



ICUP2016

international
conference on
urban
planning

PROCEEDINGS

Serbia, Nis 18-19 november 2016

ISBN 978-86-88601-22-1

1st International Conference on Urban Planning - **ICUP2016**

Publisher

Faculty of Civil engineering and Architecture, University of Nis

For Publisher

Dean

Petar Mitkovic, PhD

Editor

Petar Mitkovic, PhD

Co-Editor

Milan Tanic, PhD

Text formatting, prepress and cover

Milan Brzakovic

Ana Curk

Vojislav Nikolic

ISBN 978-86-88601-22-1

Circulation

150 copies

Printing

Grafika Galeb Nis

1st International Conference on Urban Planning - **ICUP2016**

Is organized by

Faculty of Civil Engineering and Architecture, University of Nis
Urban Planning Cluster, Nis

Under patronage of the

GOVERNMENT OF THE REPUBLIC OF SERBIA MINISTRY OF EDUCATION,
SCIENCE AND TECHNOLOGICAL DEVELOPMENT



SCIENTIFIC PROGRAM COMMITTEE

Petar Mitkovic, PhD, Chairman, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Ljiljana Vasilevska, PhD, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Milena Dinic Brankovic, PhD, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Goran Jovanovic, PhD, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Aleksandar Kekovic, PhD, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Danica Stankovic, PhD, Faculty of Civil Engineering and Architecture, University of Nis, Serbia
Milan Tanic, PhD, Urban Planning Cluster, Serbia
Milica Bajic Brkovic, PhD, Faculty of Architecture, University of Belgrade, Serbia
Eva Vanista Lazarevic, Faculty of Architecture, University of Belgrade, Serbia
Aleksandra Djukic, PhD, Faculty of Architecture, University of Belgrade, Serbia
Jelena Zivkovic, PhD, Faculty of Architecture, University of Belgrade, Serbia
Mila Pucar, PhD, Institute of Architecture and Urban & Spatial Planning of Serbia
Igor Maric, PhD, Institute of Architecture and Urban & Spatial Planning of Serbia
Rajica Mihajlovic, PhD, Faculty of Civil Engineering, University of Belgrade, Serbia
Paolo Scattoni, PhD, Sapienza Università di Roma, Italy
Grigor Doytchinov, PhD, Graz University of Technology, Austria
Demetrio Muñoz Gielen, PhD, Radboud University Nijmegen, Netherlands
Kishii Takayuki, College of Science and Technology, Department of Civil Engineering, Nihon University, Japan
Marie-Alice L'Heureux, PhD, School of Architecture, Design & Planning – Architecture Department, The University of Kansas, Lawrence, USA
Bonnie Johnson, PhD, School of Architecture, Design & Planning - Department of Urban Planning, The University of Kansas, Lawrence, USA
Серебряная Валентина Васильевна, PhD, Volgograd State University of Architecture and Civil Engineering, Russia
Птичникова Галина Александровна, PhD, Volgograd State University of Architecture and Civil Engineering, Russia
Pavle Krstic, PhD, Faculty of Architecture, University of Sarajevo, Bosnia and Herzegovina
Brankica Milojevic, PhD, Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka, Bosnia and Herzegovina
Aleksandra Miric, PhD, chercheur associé, Institut de recherche sur l'architecture antique, France
Ali A. Alraouf, PhD, Head of CB, Development, CB and Research Unit-QNMP, Research and Training, Ministry of urban planning, Doha, Qatar
Hossam Samir Ibrahim, PhD, Urban and Environmental Planning Expert, Deputy Team Leader - QNMP Group at Ministry of Municipality and Environment, Doha, Qatar
Zorica Nedovic –Budic, Professor Chair of Spatial Planning School of Geography, Planning and Environmental Policy University College Dublin
Cristian Suau, PhD, Studio Pop C.I.C., Glasgow, Scotland
Aida Nayer, Ph.D, Assistant Professor, Arch Dept., Effat University, Saudi Arabia

ORGANIZING COMMITTEE

Milan Tanic, PhD, Chairman
Tanja Obradovic
Milena Dinic Brankovic, PhD
Slavisa Kondic
Vojislav Nikolic
Vuk Milosevic
Milan Brzakovic
Milica Radosavljevic
Milja Penic
Marija Marinkovic
Ana Curk



CRITICAL STAGES FOR SUCCESSFUL IMPLEMENTATION OF LAND READJUSTMENT IN SERBIA

Mladen Soskic

Faculty of Civil Engineering Belgrade, Serbia
PhD., Teaching Assistant, mladens@qrf.bg.ac.rs

Rajica Mihajlovic

Faculty of Civil Engineering Belgrade, Serbia
PhD., Assistant Professor, rajica@qrf.bg.ac.rs

Stevan Marosan

Faculty of Civil Engineering Belgrade, Serbia
PhD., Assistant Professor, marosan@qrf.bg.ac.rs

Nenad Visnjevac

Faculty of Civil Engineering Belgrade, Serbia
Teaching Assistant, nvisnjevac@qrf.bg.ac.rs

ABSTRACT

The subject of the study in this paper is the use of land readjustment as an instrument for the implementation of urban plans in Serbia. The possibility of successful implementation of land readjustment depends on many factors that are specific to a particular society and a country: the current state of urban development, socio-economic relations, history, tradition, law, the legal system, economy, needs, natural characteristics, demographic characteristics, etc. Therefore, with the aim of the successful implementation of land readjustment in Serbia, it is necessary to perform a detailed analysis of all mentioned factors and identify the critical stages in the process which will provide proper decision-making in respect of the implementation of land readjustment. As critical phases, we identified: The analysis of urban plan adequacy, consideration of distribution criteria, consideration of the distribution of benefits from increased land value and public areas structure analysis. Each of these stages is further processed. The decisions that need to be made in order to achieve the best possible results of the implementation of land readjustment are presented.

Keywords: land readjustment; urban plans; distribution criteria; land evaluation.

1. INTRODUCTION

Land readjustment is a tool that has long been used in many countries of Europe and the world with the aim of urban development and the implementation of urban plans (Viitanen, 2000.). In Serbia, land readjustment is a new tool that has the potential to significantly contribute to solving the accumulated problems in the area of urban development (Soskic, 2016.).

Each country has a distinctive model that is adapted to certain conditions that are specific to that society (Larsson, 1997.). Among each other, they are significantly different, which is natural, given the specificity of each country in terms of socio-economic relations, history, tradition, the current state of urban development, legislation, legal system, economy, needs, natural characteristics etc.

In Serbia, land readjustment is a new tool to be introduced into the legal system and practice, and which is expected to bring about a significant contribution to the urban development of the country. Considering foreign experiences where land readjustment brings many benefits to landowners and local government (Sorensen, 1999.) it is reasonable to expect similar result in Serbia. The need to define the model is, therefore,

crucial. It is not possible to fully adopt a foreign model with minor changes because of a number of specificities that require a special approach to the problem. A comprehensive and analytical approach to defining the best models with respect to the basic principles of land readjustment is necessary. Basic principles of land readjustment are: providing areas for public purposes, providing appropriate parcel structures, realizing private interests and achieving the public interest.

The models of land readjustment must, on the one hand, rely on these basic principles, and on the other hand take into account all the factors that represent the characteristics of a particular country and society. All this must be integrated into a unique process that will significantly contribute to a better urban development.

This paper identifies key elements on which the way that land readjustment will be implemented depends and which, therefore, have a major impact on its final outcome. These elements are the outcome of a detailed analysis of the current situation in Serbia and the causes of such a state. The identification of those key elements was a part of much wider study that was conducted with a goal of development of new land readjustment models in the function of urban land development (Soskic, 2016.). The development of the land readjustment model included the setting up of the system of land readjustment process in which, on the basis of recognized parameters, optimal models were defined. By defining the technological process of land readjustment, preconditions were created for the recognition of the key stages of the process, in which, based on the analyzed criteria, decisions on the application of a particular model will be made. Based on the analysis, four activities that must be carried out during the process of land readjustment in Serbia with the aim of its successful implementation and maximization of results have been identified:

- Urban plan adequacy analysis;
- Consideration of distribution criteria;
- Consideration of the distribution of the benefits from the increased value of land;
- Public areas structure analysis.

2. URBAN PLAN ADEQUACY ANALYSIS

Since land readjustment is a tool for the implementation of urban plans, the assumption is that there is already an appropriate urban or spatial plan. The very procedure of the adoption of urban plans in our country is such that it does not always take into account all the parameters necessary for finding the most optimal solution. The adequacy of the solutions defined by the urban plan can be examined through the analysis of three factors:

- Determined factual situation;
- Wishes and possibilities of land owners;
- Applicability.

In the process of making the urban plan, current real estate cadastre data are available. The outdatedness of these data is a well-known weakness of the real estate data record system in Serbia. Designers who are working on the development of plan designs do not have the ability to update the real estate cadastre data but are forced to use the data official at that moment. On the other hand, in the process of land readjustment, the update of real estate cadastre is being done through the process of determining the factual situation. This gives an up to date picture of the land readjustment area both in terms of property rights over land and in terms of the factual situation on the ground. The situation registered in the process of determining the factual situation can be significantly different from the situation that was used in the preparation of the urban plan. The objective of the adequacy analysis of the existing urban plan, from the viewpoint of the established factual situation, is to determine the extent to which the factual situation affects the prescribed plan design. In other words, would the solutions defined by the urban plan differ if, at its creation, up-to-date data on the factual situation on the ground was used?

The participants of land readjustment (the land owners and holders of other property rights on the land) are a factor that can significantly influence the development of the observed area. In designing urban plans, stage of public inspection is obligatory. During this stage in the process of making plans all interested parties can provide comments and suggestions. Theoretically, this is a good solution but in practice, the system demonstrated certain weaknesses. The owners of land, in spite of the apparent motive, are not sufficiently involved in the process. The whole process is insufficiently approximated to those whom it concerns the most, so it often happens that they are not even informed that for the area an urban plan is adopted, and when they are, they do not realize the importance of active participation through stating remarks and proposals at

different stages. In the process of land readjustment, the participants are individually invited at different stages and are actively involved in the process. Furthermore, they can be organized through the association of participants that can represent their interests. All this together makes them activate and realize that taking active participation is primarily in their interest. The importance of active participation of landowners in the process of land readjustment is even greater if one takes into account one of the main characteristics of this process, being the preservation of the social structure. The preservation of social structure means that after the completion of the land readjustment process, the ownership structure of the area remains unchanged. This practically means that these same participants will be responsible for the construction and further development of that part of the construction land, so their features must be taken into account. In other words, it is purposeless to implement a plan design for which landowners have no options or interest. For example, it is illusory to envision the construction of buildings that structurally exceed the financial possibilities of landowners. The objective of the adequacy analysis of the existing urban plan, from the perspective of wishes and possibilities of landowners, is to determine to what extent these wishes and possibilities affect the solutions defined by the urban plan.

Another negative feature of certain urban plans in our country is the lack of applicability. A well-known fact is that one of the major problems in Serbia is the adoption of urban plans that are not enforceable in practice. Traditional urban plans are mostly static in nature. They are developed according to the scenario of slow urban growth and have no answer for the much more dynamic planning process in which priorities should be evaluated continuously, and the modification of these evaluations should be done continually, in the light of available resources. It is obvious that there is no implementation of urban plans and urban development in general if urban plans are not designed in a way that they can be implemented on the ground. In this sense, the adequacy analysis of the existing plan from the viewpoint of applicability serves as a kind of a plan design test. The applicability of the solutions defined by the urban plan is being re-evaluated from all aspects and an appropriate conclusion is drawn.

If at this stage of land readjustment, on the basis of the adequacy analysis, it is concluded that the urban plan is inadequate, its modification must be approached. The modification of the plan design is performed according to the prescribed legal procedure. In this procedure, the data obtained in the already completed stages of land readjustment, and especially data determining the factual situation, are used in order to develop a meaningful and implementable urban plan.

Figure 1 shows an example of a land readjustment area with planned building rules for individual blocks. Left in the figure are land use and building rules in accordance with the general regulation plan and right are modifications arising from the adequacy analysis of the urban plan. Block 4 was too large for the planned sizes of plots and land ownership which was established by determining the factual situation and was divided into three smaller blocks. Block 7, which was intended for the commercial-shopping complex was changed to "moderate density housing in an urban area." The reason for this is the existence of residential buildings within it, and the existence of two more blocks with a commercial purpose in the same area of land readjustment, which is rated as satisfactory.

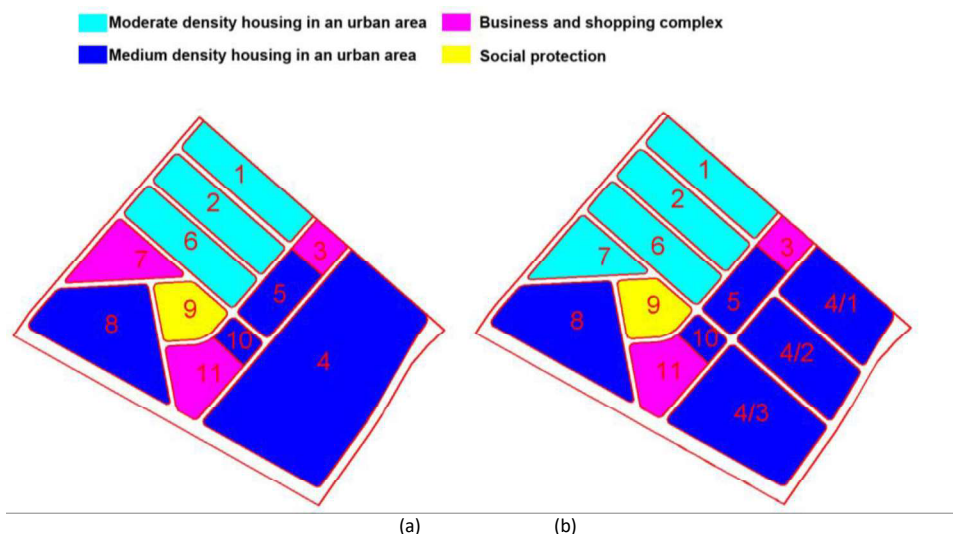


Figure 1: (a) Official urban plan, and (b) Modifications of urban plan (Soskic, M. et al.)

3. CONSIDERATION OF DISTRIBUTION CRITERIA

Distribution of new plots to participants of land readjustment can be carried out according to the area criterion or value criterion. The distribution according to the area criterion means that each participant gets a part of the redistribution mass that is proportional to the area of his included land. The distribution according to the value criterion means that each participant gets a part of the redistribution mass that is proportional to the entered value. The area criterion is applied in cases where the land on the land readjustment area, prior to the implementation of land readjustment, was homogeneous in terms of value and when the corresponding urban plan provides a homogeneous value of the land after its implementation. The value criterion is applied in cases where the land on the land readjustment area was not homogeneous in terms of value prior to or after the implementation of the urban plan. It is obvious that the decision on which criteria will be applied depends on the land evaluation.

A valid question that arises when choosing the method of distribution is an issue of equity. In the case of a distribution by the value criterion, there is a seemingly equitable procedure as it accurately calculates the value of each plot obtained in relation to the entered one. On the other hand, with the distribution by the area criterion, the participants are distributed in proportion to the area of the land which they have entered, and which may be different in terms of value within the value homogeneity of the land readjustment area. Namely, when selecting the method of distribution, the essential norm for the selection of the distribution by area criterion is the homogeneity of the land value on land readjustment area. No matter how much the land is homogeneous, there is a certain tolerance of value difference in the whole area. The main question that arises here is: "What is the land value homogeneity limit to choose the method of distribution by area criterion?" To answer this question it is necessary to take into account the reliability of land evaluation. Since it is "evaluation" rather than "determination", it is clear that the evaluation of real estate carries with it a certain error or unreliability. With this in mind, it can be concluded that the distribution by the area criterion works in cases where the unevenness of the land values on the land readjustment area is less than evaluation error.

In order to make the land evaluation reliable, it is essential that there is a developed real estate market. For Serbia, unfortunately, we cannot say that it is a country where there is a developed real estate market. The inevitable result of such underdevelopment of real estate market is, to a large extent, the reduced reliability of real estate evaluation. Thereby, the probability of selecting the method of distribution by area criterion increases. It can be concluded that, in such circumstances, the degree of equity of this type of distribution increases.

From the above, it can be seen how important a decision as to which criterion of distribution is used in particular land readjustment project is. First, all plots on the land readjustment area must be evaluated while, at the same time, the reliability of such evaluation must be assessed. What the reliability will be, depends on both micro and macro location of the specific land readjustment area, or the degree of the development of the real estate market in comparable locations. Depending on these analyses, a decision on choosing the method of distribution shall be made. It is expected that a large percentage of land readjustment projects in Serbia will be implemented by choosing the distribution by the area criterion at least in the near future until the real estate market experiences a significant level of development. Once the distribution criterion is chosen, the process of parcel distribution itself can be carried out by using various ways, for example optimization of land distribution (Mihajlovic et al 2011.).

Figure 2 shows an example of land readjustment area. The value of land in certain blocks after land readjustment in accordance with their purpose and building rules is presented. In this case, it is quite obvious that on the basis of land evaluation data, the distribution according to the criterion of value must be selected due to large differences in land values after the implementation of the urban plan.

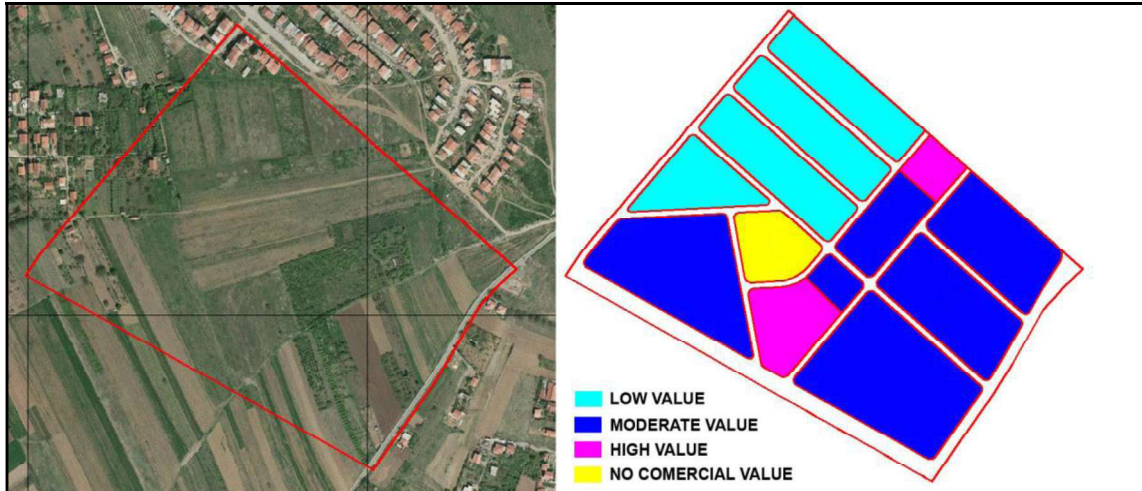


Figure 2: Value of land after the plan implementation (Soskic et al.)

4. CONSIDERATION OF DISTRIBUTION OF BENEFITS FROM LAND VALUE INCREASE

One of the main characteristics of land readjustment is land value increase. The land that was used for other purposes, and that had no plot structure that fulfils the urban criteria for construction, is transformed into construction land with formed building plots. The increase in the value of land per unit area is evident, which represents a significant motivation for the implementation of land readjustment. The amount of increase in value depends on many factors, but it can be quite large. The important question is also who should benefit from the corresponding increase in value, landowners and local government.

The first option is that landowners benefit from the increase in the corresponding land value. In this case, the land distribution would be carried out after excluding the areas for public purposes by the criterion of value or area. Any profit from the increase in the value of the land would be proportionately distributed to the participants of land readjustment in proportion to their entered value or area. The process of land readjustment is, in this case, funded by the local government, and some form of compensation is the fact that the areas for public use would be excluded without paying compensation to the landowners. Landowners would still be obliged to pay land development fee, or the construction of infrastructure in accordance with applicable laws and regulations.

Another option is that the local government benefits from the increase in land value. Funds obtained that way would be used for financing the land readjustment process and construction of infrastructure. A model that would allow this is to grant the local government, from the redistribution mass, in addition to land for public purposes, a number of building plots. These building plots would be marketed and sold, and from these funds, the local self-government would fund the costs of the proceedings and the costs of utility equipping of the construction land. Landowners would, in that case, be exempt from paying the land development fee. This option is clearly better for the local government because it immediately gets the funding for the construction of infrastructure, which is certainly in its best interest. In the first version, it may take some time after the completion of the process of land readjustment for the landowners to pay the land development fee.

Which of the options will be used depends on several factors. One of the most important is the amount of increase in value. The basic principle of land readjustment is that participants cannot get a lower value than the one they entered. If the increase in value is not sufficient to fund the process and construction of infrastructure, it is obvious that the second option is not possible, at least not completely. Another important factor is the attitude of land owners. In the case of allocating a part of building plots for sale in order to finance construction of infrastructure, the landowner should give its consent. Such solutions should not be imposed, with the aim of preserving the democracy and transparency of the whole process of land readjustment. There may be a combination of these two variants where only the part of the costs of infrastructure construction would be settled by the sale of a certain part of the land on the market, and the other part through the payment of land development fee.

When applying the second option, where the benefit from the increase in the value of the land belongs to the local government, it is required to promptly sell these plots on the market in order to provide funds to build

infrastructure. It is possible that the realized market price is significantly different than the estimated one in the process of land readjustment due to significant changes in the circumstances on the real estate market caused by unforeseen events. Since the land evaluation in the land readjustment is done on a certain date, it is something that could not have been taken into account and the procedure for the sale continues nevertheless. The risk, in this case, is taken by the local government and it will, in the case of a significant drop in prices, have to fund the difference from its own source.

5. PUBLIC AREAS STRUCTURE ANALYSIS

Public areas are, in land readjustment, excluded free of charge, which means that the owners of the land do not receive any compensation. As already mentioned, they are being compensated in a manner that increases the value of their land. In addition, these public areas are intended primarily for the use by the participants of land readjustment, or serve for the normal use of their possessions, therefore this also justifies their exclusion without compensation.

When on the land readjustment area the public use areas are planned not to be in the predominant function of the inhabitants of this land readjustment area but intended to meet the needs of a significantly wider area, it is necessary to find a fair solution for the separation of such areas. It would not be fair that the inhabitants of only a smaller part of the settlement give up their possessions in order to meet the needs of other parts of the same settlement. Public areas, provided by the relevant urban plan, which serve a wider area than that on which the land readjustment is being implemented, can be: schools, preschools, health institution, main streets (the streets that serve to connect other settlements or parts of settlements), sport and recreation courts, etc.

Those public areas would, in the event that urban readjustment is not being implemented, be allocated probably by expropriation or some similar measure. Since land readjustment does not imply the expropriation as its integral part, and bearing in mind the obligation to implement the plan design, it is possible to find a compromise solution. Such a solution must involve respect for the rights of landowners, but also the obligation to implement the plan. Public areas would, in such cases, be separated in the cadastre and on the ground in separate plots but the right of ownership of them would be retained by land readjustment participants. Shares in ideal parts ownership would be proportional to the value or the area which these participants entered in land readjustment mass. In this way, new plots of land for public use would be created in accordance with the urban plan but the property rights would not be transferred to the state. At a future time, when the conditions to expropriate these areas by the state are met, the owners would be paid compensation proportionate to their shares in the property, in accordance with the rules and regulations that apply for land expropriation.

Public areas structure analysis is, therefore, necessary to make the assessment of whether the areas of public use, which will serve a much wider area, exist and to which extent. It is necessary to separate such areas from those that serve primarily the inhabitants of the land readjustment area because they will be treated differently. On these assessment depends which course will be taken in further stages of the process of land readjustment, primarily on the part of land readjustment design that refers to the subdivision of the parcels.

Figure 1 shows an example of a land readjustment area with the planned land use and building rules. Planned land use of block 9 is "social protection". Specifically, a home for children with disabilities is planned. Obviously, the facility will serve a much larger area than the land readjustment area, so the decision was made to exclude the needed area into a separate parcel, but the property right would be kept by the land readjustment participants with ideal parts of the ownership proportional to the value that these participants entered in the land readjustment.

6. CONCLUSION

The introduction of the new tool which should contribute to the urban development of settlements and foremost the implementation of urban plans is a complex task. It is necessary to analyze in detail all aspects of the problems that a specific country currently faces (in this case Serbia) and at the same time adhere to the basic principles such a tool as land readjustment involves: providing areas for public purposes, providing appropriate plot structures, realizing private interests and realizing the public interest.

The paper recognizes the elements on which the way land readjustment will be implemented depends and which, therefore, have a major impact on its final outcome. The analysis and appropriate decision making are groundbreaking stages of land readjustment. For decision-making in described crucial stages of the process, it

is necessary to engage all profiles of professionals involved in the procedure: urban planners, surveyors, lawyers, experts for the real estate evaluation as well as land readjustment participants.

The importance of proper decision-making is even greater if one takes into account the risk that the introduction of an entirely new tool brings. At the beginning of the implementation of land readjustment, its transparency, efficiency, purposefulness and cost effectiveness must be ensured. If this does not happen, there is a real danger of compromising the land readjustment as a tool for urban development. This would mean at the same time losing confidence primarily by decision-makers (local authorities) and potential land readjustment participants (landowners), which would discredit urban readjustment and lead to it not being implemented, if not forever, at least in a mid-term future. Such scenarios are not unknown in certain countries which, because of the failure to recognize the significance of the analysis of local characteristics and their implementation in land readjustment model, lost the ability to use such a powerful tool.

REFERENCES

1. Larsson, G., (1997): Land readjustment: A tool for urban development. *Habitat International*, Volume 21, Issue 2, Pages 141-152, June 1997.
2. Mihajlovic, R., Miladinovic, M., Soskic, M., (2011): Optimization of Land Distribution in Urban Land Consolidation. Professional practice and education in geodesy and related fields. International scientific conference and XXIV meeting of Serbian Surveyors, 24-26 June 2011, Kladovo, upon Danube, Serbia. Proceedings: ISBN 978-86-7518-135-4 pp. 60-69.
3. Sorensen, A., (1999): Land Readjustment, Urban Planning and Urban Sprawl in Tokyo Metropolitan Area. *Urban Studies*, Volume 36/13 - 1999, Elsevier Science Ltd., London, pp. 2333-2360.
4. Soskic, M., (2016.): Development on new land readjustment models in the function of urban land development. Ph.D. thesis, Faculty of Civil Engineering, University of Belgrade, Belgrade 2016.
5. Viitanen, K., (2000): The Finnish Urban Land Readjustment Procedure in an International Context. Ph.D. thesis, Royal Institute of Technology, Real Estate and Construction Management, Real Estate Planning and Land Law. (In Swedish with a summary in English), Publication 4:84, 397 pages, Stockholm 2000