveying firms with only few employees. If the law would state the higher number of educated surveyors per company, workflow would be more unified.

With standardized work of private surveyors, Cadastre would not have to spend time on checking and control projects. Dutch experience reveals huge importance of unified and standardized work produced by surveyors which all belong to the Agency. Giving surveyors larger responsibility can also be regulated by putting high fees on private companies in case they do mistake. If surveyors submit incorrect project, they should be penalized by taking away their license and ability to work. In that case they would have more responsibility which is already proven (Olsen and Pasz, 2005) to have great influence on quality of the work.

### 5.3.3. Quality

The way of data gathering, processing and storing are still incomplete which results in law quality of cadastral information. Also maintenance of and the quality of effective and efficient land information system is seen through

availability of the common reference system, standardization of data and strategy in coordinating all functions that are related to land (Tuladhar,2002). High quality of redesigned process can be achieved by following points:

- Standardization of data related to land administration
- Establish appropriate database using modern GIS technology

Establishing database which will be maintained by cadastre and land register demands firstly harmonization of data kept by these two organizations. In Croatia, this process is still too long and without adequate results. Systematic adjudication which is taking place in Croatia includes resurveying of parcels of certain area. Right holders are asked to indicate their boundaries in the terrain,. After surveying parcel list is made indicating the rights on parcel. List is then put in the public inspection and right holders are called to confirm the properness of information for cadastre and land register. In that way, data are harmonized and put in the common database. Data harmonization process must also be reengineered in order to speed up procedure. Parallel with this process, private companies are doing many surveying jobs based on the individual requests of many right holders. Cadastre is accepting these measurements by correcting and adjusting the old out-of-date maps which decrease accuracy and quality of data.

Cadastre must create new database which will include measurements of private companies taken in last 5 years. By excluding the old maps and taking into account only what have been measured recently, cadastre would have correct, new maps as indicators of real situation - boundaries and right holders. Taking into consideration the number of parcels that have been resurveyed in the last couple of years, the new maps would probably cover the most of the area. Only the areas that are not covered should be surveyed and put into public inspections. It is worth mentioning that all of these points are impossible to imply without finance and institutional support.

### 5.3.4. Cost

Zevenbergen (2002) emphasized the importance of quality land transfer registration due to uncertainty reduction. Results from questionnaire made in Croatia show that people are willingness to pay more in order to get clear documentation about their property rights. As long as time and effort put in the process of registration is acceptable they are ready to pay more money which is quite beneficial for protected monopolies of private practitioners. High transaction cost can be prevented by limiting certain professionals (like lawyers and licensed surveyors) to benefit from the existing inefficient procedure. This can be done by implementing all the points mentioned above, together with:

- Publishing transparent and fixed fees for registration and surveying that will be followed by all private practitioners without exceptions

## 5.4. Redesigned process

Data must be shared among all subsystems as well as other systems that may belong to different organizations (Tuladhar, 2003) The goal is to achieve data availability to the place where needed. Data should be stored at the central database which can be situated in the capital of the country and easily disseminated to local cadastre and land register offices via intranet or Internet using telecommunication network. In order to link data between district offices and main database, the content of the data should be equal to the data of other subsystems. Such standard of exchange data model or "core data model" will derive data from other subsystems. Furthermore it is very important to protect data from illegal users and also to protect privacy records that information may contain.

### 5.4.1. Organizational model

Organizational structure describes the goal and the structure of organizations with the main goal to create an idea of the effective system (Tuladhar, 2003). In Croatia, cadastre and land register database is organized in hierarchical structure at central and local levels. Proposal is to keep this communication and sharing of certain data at central level

Local database is updating information at their level. Base of land records at central level is maintained with selected and synthesized information reported from local levels. Even though there are few pitfalls with updating data at province level, such as possibility of communication blockade due to multiple accesses of several local offices, the system requires organization which is coincident with current institutional conditions. Legal and technical aspects are supporting this way of data updating and sharing. Figure 5.1. is presenting the proposed organizational model for service of land transfer ownership. Databases at local level assume information from local land registers and cadastre offices. On the local level where contacts with land and people occur, detail information is collected. This information is later on available on customers (ordinary clients and professionals) demand.

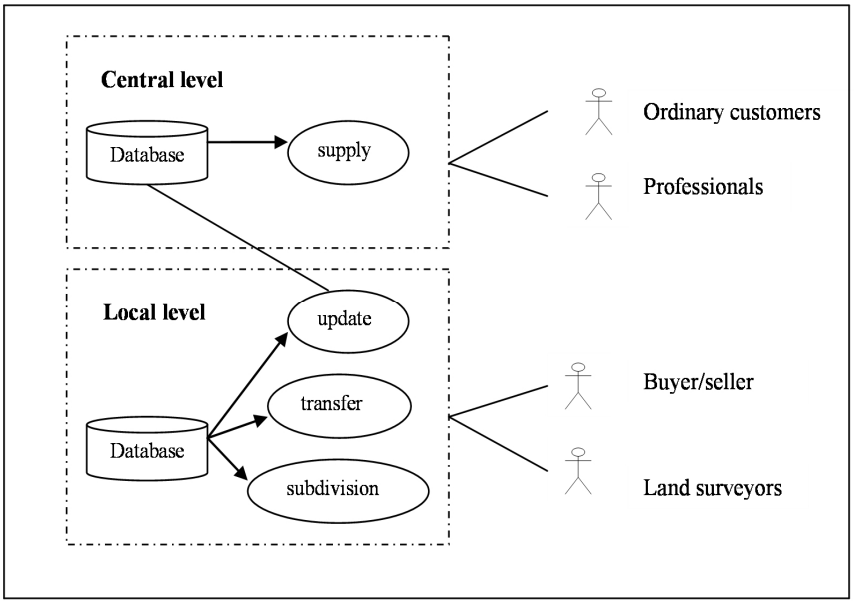


**Figure 5.1 Organizational model for service of ownership transfer**

The core of this model is to organize subsystem models for land registration process. Subsystems are:

- Supply
- Update
- Subdivision
- Transfer

Supply subsystem will take out the information from the local database according to user's requirements (figure 5.2.) Distribution of data is arranged through Internet applying the standards of geospatial data infrastructure.

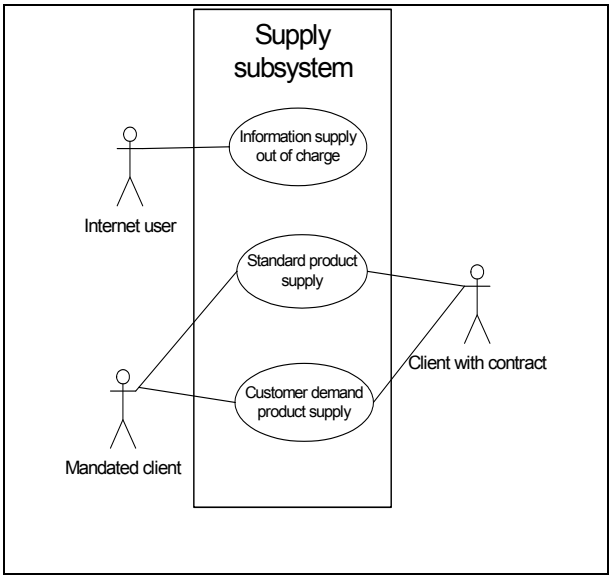


**Figure 5.2: Use case diagram for supply subsystem**

Internet user is every individual who access to land records website and gets information on ownerships, land use and area free of charge.

Client with contract represents individual to whom products and services are supplied by making a contract, which includes access to wide range of data such as maps, geodetic projects, history of changes.

Mandate clients are public authorities who get products through legislation.

The use case description is given as follows:
Information supply out of charge provides products by publishing information on website. Information is available to all clients with Internet connection. Standard product supply is offering information through contracts or legislation. Customer demand product supply is orientated more toward professional clients such as private surveying companies which have contracts. Inputs include customer's application and outputs user defined products.

Update subsystem (figure 5.3) is important due to building land ownership transfer process that will support on security of the tenure. Information in database is updated by organizations that are responsible for the data. Geometric data such as boundaries, information on sub parcelling and merging are updated by local cadastre (LR) offices. Local land registers (LLR) are responsible for updating registration that takes place under the spatial frame of their accountability. Central database which is kept informed by local offices is maintained at central level. LLR updates title changes at local and central level; local cadastre (LC) office updates information on land use and area at local and central level, and maps on local level.

Because land information is temporal and complicated it is essential to make changes updated on time. Following the procedure, every organization in process has its own responsibility and there is no redundancy of data, which speeds up the process.

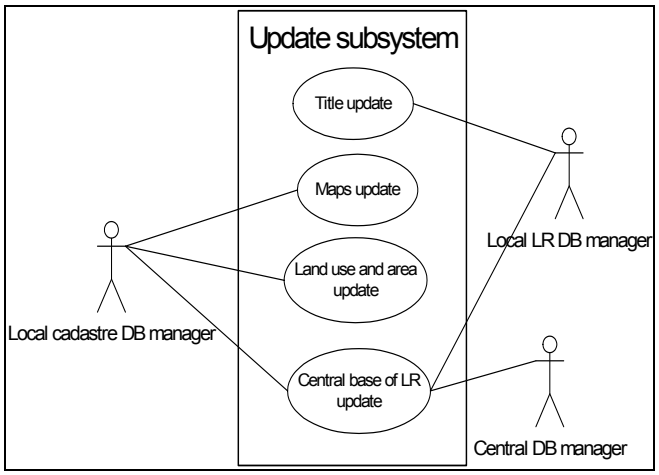


**Figure 5.3: Use case diagram of update subsystem**

Subdivision subsystem (figure 5.4) and all other land surveying activities are under the scope of private geodesists companies. Cadastre and land register are responsible for giving them access to all relevant information including coordinates of geodetic points, previous geodetic projects, large scale maps of area with detail description of previous surveying activities, new parcel identification numbers, information on property rights of parcel that is going to be measured and neighbouring parcels. Private companies cooperate with cadastre when submitting their projects as cadastre is in charge of accepting their work. Quality of cadastral data is dependent upon the quality of projects submitted by land surveyors.

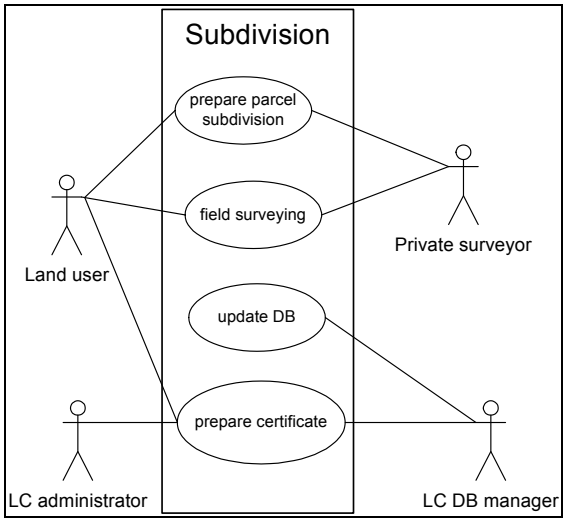


**Figure 5.4: Use case diagram for subdivision subsystem**

Majority of process of ownership transfer is under the scope of land registers. Notaries are not so important in the system; their accountability is limited to notarizing the transfer contract. Number of steps taken by land users is minimized to contract preparation, submitting application to local LR, paying transfer taxes and signing title change certificate. Local LR is checking the validity of application for ownership change. Once application is accepted local DB manager will update database. Finally, LR will issue title change certificate.

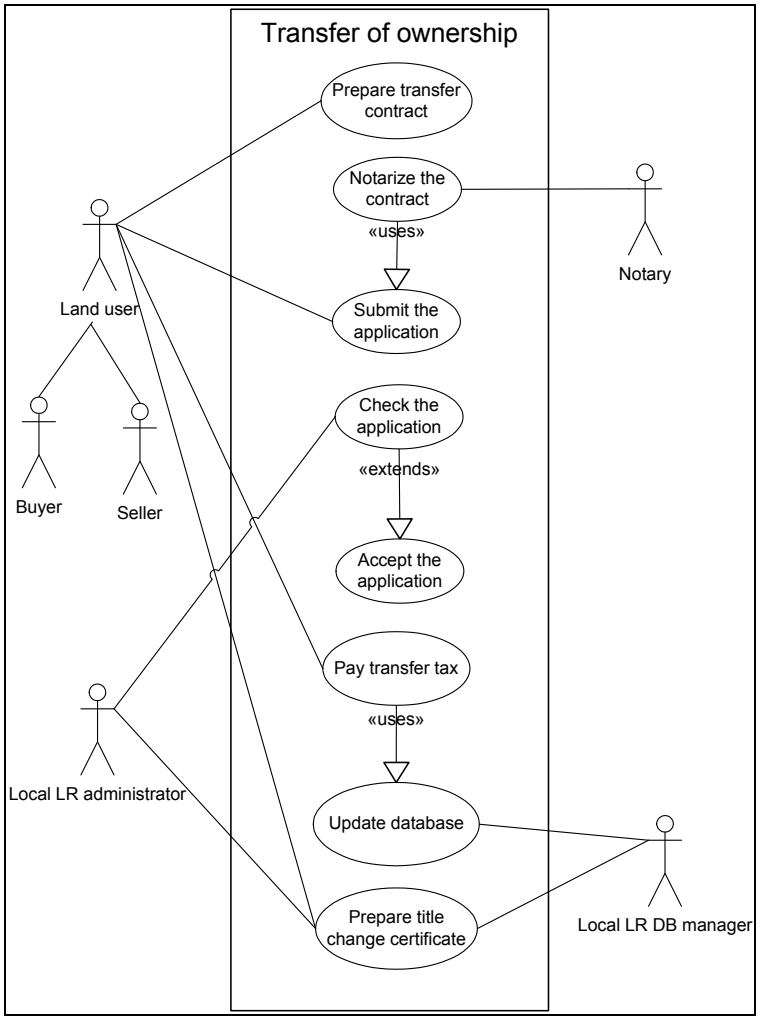


**Figure 5.5: Use case diagram for transfer of ownership**

### 5.4.2. Functional model

Functional model shows how the systems suppose to function in order to satisfy users requirements (Tuladhar, 2003). The system of functional model should be designed to support the structure of organizational model. (Tuan, 2006) The central database must extract data from local levels through industry standards and formats that communicate. Users including external organization should access the land information using Internet portal. The functional model at lower level can be described as process in few steps:

- Data capture: collecting data through submitted geodetic projects in local cadastre offices, or ownership transfer at LR offices
- Data standard and conversation: conversation of spatial and non spatial to standardized formats
- Data update: Update central database in terms of ownerships, land use and area and local database in terms of maps and other documentation

Citizens have access to information about parcels area, use and ownership by searching through the parcel number or number of registration sheet. This information is available out of charge, which is already in the system. Besides, citizens with contract should have access to maps on line by requesting certain parcel. This would decrease work of cadastral offices which are still providing maps only by copying analogue sheets or printing digitized ones since they are not available on line. Private surveyors must have access to all these information and access to submitted geodetic projects. They should also be able to check the status of recently submitted project which is still not processed. This would prevent possibility that cadastre may abuse its power by prioritizing the work of certain licensed companies by giving precedence to their projects. Activity diagram is presenting supply via Internet (figure 5.6). System is secured from non legal access, meaning that only users with legal rights and query content that is in line with related regulations can receive information. All Internet users have free service which allows access to selected data about ownership, parcel area and use. Payable service for registered users allows access to cadastral maps (boundaries of all parcels and parcel identifiers) and land register documentation. Professional clients will have access to coordinates of geodetic control network points and previous geodetic projects.

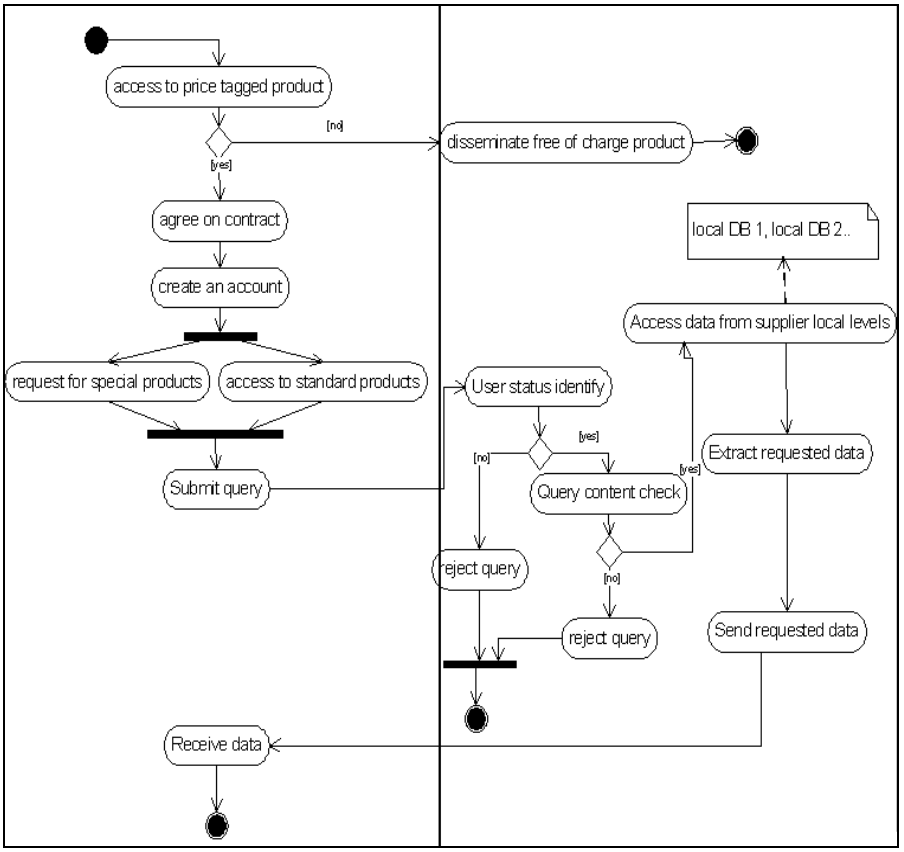


**Figure 5.6: Activity diagram for supply and access to information**

In case of merging or sub parcelling before selling the land, buyer and seller are obliged to contact land surveyor. Private surveying practitioners perform land measurements using all relevant data from cadastre including new parcel identifications for created sub parcels. The issued parcel ID is updated in local database. This is done with putting comment that identification is temporal since relevant geodetic projects is still not examined and accepted. Cadastre is no longer checking surveyors work in terms of technical issues, projects are rapidly accepted. After project is accepted, local cadastre office update local cadastral database and database of land records. Comment on temporal parcel ID is removed. When all registers are updated, transfer of ownership can be preformed.

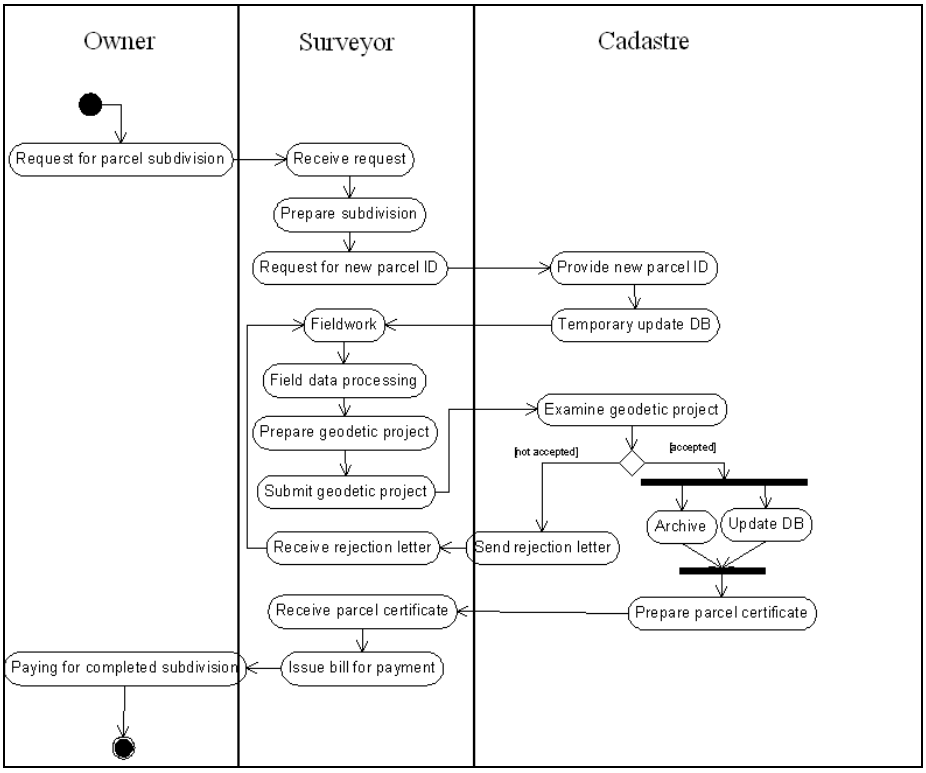


**Figure 5.7: Activity diagram of subdivision**

Procedure of transfer of ownerships starts with owners decision to sell the parcel. Buyer will physically examine the property. This approach supposes harmonized data, the procedure which is already described and proposed earlier. After agreement on terms of sale, both buyer and seller sign sale contract which is notarized by notary. Notaries don't have crucial role in the process, unlike the Dutch system. Transfer application is submitted to land register by clients themselves after paying the transfer tax. Local land register office then records the new title and update central base of land records.

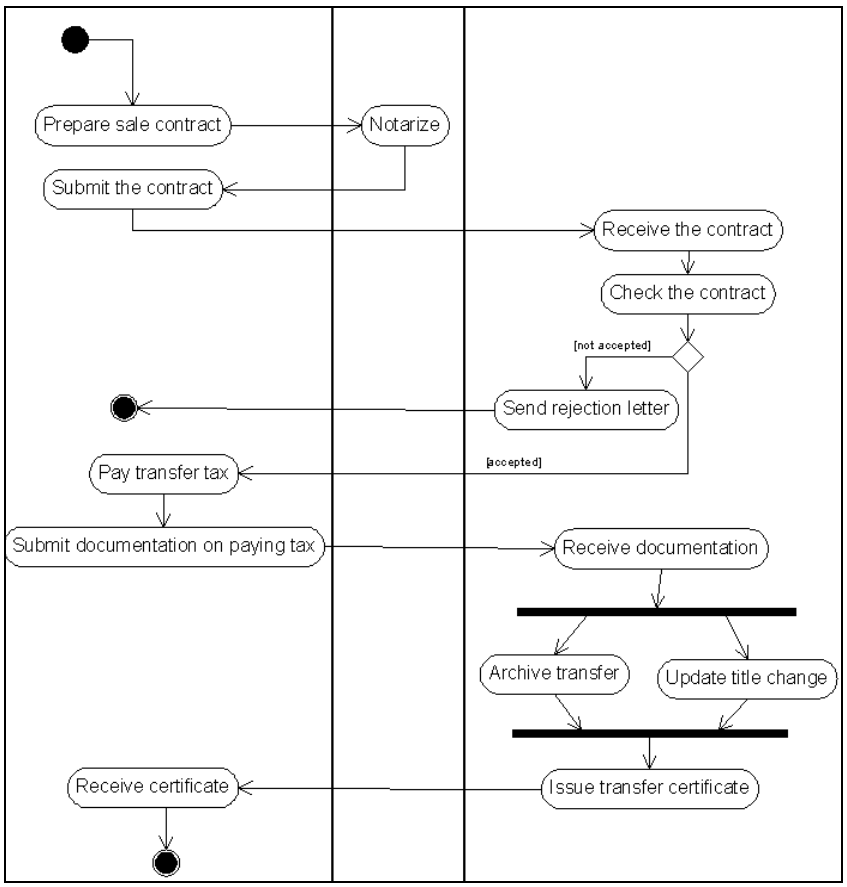


**Figure 5.8: Activity diagram on ownership transfer**

When local cadastre offices receive geodetic project with changes made on parcels, they are responsible of updating local database. Therefore, printed projects are kept to archive the change. Projects in digital formats are used to update existing maps which are maintained at local level. Changes in parcels area and land use are updated at local and central level. The same is with ownership transfer which is under responsibility of local land registers.

### 5.4.3. Data model

Standardized Land Administration Data Model (LADM) operates to achieve two important goals (Kaufmann and Steudler 1998): (1) provide basis for efficient and effective cadastral development built on the model driven architecture and (2) allow stakeholders to communicate using share ontology which is implemented in the model. The second goal is particularly important to enable data exchange between several registrations within one country (Groothedde et al, 2008).

The proposed UML class diagram for core cadastral domain of land registration at local level (figure 5.8) illustrates different types of relationships between objects. Since diagram contains various classes: legal, administrative and surveying it means that data are maintained by different organizations e.g. Cadastre and Land Register are responsible for data maintenance. It emphasizes the significance of the model, different organizations have their own accountability, but they have to communicate through standardized process (Oosterom and Lemmen, 2006).

Three central classes are shown in the figure. Relationship between "Parcel" and "Person" is based on the "Ownership Right" (rights and public restrictions). Right is real property right based on legislation and restriction is a legal restriction to property right. These two classes contain many subclasses (Common Right, Real Property Right, Personal Right, Public Advantage, Public Regulation) which are described in table 5.1. Ownership Registration Application presents clients application for ownership transfer which is linked to "Change of Events". After change is updated "Change of Events" stores it as history information on parcel.
Survey Document consists of files referring to terrestrial observations and measurements submitted by licensed geodesists. Survey point is associated to Survey Document and single Survey Document is linked to many survey points. Geometric description of the parcel is based on Survey Points. Modification class stores changes on parcel using Survey Document as a source. After parcel is updated, Modification saves information as a parcel history. All parcel processes in progress are stored in the ChangeLog class.

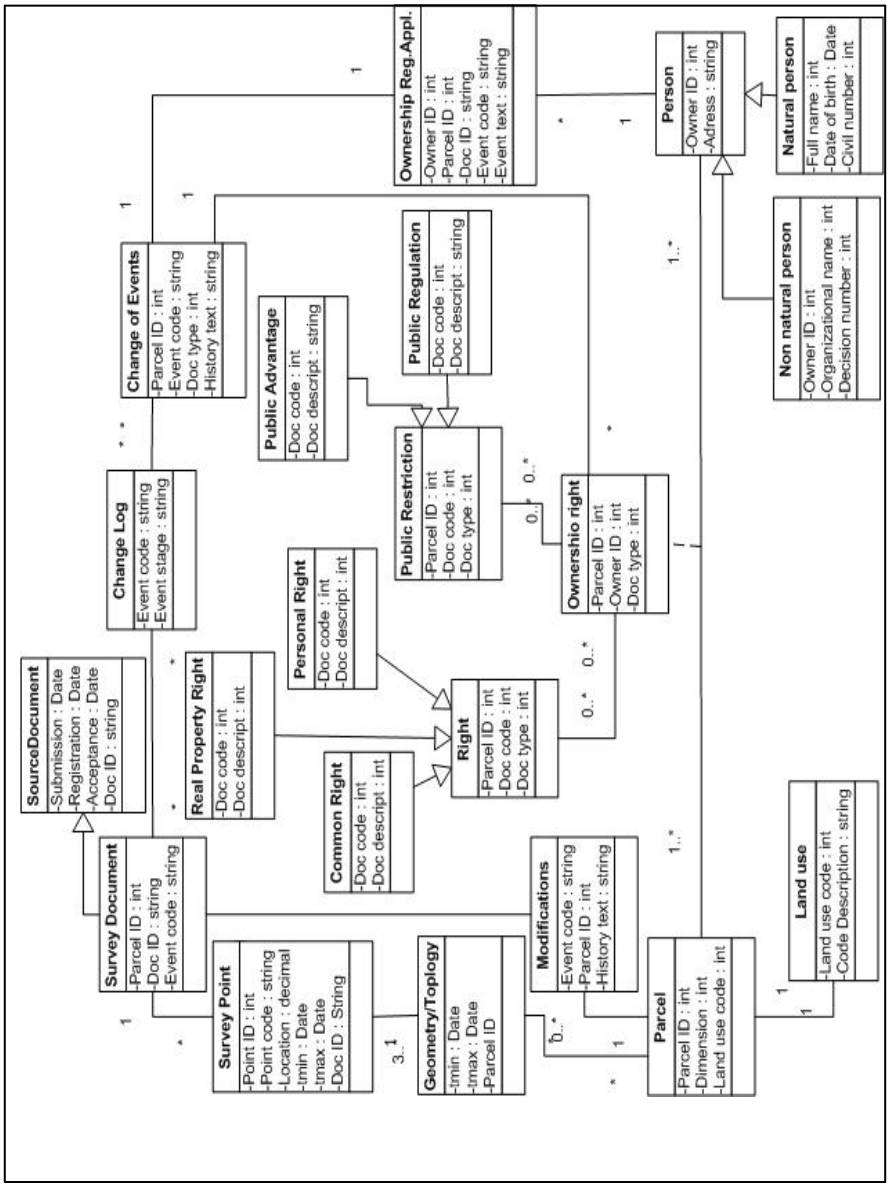


**Figure 5.9: Proposed data model**

**Table 5.1: Classes**

| | |
|---|---|
| Parcel | A single area of land under homogeneous real property rights and unique ownership |
| Person | Class that stores information on individuals or other entities of social structure |
| Ownership Right | Class that contain information on current rights, responsibility or restriction on parcel |
| Right | Class that presents formal rights to ownership |
| Common Right | Subclass presents right belonging to the property (if property shares common property units) |
| Real Property Right | Subclass that presents right that can benefit or restrict ownership right by using another real property |
| Personal Right | Subclass presents right carried out by persons or organizations in terms of renting or using fruits of the land |
| Public Restriction | Class presenting advantage or regulations issued by local bodies or government authorities |
| Public Advantage | Subclass presents benefits imposed by public bodies |
| Public Regulation | Subclass presenting restriction required by public bodies |
| Survey Document | Class presenting legal source document made in the field |
| Survey Point | Class presenting metric foundation of object |
| Geometry/Topology | Class presenting parcels geometric description |
| Modification | Class that stores changes in terms of parcel geometry.. |
| Change Log | Class that stores information on current valid process on parcel |

| | |
|---|---|
| Change of Events | Class that stores changes on parcel in terms of ownerships. |
| Ownership Register Application | A class that stores clients application for ownership transfer |
| Land Use | Depending on the benefit of the land use, there are many land use classes. This class includes all type of land class. |
| Natural Person | Specialization class of "Person" , presenting individuals |
| Non natural person | Specialization class of "Person", presenting organizations, companies, government institutes |

### 5.4.4. Assessment of re-engineered process

The organizational model is designed like distributed data base system, where every cadastre and land register at local level has its own database. Functional model is built to access information through central level where data are extracted from local levels. Data model for ownership transfer is built based on the International Federation of Surveyors (FIG) core model with modifications according to situation in Croatia. Assessment of process may benefit both, country and process itself. If assessment is evidence for more modifications and these modifications are applicable for other countries then they can be adopted to cadastral domain model (Sucaya, 2009).

After implementation of the model on structural, functional and process level, layout of process is presented in the table 5.2. In comparison with existing model, number of steps is decreased from 9 to 5, time is decreased from 170 to 34 days. Costs depend upon the client's type of contract with Cadastre/LR and on fees which are regulated by law.

**Table 5.2: Number of steps of proposed process**

| Number of steps | Procedure | Time | Cost |
|---|---|---|---|
| 1 | Obtain land registry extract on line | 1 day | Depends upon type of contract with Cadastre/LR |

| | | | |
|---|---|---|---|
| 1 | Hire notary to notarize the contract | 1 day | 94 HRK for 2 signatures |
| 1 | Submit the contract to the municipal tax administration | 30 days | No cost |
| 1 | Pay registration fees | 1 day | 200 HRK (registration fee) + 50 HRK (stamp duty) + 5 % of property value |
| 1 | Register land title | 3-5 days | No cost |

Assessment questions (table 5.3.) used for process assessment are based on the positive experience from the Dutch case. The answers to these questions also give remarks to the reduction of time, cost and number of steps. As interviewees (subchapter 3.5.1.2,) stated the biggest problem for achieving simplification lies in the amount of time they put into procedure and number of steps. Results of the assessment questions show that biggest effort in the improvement of service of land registration system in Croatia is put on the reduction of time and number of steps.

**Table 5.3: Assessment questions**

| ASSESSMENT QUESTION | ASSESSMENT ANSWER | REDUCTION OF | | |
|---|---|---|---|---|
| | | TIME | COST | NO. OF STEPS |
| Are the unnecessary steps merged or removed? | Many unnecessary steps are either removed or merged which leads to reduction of no of steps from 9 in existing process to 6 in proposed one | √ | √ | √ |
| Is coordination between cadastre and LR improved? | The coordination is improved, since both organizations maintain same DB | √ | X | √ |
| Is the Land Registration | In terms of data maintaining, LR | √ | √ | √ |

| | | | | |
|---|---|---|---|---|
| service integrated? | service is integrated, there is no duplication of data and no need to apply for the same procedure to different organizations | | | |
| Is payment of LR service integrated? | Clients can access to all relevant data by signing contract and fees can be paid on line | √ | X | √ |
| Are all relevant information available on line? | Yes | √ | X | √ |
| Is service provided from one stop shop? | Land registration is provided from one stop shop, still subdivision includes hiring private practitioners | √ | X | √ |
| Does cadastre perform surveying activities? | No, all surveying activities are under responsibility of private sector | X | X | X |
| Does the number of professional surveying companies decrease? | Yes, surveying companies must fulfilled requirements subscribed by law to carry out surveying work | √ | X | X |
| Is the information system integrated? | Yes, all personal, cadastral data as well as information on rights, restrictions and responsibilities are provided from one source | √ | X | √ |

**Institutional/organizational arrangements**

From institutional/organizational point of view proposed process has many limitations. Institutional arrangements must be improved gradually because reorganization of ownership transfer can not wait until perfect arrangement is achieved. Moreover, one of constrains for process implementation is lack of human resources particularly at local level. Training employees according to their professional disciplines is therefore unavoidable.

One of the comparative advantages of this process is integration of two organizations under different institutional frameworks. Within the scope of subdivision and ownership transfer both spatial and non spatial data are retained. Registration activities have fundamental role in data maintaining although cadastre must implement existing Map Standards to keep relation between data captured by different methods. Improving the links between cadastre and land register is important part of this issue.

**Technical aspect**

The process overlooks the existence of non harmonized data between cadastre and land registers. The current main problem lies in data quality since cadastral maps and Land Books are not updated and they can not indicate the dynamics of land and parcel changes accurately. Before implementation of proposed system it is essential to update those registers to reach efficiency and effectiveness. Furthermore, issues regarding hardware, software and communication must be discussed. Currently, there are excellent computer facilities for achieving effective land registration system in Croatia. Main drawback for the future development of registration process is yet not established software for the information system of LA. Once when preferred software is chosen, the requirements will be put on further staff training, compatibility and funds for system management

The merit of the model is reduction of backlogs. Model assures long term direction of work which avoids the time consuming frequent changes in solution selection.

Legal framework can not be interfered by this data model. Lack of the subsystem that would be in charge of dealing with conflicts on land is model disadvantage.

## 5.5. Concluding remarks

In this chapter main task was to design new business process of land registration for Croatia. Process reengineering was done in order to accomplish quality, speed and excellent service. To achieve these conditions, arrangement from Dutch registration system that fit in Croatian institutional framework was implemented. Emphasize is put on simplification of procedure, as one of transparency characteristics. UML is used as it enhances transparency of cadastre and land register organizations by clear visualization of its business. Data model is built based on cadastral core domain model with adaption to Croatian case. Process is assessed using assessment questions to present its efficiency in decreasing of time, cost and number of steps. Proposed system is orientated toward fulfilment of customers' requirement by improving organizational workflow.

# 6. Conclusion and recommendations

## 6.1. Conclusion

This research has assessed the impact of institutional reform on land registration process. Since system of land registration is complex, this study tried to connect element of transparency (access to information) with elements of institutional reform evaluating simplification as a tool for achieving transparency. Simplification is assessed through tree main indicators: time, cost and number of steps.

Elements of institutional change required to achieve transparency and the simplification were studied by comparing registration process in Netherlands and Croatia. Findings of this research are presented below

1. What are the most important elements of institutional reform in Land Administration Systems?

This research considers that organizational and legal aspects are the most important elements of institutional reform. Moreover, interrelation between mentioned aspects is the most significant for successful LR process. Weakness of one of two aspects can influence performance of strong one. In Croatia, insufficient interrelation between cadastre and land register is diminishing weight of legal and technological aspects. In Netherland strong organizational and technical aspects are diminishing influence of negative registration system (lack of guarantee regarding title).

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2. Which institutional elements are the most affected by simplified process of the land registration?

Finding of this research includes organizational aspect as the most affected by simplified procedure. Simplicity supported by functionality of system is achieved by involving as minimum number of organizations as possible. Fewer organizations are able to establish meaningful interrelation, guarantying productive workflow. Good structure within organizations and level of cooperation between them is imperative to achieve efficient LR system. This is visible from Croatia case study where existence of good legal aspects does not provide efficient land registers. Legislation is supporting establishment of central database for land records but weakness of organizational aspects (inefficient cooperation between cadastre and land register) is preventing this in practice.

3. How complexity of the procedures affects efficient access to information?

Complexity of procedure can negatively influence access to information. In Croatia, web based registers and cadastre permit on line access to some information. Still, duplication of provided data and fact that they have been

provided by different sources causes customers confusion and dissatisfaction with offered access. Clients this access do not find efficient since they have to visit register and cadastral offices for further clarification.

4. How does simplification contribute on building trusts and transparency?

For Dutch case this research reveals LR system as highly transparent. Another finding is that regarding organizational and legal aspects there is no need for major improvements. System reached satisfactory level of simplification in terms of providing service and introduction of further changes related to simplicity will not have significant effect on the transparency. The same is with level of trust into system. People believe that system is "on their side" and additional technological upgrading will keep trustworthiness at the same high position as before. Introduction of technology is also on going process in Croatia. Still, system did not reach satisfactory level of simplification especially considering organizational aspects and people are doubting its transparency..

5. How can registration process be simplified to achieve transparency?

Simplification of the registration process in Croatia is preformed by following positive experience from Dutch case. To achieve this, process re-engineering of land register system (related to ownership transfer and subdivision of parcel) is preformed. Therefore organizational, functional and data model elements were studied. The proposed organizational model includes databases at central and local level. Base of land records is maintained with selected data (parcels ID, area, type of use, ownership) from local levels. Central level can access and supply more information of local databases at customer requests. Database consists of information from land register and cadastre. The main advantages of this process which increase simplification is integration of two organizations under different institutional frameworks

**The overall finding**

Though, simplification creates transparency, but it is not the ultimate requirement. Less number of organizations versus many of them involved in procedure will definitely introduce simplification; hence it is not guaranty for transparency. The most important is well established interrelation between elements of institutional change supported by informal rules. System does not have to be put on the highest level of simplicity to achieve transparency; rather creation of environment where people believe into system will produce beneficial results.

## 6.2. Recommendations

Therefore, recommendations for the further research were proposed:

- More research on what are the political and financial constraints in Croatia and their impact on access to information, organizational and technical aspects and simplified process in general
- More research on public participation in LR system and its influence on transparency
- Conduct specific study on possible conflicts over land created by shifting from Land Cadastre to Real Property Cadastre in Croatia
- Validation of the proposed Data Model by using constraints

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**Appendices**

Apendix 1: Questionnaire - Netherlands

This questionnaire is made for the reason of writing Msc thesis.

The answers will be used for research and no other purpose. The answers will not be used without permission of interviewers.

Name _____ E- mail: _____

Job description _____ Date: _____

Simplification

1. Which institutional arrangement do you find most effective in the process of simplification (1 is the lowest, 4 is the highest mark) and could you please give an explanation?

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| i. Register and cadastral mapping combined | ☐ | ☐ | ☐ | ☐ |
| ii. Mandatory role of notary in deed preparation | ☐ | ☐ | ☐ | ☐ |
| iii. cadastral surveyors for cadastral surveying | ☐ | ☐ | ☐ | ☐ |
| iv. Centralized offices | ☐ | ☐ | ☐ | ☐ |

2. Which aspects are the most important for achieving simplification (1 is the lowest, 4 is the highest mark) and could you please give an explanation?

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| i. Organizational structure | ☐ | ☐ | ☐ | ☐ |
| ii. Coordination between organizations | ☐ | ☐ | ☐ | ☐ |

iii. IT component ☐ ☐ ☐ ☐

iv. Legislation ☐ ☐ ☐ ☐

3. Which are the most important indicators of simplification of procedures (please rank them from 1 to 3, 1 as the less important)

| | 1 | 2 | 3 |
|---|---|---|---|
| 1. Cost reducing | ☐ | ☐ | ☐ |
| 2. Time reducing | ☐ | ☐ | ☐ |
| 3. Decreased number of steps | ☐ | ☐ | ☐ |

4. Do you think electronic deed registration system is more transparent or transparency is at the same level as it was before introducing the system?

Organizational aspect

5. How many employees does your department have and what is their educational level?
6. What contracts do you have with other organization due to data updating, data sharing and data dissemination?
7. How often do you update your databases in your department?
8. How would you rate your cooperation with municipalities and if there should be some improvements in which field?

i. Excellent ☐

ii. Good but there should be some improvements ☐

iii. Not good, many improvements should be implied ☐

9. How would you rate your cooperation with notaries and if there should be some improvements in which field?

iv. Excellent ☐

v. Good but there should be some improvements ☐

vi. Not good, many improvements should be implied ☐

10. Do you think that notaries have monopoly in process of land registration?

Financial aspect

11. Do you find the notaries fees for land registration too expensive?
12. Do you support land taxation system on municipality level?
13. Does centralized updating of cadastral information can reduce transaction cost?
14. According to your opinion, can involvement of private sector in cadastral surveying reduce transaction cost due to data collection?

Appendix 2 : Questionnaire - Croatia

1. How many employees do you have and what is their educational level?
2. Do you need more staff and in which field?
3. Do you think that you meet your clients need, and if not in which way?
4. How would you rate knowledge of land registration procedures of (1 is the lowest rate, 4 is the highest)

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| i.Lawyers | ☐ | ☐ | ☐ | ☐ |
| ii.Notaries | ☐ | ☐ | ☐ | ☐ |
| iii.Surveyors | ☐ | ☐ | ☐ | ☐ |
| iv.Citizens | ☐ | ☐ | ☐ | ☐ |
| v. Cadastre staff | ☐ | ☐ | ☐ | ☐ |
| vi. LR staff | ☐ | ☐ | ☐ | ☐ |

5. How would you rate your cooperation with Ministry of Justice and if there should be some improvements can you specify in which area?

1 2 3 4

☐ ☐ ☐ ☐

6. How would you rate cooperation between cadastre and private surveyors and if there should be some improvements can you specify in which area?

1 2 3 4

☐ ☐ ☐ ☐

7. According to your opinion is process of land registration still

| | yes | no |
|---|---|---|
| • to long | ☐ | ☐ |
| • costly | ☐ | ☐ |
| • complex | ☐ | ☐ |

8. Do you have all your maps and data about possessors computerized?

yes ☐ no ☐

9. Do you entry changes digitally or manually into the system?
10. How often do you update your database?
11. What do you find to be the main problem of backlog accumulation?
12. What do you think is the main problem for complexity of LR procedures (rate it from 1 to 3, 1 is the lowest rate)?

| | 1 | 2 | 3 |
|---|---|---|---|
| i.Dual system | ☐ | ☐ | ☐ |
| ii.Mismatch of cadastral with land registry data | ☐ | ☐ | ☐ |
| iii.Backlogs | ☐ | ☐ | ☐ |

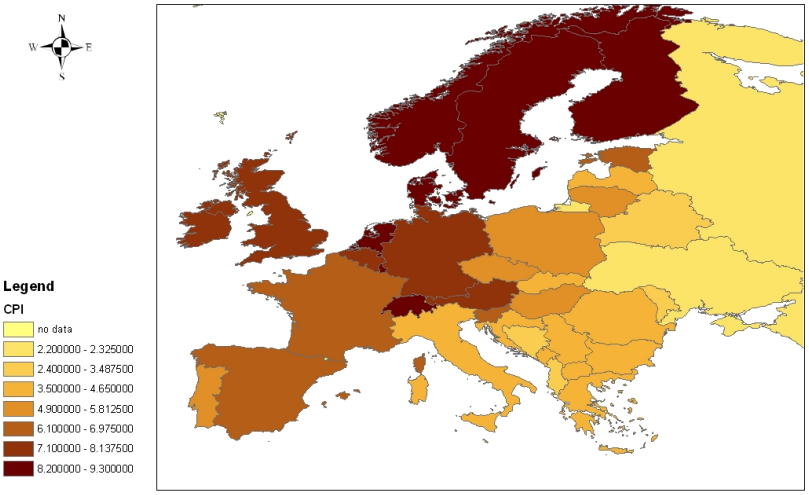
13. What do you see as a main obstacle from client's aspect in land registration process and if there should be some improvements in which area (rate it from 1 to 4, 1 is the highest rate)?

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| i.Time for registration | ☐ | ☐ | ☐ | ☐ |
| ii.Registration costs | ☐ | ☐ | ☐ | ☐ |
| iii.Required documentation | ☐ | ☐ | ☐ | ☐ |
| iv.Number of steps | ☐ | ☐ | ☐ | ☐ |

14. Are you introduced to the land registration system of other countries? If yes, please specify which country?
15. How would you rate Croatia in comparison to land registration system of other countries?
16. How well are you inform with land register reform in Croatia?
17. Did you follow any training program supported by your organization about reform?
18. How would you evaluate the changes within LA in Croatia?
19. Do you think that changes done in the last few yours contribute to higher transparency?
20. Do you think that cadastral surveying should be done by Cadastre only?
21. Do you think that Cadastre should be in charge for technical verification of parceling?
22. Do you think that there are too many surveying companies at the market?
23. Do you think that charges of private surveying companies are too costly?
24. Do you think that fees attached to LR procedures are costly?

Appendix 3: CPI map for Europe 2009, source: www.transparency.org

**EUROPE - Corruption Perception Index**




Aida Custovic
GEM student