



CapaCity Workshop

Land Information Systems in the Danube Region
Quality of Data & Access to the Public

Workshop Report

0.1.

June 12-13, Belgrade (Serbia)

In Partnership with:



a format of



in
cooperation
with



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1 Executive Summary

Efficient land register and cadastre structures are preconditions for legal security and the prevention of corruption. In the Danube Region land register and cadastre structures have been continuously developed and / or improved during the last decades. Although constraints and legal regulations are different they are comparable. Also the used systems are similar but vary in administration and responsibilities of state bodies (public authorities, courts) involved. In some countries administration is centralized in others it is handled by regional bodies. More often licensed private firms get involved. In several countries public authorities have to certify the results of licensed surveyors in others not. Land register and cadastre is organized either as one hand system (e.g. Romania, Czech Republic and Serbia) or as separated system (e.g. Austria, Bulgaria and Croatia). In most of the countries there is a coordinated electronical exchange between land register and cadastre or they are linked technically via an integrated database.

However, there are still challenges to overcome. The quality of data and the public access to land register and cadastre have been identified as most relevant for improvement at a workshop in Vienna in October 2016. Therefore a follow up workshop within the Viennese CapaCity program was organised.

The workshop took place in Belgrade from June 12-13, 2017 and contributed to a series of activities on land register and cadastre PA 10 of the EU Strategy for the Danube Region has started in order to support and strengthen the respective capacities in the countries concerned. The workshop was carried out by the KDZ-Centre for Public Administration Research together with the Standing Conference of Towns and Municipalities of Serbia (SCTM) as host organisation and in close partnership with PA 10. In total 19 experts and representatives from the local, regional and national level of Moldova, Romania, Serbia and Austria dealing with land register, cadastre and / or open data participated in the workshop.

Based on the main findings of the October workshop in Vienna, the CapaCity workshop in Belgrade on the one hand provided recent developments of land register and cadastre structures in the Danube Region, focusing on the countries Moldova, Serbia and Romania. On the other hand input for improvement of data quality and public access to land register and cadastre were given by stressing the issues of open government and open data and their relevance for land information systems. Thus the workshop showed that:

- Open data is very essential for land register management and cadastre in order to prevent misuse.
- Spatial data in particular is crucial for monitoring and fostering innovation. Therefore it should be easily found and made available at the right level of governance.
- Public administrations should not fear publishing data although legal and technical issues still are challenging. Furthermore the trust in community data should be increased and open

government partnerships should be strengthened or established by involving the relevant stakeholders.

- In order to develop the capacity on open government and open data in the Danube Region training and experience exchange are vital.
- Thus the impact of the EU Data Protection Directive (2016/680)¹ on open government data and open data needs to be further examined.

In this context and as contribution to the workshop findings the following activities are foreseen:

- Up-dating of the status quo paper on land register and cadastre structures in the Danube Region
- Establishing the PA 10 EUSDR website as information and contact platform for land register, cadastre and open data in the Danube Region
- Elaborating a common approach to open government and open data in the Danube Region by carrying out a follow up CapaCity workshop as first step. Emphasizing the EU-Data Protection Directive and its impact on open government data and open data the workshop should serve as platform both for exchanging experiences and knowledge on open data policies and legislation in the Danube Region and for discussing innovative open government and open data solutions. The workshop will take place in Bucharest from November 20-21, 2017 on the invitation of the National Agency for Cadastre and Land Registration of Romania (ANCPI) and in close cooperation with PA 10 of the EU Strategy for the Danube Region.

¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0680&from=EN>

2 Introduction

2.1 CapaCity – Urban Competences

The program **CapaCity – Urban Competences** pursues a more deepened international cooperation between the City of Vienna, its organizations and other cities. Several initiatives in the Danube region already have pushed forward cooperation and intensification of social and economic exchange between countries, regions and cities (f.i. the enlargement of the European Union in 2004 & 2007; the establishment of the European Strategy for the Danube Region), nevertheless the City of Vienna now focuses on the internationalization of organizations and companies in order to generate common project ideas. Integrated urban development as holistic smart city approach is the main aspect of future activities within the program **CapaCity**.

Intensified European integration is one aspect of the program, additionally the city of Vienna has been visited by rising numbers of delegations and municipal experts, who are interested in urban strategies and technologies applied in Vienna. **CapaCity** will build up on opportunities generated by this grand international interest and will strive after sustaining contacts and intensifying exchange with regard to urban technologies and strategies.

The following activities are designed within the project **CapaCity** in order to support Viennese companies and organisations to deepen internationalization and activities in CEE and SEE:

- Organization of workshops in selected cities and towns with participation of Vienna stakeholders. The main aim of these workshops is follow-up activities.
- Coordination and collection of statistics of visiting delegations and experts to Vienna organisations and companies with particular interest in Vienna urban solutions.
- Representation at events, relevant for smart city expert networks & cooperation ideas.
- Research on and collection of relevant challenges for future urban development with regard to important cross-border and transnational projects and attractive co-financing instruments.
- Development of project ideas, triggered by municipal expert exchange on the basis of organized workshops in **CapaCity** partner cities.

Diverse sectors and topics are relevant for workshops within **CapaCity** which are based on issues of the smart city Vienna framework strategy: radical resource preservation, innovations/new technologies, balanced quality of living. **CapaCity** is open for a variety of concrete topics, e.g. among others integration and diversity policies, PPPs (private-public partnerships) for cities and municipalities, urban mobility and transport planning, strategies for tourism development or urban development visions. The ruling principle of workshops is the mutual benefit for both the host city and the City of Vienna and its organizations

2.2 Workshop: Land Information Systems in the Danube Region: Quality of Data & Access to the Public

Within the framework of the CapaCity Program and in line with Activity 1² the KDZ-Centre for Public Administration Research carried out the Workshop “Land Information Systems in the Danube Region: Quality of Data & Access to the Public” in Belgrade (Republic of Serbia) from June 12-13, 2017. The workshop was developed and organized in close cooperation with the Standing Conference of Towns and Municipalities of Serbia (SCTM) and the Priority Area 10 “Stepping Up Institutional Capacity and Cooperation” (PA 10) of the EU Strategy for the Danube Region (EUSDR).

2.2.1 Workshop Partners

- The **KDZ Centre for Public Administration Research** (www.kdz.or.at) is a competence centre and knowledge platform for the public sector, co-founded in 1969 by the City of Vienna and the Austrian Association of Cities and Towns. It is a non-profit organization with its headquarters in Vienna and offers applied research, consultancy and training to the public sector. It works with local governments, regions and national governments across Europe. In this context the KDZ focuses on supporting the EU member states and neighbour countries in the fields of impact of the EU on local governments, EU-funding for the public sector, building administrative capacity, transparency and open government as well as quality management for the public sector (e.g. CAF).
- The **Standing Conference of Towns and Municipalities of Serbia** (www.skgo.org): The SCTM is an association of towns and municipalities in Serbia. Founded in 1953 and modelled in the tradition of national and international associations of local authorities around the world, SCTM is an organization dedicated to developing local self-government, advocating the interests of local authorities, strengthening their capacity to provide services to citizens and their mutual cooperation.
- The **PA 10 of the EUSDR** (www.danube-capacitycooperation.eu): The Priority Area 10 “Stepping Up Institutional Capacity and Cooperation” (PA 10) of the EU Strategy for the Danube Region (EUSDR) is coordinated jointly by the City of Vienna and the Centre for European Perspective (CEP) in Ljubljana. It deals mainly with four issues in order to fostering social, economic and territorial cohesion in the 14 countries of the Danube Region: capacity development, involvement of civil society as well as the local and regional levels, establishment of a city network and building new tools for innovative financing of EUSDR projects, including seed money.

² Organization of workshops in selected cities and towns with participation of Vienna stakeholders (1)

3 The study case

The countries in the Danube Region have put strong efforts in developing land register and cadastre over the last years. Due to the importance of high quality of land register and cadastre structures for legal security and the prevention of corruption, PA 10 of the EU Strategy for the Danube Region has started a series of activities in order to support and strengthen the capacities of land register and cadastre systems in the countries concerned. In this framework PA 10 together with the KDZ-Centre for Public Administration Research and the Austrian Federal Office of Metrology and Surveying (BEV) carried out the workshop “Land Register and Cadastre Structures in the Danube Region” in October 2016 in Vienna. The workshop aimed at providing transparency of the status quo of land register and cadastre in the countries of the Danube Region both by elaborating a joint understanding on land register and cadastre and identifying the main challenges for developing the single country systems. Thus data quality and access to the public were stated as the most relevant aspects for improvement. Therefore and since no Serbian expert on land register and cadastre could join the workshop in Vienna it was decided to organize a follow up workshop in Belgrade within the Viennese CapaCity Program.

The objectives of the workshop were:

- Giving an up-date of recent developments of land register and cadastre systems in the countries of the Danube Region
- Contributing to the improvement of data quality and public access to land register and cadastre, also highlighting the relevance for cities and municipalities
- Discussing challenges and potentials of open data in this context and
- Sounding out cooperation possibilities.

4 The workshop program and workshop format

Based on the results of the workshop held in October 2016 in Vienna and according to the requirements of the Standing Conference of Towns and Municipalities (SCTM) as host organisation in Belgrade the CapaCity Workshop focused on the following topics (see also workshop program in the annex):

- Standardization of land information systems
- Overview and current developments of land register and cadastre systems in single countries of the Danube Region
- Relevance of data quality and public access to land register and cadastre systems for cities and municipalities
- Land information systems and the question of Open Government and Open Data.

4.1 Methodology

In order to meet the needs of the target group the KDZ together with PA 10 of the EUSDR and the SCTM identified together the workshop topics and experts. For finalizing the agenda also participants from the October Workshop were involved in order to contribute to the country specific inputs on land register and cadastre. The identification and invitation of the participants was carried out by the KDZ strongly supported by the workshop partners. The workshop premises and technical equipment was provided by the SCTM.

The workshop consisted of three moderated workshop sessions. The setting of the first two sessions provided both presentations and discussions while the third was an open brainstorming session in order to sound out future cooperation. The main findings of each session introduced the subsequent session. A sum up with possible next steps closed the workshop.

Inputs and / or moderation were given by the following experts (see also workshop program):

Surname	Name	Insitution	City	Country
Danilovic	Klara	Standing Conference of Towns and Municipalities of Serbia (SCTM)	Belgrade	Serbia
Gligorijevic	Zaklina	Urban Planning Institute Belgrade	Belgrade	Serbia
Ilie	Codrina Maria	Board member of geo-spatial.org, the OSGeo Romanian Local Chapter	Bukarest	Romania
Kilibarda	Milan	Assistant Professor at the Department of Geodesy and Geoinformatics of the University of Belgrade	Belgrade	Serbia
Krunic	Nikola	Institute of Architecture and Urban & Spatial Planning of Serbia (IAUS)	Belgrade	Serbia
Paladi	Alexandru	Head of the Development Department of the State Enterprise Cadastru of Moldova	Chișinău	Moldova
Prorok	Thomas	Deputy Director of the KDZ-Centre for Public Administration Research	Vienna	Austria
Schantl	Alexandra	KDZ-Centre for Public Administration Research	Vienna	Austria
Schicker	Rudolf	PA 10 Coordinator of the EUSDR	Vienna	Austria
Spiroiu	Ileana	Deputy General Manager of the National Agency for Cadastre and Land Registration of Romania (ANCPI)	Bucharest	Romania
Taus	Mihail	National Agency for Cadastre and Land Registration of Romania (ANCPI)	Bucharest	Romania
Zivkovic	Ljiljana	Head of Unit for Territorial Development Information System in the Ministry of Construction, Transport and Infrastructure	Belgrade	Serbia

5 Workshop findings

The overall aim of the workshop was to provide expertise and knowledge exchange on the workshop topics to get an overview on recent developments in the field of land register and cadastre in the Danube Region while for the first time a direct link to open data and the provision of open government data was set.

Due to the fact that unfortunately the Austrian Federal Office of Metrology and Surveying (BEV) could not support the workshop as partner organisation because of numerous own mandatory events on European level the recruitment of a balanced participation group from all Danube Region countries was challenging. Regrettably also no geo data or open data expert from the City of Vienna was available for the workshop.

Nevertheless this did not affect useful findings and fruitful debates: on the one hand it opened the possibility to get a deep insight in the land register and cadastre system situation in Serbia and Belgrade, which were not present at the October workshop in Vienna. On the other hand intense discussions on potentials and challenges of open data and open government data could be envisaged that finally led to the decision of organizing a follow up workshop in Bucharest offered by the National Agency for Cadastre and Land Registration of Romania.

In total 19 experts and representatives from the local, regional and national level of Moldova, Romania, Serbia and Austria dealing with land register, cadastre and / or open data participated in the workshop (see participants' list in the Annex). For the local visibility SCTM and Eurocomm-PR Belgrade posted the workshop on Facebook:



5.1 Observations and analysis

A significant part of all information used by public authorities and exchanged with the public refers to specific locations. Its quality depends on the availability of spatial data, which is collected and linked (geo-referenced) to location, and then processed to derive the information.

The Danube Reference Data and Services Infrastructure can be seen as the test bed of the INSPIRE (Infrastructure for Spatial Information in the European Community)³ implementation. Lessons learned from the Danube Reference Data and Services Infrastructure are:

- There is a need for a common entry point in order to quickly gather the data coming from INSPIRE, and other sources as baseline information.
- Data sharing contributes to openness and transparency. This should include evaluating (open) data policies and the adoption and reuse of INSPIRE that can support a range of strategies' objectives.
- Sharing data is not only a legal obligation or a means to support policy implementation/evaluation but also a valuable resource for regions. Sharing it in standardised ways can lead to value-added products, including citizen participation in policy and value-added tourism applications.

A crucial source of data is land register and cadastre. In the Danube Region there are different approaches and speeds in this area. As for the approaches there are more open approaches versus less open approaches. However, in all Danube Region countries land register and cadastre is electronically documented and its improvement is an on-going process, not only referring to the land register and cadastre systems as a whole but also regarding data quality and data accessibility. Land register and cadastre (digital border cadastre) is also the basis of GIS (Geographic Information Systems) data on the needs of the cities (e.g. www.basemap.at).

In some of the Danube Region countries – especially in the Western Balkan countries and Moldova – the GIS data on local level is limited due to data restrictions from the national governments – national geodetic agencies have not been allowed to give the data to the local level. Thus the cities often have been forced to collect GIS data by themselves. The provided data quantity and quality highly depend on the available financial resources. With the accessibility to land register and cadastre data the situation is improving.

³ The INSPIRE Directive aims to create a European Union spatial data infrastructure for the purposes of EU environmental policies and / or activities which may have an impact on the environment as most environmental data, such as emission measurements, biodiversity observations, or environmental quality data is of a spatial nature.

Recent developments:

- Serbia / Belgrade:
 - The whole territory is documented in the land register and cadastre. Online access is provided and the National Geodetic Authority already is sharing data.
 - Citizens can check the own real estate by parcel number and address. The searching is linked to the personal ID.
 - As for GIS data the SCTM established a GIS municipality network.
 - Belgrade has its own GIS with GIS based solutions for smart applications (e.g. STRAWBERRY TREES) and for service delivery (e.g. BEOKOM Servis). The lack of openness and accurate data still hinders companies / start-ups to develop more spatial data based APPS.
- Romania:
 - Not all of the Romanian territory is registered yet. With the new national registration program (PNCCF 2015-2023), co-financed by the European Commission, systematic registration started in 2016.
 - The registration will cover 40 million parcels both from legal and private entities. Information from the private sector is checked by ANCPI having around 6000 surveyors involved in the project.
 - Challenging is the high fragmentation and restitution requests in urban areas. Although an own national agency was founded for restitution issues it is expected that litigations will continue also after the official close out of the restitution process in a few years.
- Moldova:
 - The current one hand system for land register and cadastre in Moldova will probably change to a divided system.
 - Moldova additionally has a cadastre on unit level (isolated premises from buildings) which is very unique (Chapter 3 of the land register structure: Units from buildings). In case of room changes within the apartment the owner need to inform the national cadastre agency in order to keep the cadastre up to date.

In the context of gathering land register and cadastre data the issue of illegal buildings was discussed. In Serbia actually 350 surveyors are dealing with the registration of illegal constructions. With financial support from the public administration (national and local level) the legalization of illegal construction (family houses, commercial objects, smaller amendments like balconies etc.) in Serbia

results very cheap and without penalty. For legalization there are several standards for security in order to not endanger the other buildings. Due to the huge amount of illegal constructions to be registered there is no time limitation of the legislation process from administrative side. The strategy of Belgrade is to register as many illegal constructions as possible and to connect them to the municipal sewage system etc. However, the problem of illegal construction affects land registry and cadastre structures in all Danube Region countries to a certain extend and is often related to social issues. Thus well-considered policies and measures according to the local situation are required.

Another important topic of the workshop was open data and open government data and its linkage to land register and cadastre. The provision of data quality and its public access is crucial for land register and cadastre and a precondition for transparency. Thus the workshop discussed sources of data, data processing and data protection. As for the origin of data and data access there are four main sources:

- Open government data
- Community data
- Research data
- Freemium data (e.g. Google maps)⁴

Crucial for the use and provision of data is its relevance. Community data does not cover everything but the data up-dates are quicker. Government data instead provides overall coverage but the periods of up-dating are normally longer. Although legal and technical issues still need to be clarified – there is no perfect data set – public administration should be more courageous in publishing data. The advantages normally outweigh the disadvantages. Overall data control cannot avoid harmful results from data using and / or data misuse. Statistics / data are used in different ways with different interpretation already. In Austria there is no regulation on open government data. There are mainly economic reasons for not providing free access to all government data (e.g. loss of income for the Austrian Federal Office of Metrology and Surveying). The quantity of open government data is primarily a cultural issue and always a decision for more or less open data.

In this regard, also the involvement of community data and open government partnerships were stressed. In general public administration should more rely on community data. Two examples were mentioned in this context:

- the historic building mapping in Romania where the public contributed to the correct localization of the buildings and

⁴ Freemium data is the provision of data services without data availability

- the Solar Radiation Project in Serbia where open street maps were used to elaborate the 3D-City Model as it was difficult to take the data from the cadastre.

Government partnerships are still the exception in the Danube Region.

5.2 Recommendations and elaboration of measures

Based on the topics discussed in the workshop the following conclusions were made:

- The countries in the Danube Region face similar challenges in land register and cadastre. It is worth to compile the information. The PA 10 EUSDR website could serve as platform, also for getting in contact with the relevant stakeholders.
- The discussion on land register and cadastre led to the topic of open data and open government data, another important issue in the Danube Region in order to guarantee transparency and to prevent corruption and misuse.
- Monitoring a city without data is impossible. GIS helps to overcome urban challenges and also supports communication with citizens.
- There is a growing demand from business and citizens to have access to high quality, interoperable and re-usable data to provide new services, in particular in the area of spatial data. The use of spatial data for urban, land-use, traffic planning etc. can unleash new innovation that respond to social needs such as reducing the negative impact on the environment.
- Data should be considered as reusable asset and made available at the right level of governance. It should also be easily found and accessed to maximize its potential. Therefore more cooperation between the relevant stakeholders (public administration – business – science –citizens) is crucial and open government partnerships should be strengthened or established.
- The experiences should be shared further and common solutions should be developed. Thus also open data policies and knowledge should be exchanged in the Danube Region. Common workshops should be carried out in order to promote open data on the one hand and to increase the capacity in this policy area on the other hand (education and training).
- To increase the quantity of open government data hazard data like flooding or earth quake data could be an area to start with.
- The lack of useful data and limited data sharing still hinders cross-border mapping (e.g. basemap for Romania, Serbia and Hungary).

- Legally the impact of the EU Data Protection Directive (2016/680)⁵ which has to be transposed into national law by 2018 needs to be further examined in order to get deep knowledge of the challenges and potentials for open government data and land register and cadastre.

5.3 Next Steps

As workshop results it has been agreed on the following next steps:

- The KDZ-Centre for Public Administration Research will update the overview on the status quo of land register and cadastre structures in the Danube Region following the workshop findings.
- The paper will be put on the PA 10 EUSDR website as first step for using the website as common exchange platform on land register, cadastre and open data in the Danube Region.
- A common approach to open government data and open data in the Danube Region should be elaborated. As kick-off event a follow up CapaCity workshop is planned:
 - The workshop will take place in Bucharest from November 20-21, 2017 on the invitation of the National Agency for Cadastre and Land Registration of Romania (ANCPI). It will emphasize the EU-Data Protection Directive and its impact on open government data and open data and thus contributing to capacity development in this field. The workshop aims at exchanging experiences and knowledge on open data policies and legislation in the Danube Region by involving all levels of public administration (EU, national, regional, local level) and relevant stakeholders from business, science and civil society. Furthermore it should serve as discussion platform for innovative open government and open data solutions. Thus the workshop might also be useful and interesting for the City of Vienna as an open government forerunner. It is planned to involve the relevant experts and departments of the City of Vienna (Processing and ICT Strategy, Municipal Department 14, MA 21 etc.).

⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0680&from=EN>

6 Annex

6.1 Agenda of the Workshop

6.2 List of participants

6.3 Presentations (ppts) of the workshop

6.4 Letter of Intent of the Standing Conference of Towns and Municipalities of Serbia (SCTM)



CapaCity Workshop

Land Information Systems in the Danube Region
Quality of Data & Access to the Public

Agenda

June, 12-13, 2017, Belgrade (Serbia)

In Partnership with:



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■ smart city agency
■ energy center
■ urban future hub

SMART CITY WIEN ■ international

in cooperation
with



Day 1, June 12, 2017, Belgrade

Location: Makedonska 22, 8th floor, 11000 Belgrade, Serbia

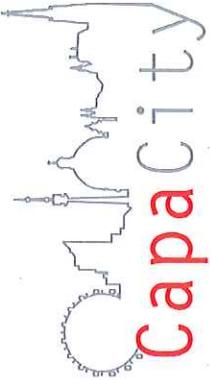
Time	Topic	Expert
WORKSHOP SESSION 1:		
Land Information Systems in the Danube Region in the Light of Standardization		
	Moderation: Klara Danilovic , SCTM	
09.30	Welcome Coffee and Get Together	
10.00	Welcome & Greetings	Klara Danilovic, Standing Conference of Towns and Municipalities of Serbia
10.15	Introduction to the Workshop - Presentation of the CapaCity Programme - Presentation of EUSDR	Thomas Prorok , Deputy Director of the KDZ Rudolf Schicker , PA 10 Coordinator of the EUSDR
10.30 – 11:45	Keynote: Danube Reference Data and Services Infrastructure (DRDSI) in the Danube Region Input & moderated discussion	Milan Kilibarda , Assistant Professor at the Department of Geodesy and Geoinformatics of the University of Belgrade
11.45 – 12.30	Land Information Systems in the Danube Region – the case of Serbia (World Bank Project) Input & QA-Session	Ljiljana Zivkovic , Head of Unit for Territorial Development Information System, Ministry of Construction, Transport and Infrastructure of Serbia
12.30	Lunch	
Land Information Systems in the Danube Region Overview and Current developments in single Countries		
13.30	Land Register and Cadastre Structures in the Danube Region Introduction based on the results of the Vienna Workshop	Thomas Prorok KDZ
14.00 – 14.30	Overview and Current Developments in Romania	Spiroiu Ileana & Mihail Taus National Agency for Cadastre and Land Registration of Romania
14.30 – 15.00	Overview and Current Developments in Moldova	Alexandru Paladi Head of the Development Department of the State Enterprise Cadastru of Moldova
15.00	Coffee Break	
15.30 – 16:00	Overview and Current Developments in Serbia	Nikola Krunic , IAUS – Institute of Architecture and Urban & Spatial Planning of Serbia
16.00	Discussion & Wrap up	Klara Danilovic , SCTM
17.00	End of the 1st WS Day	
19.00	Common Dinner at the Manufaktura Restaurant (Kralja Petra 13)	

Day 2, June 13, 2017, Belgrade

Location: Makedonska 22, 8th floor, 11000 Belgrade, Serbia

Time	Topic	Expert
WORKSHOP SESSION 2		
Quality of Data, Public Access to Land Register and Cadastre and Open Data		
Moderation: Alexandra Schantl, KDZ		
09.00	Wrap up of Day 1 and Introduction	
09.30 – 10.30	Quality of Data and Public Access to Land Register and Cadastre – relevance for Cities <ul style="list-style-type: none"> - Up-to date Data, data linkage and data collection, legal security, GIS data, public access Input & Moderated Discussion	Zaklina Gligorijevic, Urban Planning Institute Belgrade, Serbia
10.30 – 11.00	OpenStreetmap, Open Source GIS solutions and Open Data <ul style="list-style-type: none"> - The Geospatial Open Source Environment in its Current State - Open Government Data versus OpenStreetmap - Study Cases of Open Source Solutions used in Public administrations 	Codrina Maria Ilie Board member of geo-spatial.org, the OSGeo Romanian Local Chapter
11.00	Coffee Break	
11.30 – 12.00	OpenStreetmap, Open Source GIS solutions and Open Data QA-Session & Moderated Discussion	
12.00 – 13.00	OGD Implementation Model in the Public Sector Input & Moderated Discussion	Thomas Prorok KDZ
13.00	Lunch	
14.00	Presentation of results and conclusions of the Workshop Sessions	Alexandra Schantl KDZ
WORKSHOP SESSION 3: Towards a common project and further cooperation		
14.30 – 15.30	Brain Storming on topics and possible procedure	All participants
15.30	Sum up	Rudolf Schicker, PA 10, EUSDR
16.00	End of the Workshop	

- 1) PA 10 of the EUSDR:** Priority Area 10 "Stepping Up Institutional Capacity and Cooperation" (PA10) of the EU Strategy for the Danube Region (EUSDR) is coordinated jointly by the City of Vienna and the Centre for European Perspective (CEP) in Ljubljana. It deals mainly with four issues in order to fostering social, economic and territorial cohesion in the 14 countries of the Danube Region: capacity development, involvement of civil society as well as the local and regional levels, establishment of a city network and building new tools for innovative financing of EUSDR projects, including seed money. www.danube-capacitycooperation.eu
- 2) KDZ-Centre for Public Administration Research:** The KDZ was founded as a NPO in 1969, on the initiative of the Austrian Association of Cities, by the City of Vienna and the Bank Austria. In 1999 it was reshaped into the "KDZ - Centre for Public Management" (non-profit organization) and its subsidiary "KDZ - Management Consultancy and Professional Training Corporation" for market-related activities. www.kdz.eu
- 3) The Standing Conference of Towns and Municipalities of Serbia (SCTM):** The SCTM is an association of towns and municipalities in Serbia. Founded in 1953 and modeled in the tradition of national and international associations of local authorities around the world, SKGO is an organization dedicated to developing local self-government, advocating the interests of local authorities, strengthening their capacity to provide services to citizens and their mutual cooperation. www.skgo.org
- 4) TINA Vienna, Smart City Agency City Vienna:** Since 2012 the Smart City Agency of the City of Vienna is located at TINA Vienna. It supports the efforts of the city to reach its goals and to ensure a successful transformation. This includes a specific focus on research and technology policy in the city, as well as the active involvement of its residents, local industry, research and Viennese businesses in the Smart City Wien process. www.smartcity.wien.at



CapaCity Workshop

Land Information Systems in the Danube Region
Quality of Data & Access to the Public

List of participants

June 12-13, 2017, Belgrade / Serbia

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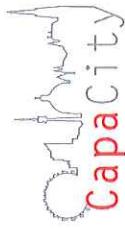


tinavienna
smart city agency
energy center
urban future hub

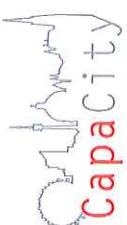


in cooperation
with

Nr.	Surname	Name	Function	Organisation	Contact Details
1	Rudolf	SCHICHT	PAC10	EISDR - ColV	Wol
2	Okt	Schweit	Chairman of Australian Assoc. of City & Towns	ÖStB, Aust-AUTIV	J Schek
3	Nicuš	Bogunović	HEAD OF OFFICE	EUROCOMM-PR LIAISON OFFICE OF THE CITY OF VIENNA	
4	Leselina	PELAGIC	FOUN (HEAD) DEVELOPMENT FOUNDATION	FDF	LELAGIC@GMAIL.COM Yon SAD
5	SINISA	TRKULJA	ADVISEE	MINISTRY OF TRANSPORT AND INFRASTRUCTURE	sini@ministarstvo.gov.rs
6	ILIE	COARINA	GEOSPATIAL Specialist	geo-spatial.org	coordin@geo-spatial.org



7	Yelena Kazarianovic	Katerina Kazarianovic	Project Officer	Cat Office in Belgrad	vesna.kazarianovic@coe-int. rs
8	KULIBA RDA	Milan prof.	Faculty of C.P. geodesy geoinformatics	Kuli kili@grf.bg.ac.rs	
9	KRUNIC Nikola	Research Associate	IATUS	nikola@iatus.ac.rs	
10	GJATIĆ Aleksandra	RESEARCHER	IATUS	gajic.aleksandra@gmail.com	
11	Bakić Olja	researcher	IPOS	olja@iicus.ac.rs	
12	Zivković Đorđević	Điljana	Leader of Unit for MGSI TDIS	điljana.zivkovic@mgsi.gov.rs	
13	Alexander Palao	Palao	Head of DDO SE Colosseum, SE Colosseum Molodove	St. Colosseum, Palao; alexander.palaoi@isc.cadzne.mil +337 69190355 m +337 22 22 2505 v	



Capacity

14	Mariusz Nowak - Director	Capri Gart - ANCPI Board	Mariusz. nowak@ancpi.no
15	Hanna Spiroux	DEPUTY GENERAL DIRECTOR AHCPI, TECHNICAL ASSISTANT BOOK	Hanna. Spiroux@ancpi.no.
16	Mihai TATIS	ROBATHA LAND REGISTRATION ASSOCIATIONS	mihai.tatis@gmail.com
17	Monika Schan	Paulok Expert	monika.lhdz@etf.edu.pl
18	Thomas Penzek	Reviewing Director	thomas.penzek@etf.edu.pl
19	Klara Dzialonka	Adviser for web, place	SK60 klara.dzialonka@etf.edu.pl
20			



Land Information Systems in the Danube Region
Quality of Data & Access to the Public

Introduction & Status Quo of Land Register and Cadastre Structures in the Danube Region

Thomas Prorok, KDZ

June 12-13, 2017, Belgrade

A format of

tina vienna
■ smart city agency
■ energy center

SMART
CITY
WIEN

H
international

In cooperation
with

K
D
Z
CENTRE FOR
ADMINISTRATION
RESEARCH

CapaCity – Urban Competences The Ambition



- The program **CapaCity – Urban Competences** pursues a more deepened international cooperation between the City of Vienna, its organizations, partner organization from Vienna and other cities.
- Integrated urban development as holistic smart city approach is the main aspect of future activities within the program **CapaCity**.

CapaCity – Workshop AGENDA

Day 1, June 12, 2017, Belgrade

Location: Makedonska 22, 8th floor, 11000 Belgrade, Serbia



Time	Topic	Expert
WORKSHOP SESSION 1:		
Land Information Systems in the Danube Region in the Light of Standardization		
Moderation: Klara Danilovic , SCTM		
09.30	Welcome Coffee and Get Together	Klara Danilovic, Standing Conference of Towns and Municipalities of Serbia
10.00	Welcome & Greetings	
10.15	Introduction to the Workshop - Presentation of the CapaCity Programme - Presentation of EUSDR	Thomas Prorok, Deputy Director of the KDZ Rudolf Schicker, PA 10 Coordinator of the EUSDR
10.30 – 11:45	Keynote: Danube Reference Data and Services Infrastructure (DRDSI) in the Danube Region Input & moderated discussion	Milan Kilibarda, Assistant Professor at the Department of Geodesy and Geoinformatics of the University of Belgrade
11.45 – 12.30	Land Information Systems in the Danube Region – the case of Serbia (World Bank Project) Input & QA-Session	Ljiljana Zivkovic, Head of Unit for Territorial Development Information System, Ministry of Construction, Transport and Infrastructure of Serbia
12.30	Lunch	
Land Information Systems in the Danube Region Overview and Current developments in single Countries		
13.30	Land Register and Cadastre Structures in the Danube Region Introduction based on the results of the Vienna Workshop	Thomas Prorok KDZ
14.00 – 14.30	Overview and Current Developments in Romania	Spiroiu Ileana & Mihail Taus National Agency for Cadastre and Land Registration of Romania
14.30 – 15.00	Overview and Current Developments in Moldova	Alexandru Paladi Head of the Development Department of the State Enterprise Cadastru of Moldova
15.00	Coffee Break	
15.30 – 16:00	Overview and Current Developments in Serbia	Nikola Krunic, IAUS – Institute of Architecture and Urban & Spatial Planning of Serbia
16.00	Discussion & Wrap up	Klara Danilovic, SCTM
17.00	End of the 1st WS Day	
19.00	Common Dinner at the Manufaktura Restaurant (Kralja Petra 13)	

09.06.2017

3

CapaCity – Workshop AGENDA

Day 2, June 13, 2017, Belgrade

Location: Makedonska 22, 8th floor, 11000 Belgrade, Serbia



Time	Topic	Expert
WORKSHOP SESSION 2		
Quality of Data, Public Access to Land Register and Cadastre and Open Data		
Moderation: Alexandra Schantl, KDZ		
09.00	Wrap up of Day 1 and Introduction	
09.30 – 10.30	Quality of Data and Public Access to Land Register and Cadastre – relevance for Cities - Up-to date Data, data linkage and data collection, legal security, GIS data, public access Input & Moderated Discussion	Zaklina Gligorijevic, Urban Planning Institute Belgrade, Serbia
10.30 – 11.00	OpenStreetmap, Open Source GIS solutions and Open Data - The Geospatial Open Source Environment in its Current State - Open Government Data versus OpenStreetmap - Study Cases of Open Source Solutions used in Public administrations	Codrina Maria Ilie Board member of geo-spatial.org, the OSGeo Romanian Local Chapter
11.00	Coffee Break	
11.30 – 12.00	OpenStreetmap, Open Source GIS solutions and Open Data QA-Session & Moderated Discussion	
12.00 – 13.00	OGD Implementation Model in the Public Sector Input & Moderated Discussion	Thomas Prorok KDZ
13.00	Lunch	
14.00	Presentation of results and conclusions of the Workshop Sessions	Alexandra Schantl KDZ
WORKSHOP SESSION 3:		
Towards a common project and further cooperation		
14.30 – 15.30	Brain Storming on topics and possible procedure	All participants
15.30	Sum up	Rudolf Schicker, PA 10, EUSDR
16.00	End of the Workshop	

09.06.2017

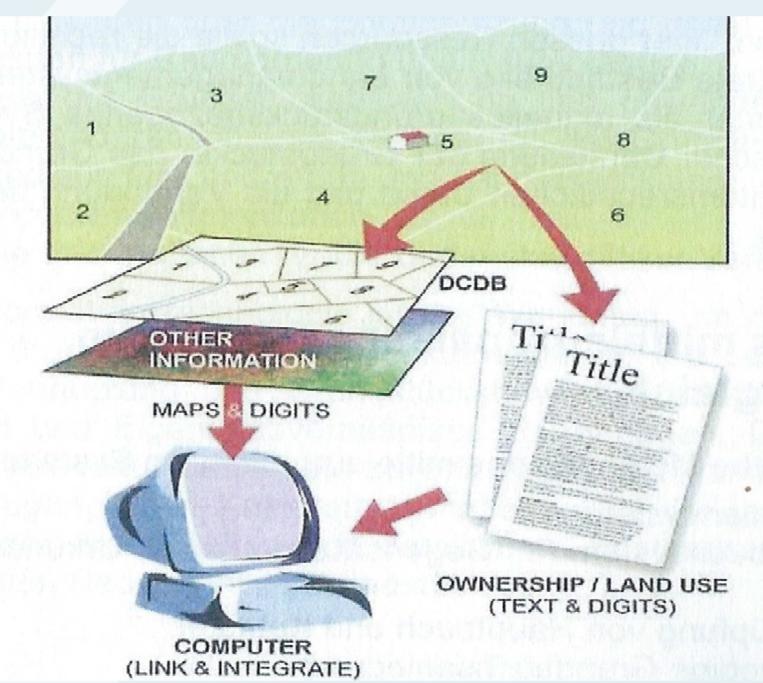
4

What has already be done?

- Workshop October 2016**
- Providing transparency of the status quo of land register and cadastre in the countries of the Danube Region**
- Elaborating a joint understanding on land register and cadastre**
- Initiating a network of practitioners and experts in this field**
- Sounding out cooperation possibilities and development potentials**

www.kdz.or.at

Basic Concept of Land Registration Systems



Source: Abart, Ernst, Twaroch: Der Grenzkataster, S.30.

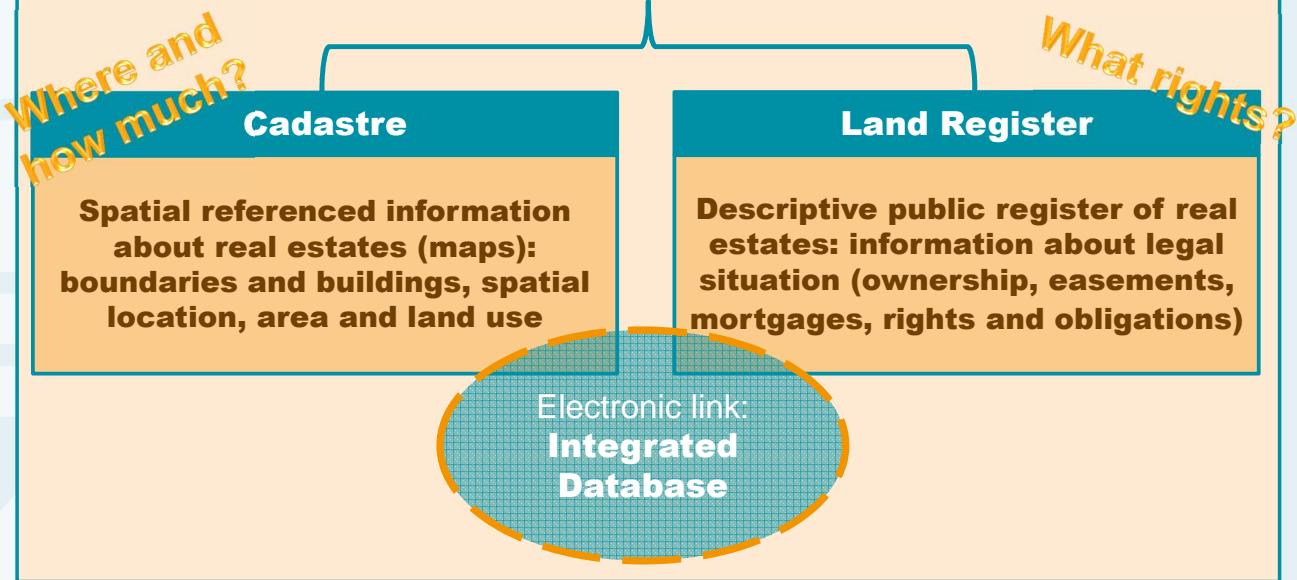
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Purpose

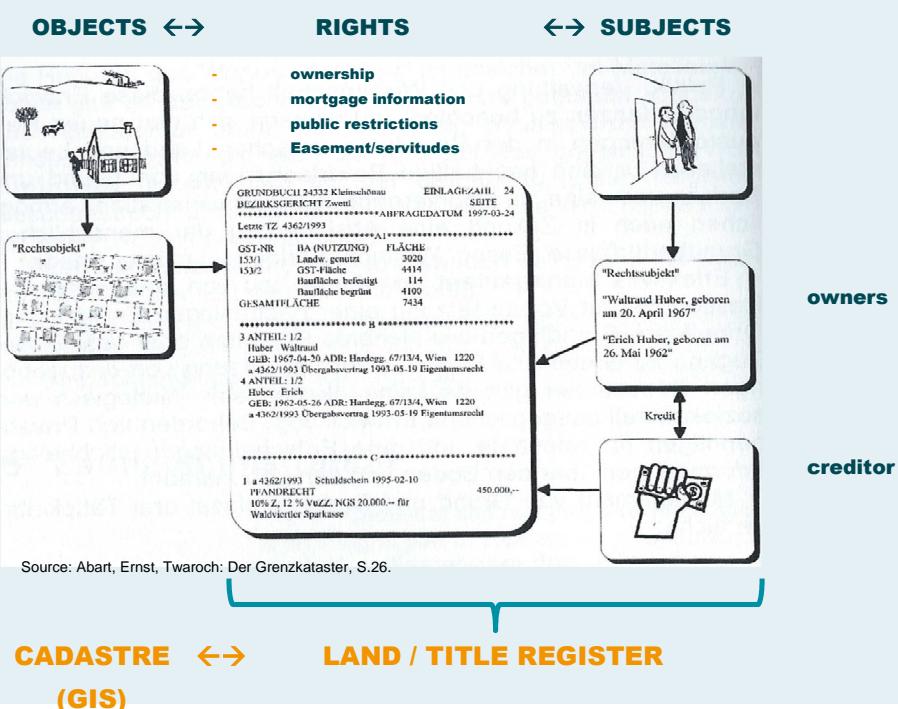
1. Basis for **taxation of land / real property**
2. **Protection of ownership**
 - Additional use: Planning and administration, environment protection, state subsidies ...

Definitions – Common Understanding

Land Registration System


www.kdz.or.at

Components of Land Registration Systems


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Overview Workshop October 2016

Country	Not participating	Participating	Participating & additional data
Austria			
Bosnia and Herzegovina			
Bulgaria			
Croatia			
Czech Republic			
Germany			
Hungary			
Moldova			
Montenegro			
Romania			
Serbia			
Slovakia			
Slovenia			
Ukraine			

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Land registration system of Austria

Indicator	Austria	
Basic informations		
type of land registration system	middle european system ("title")	
organisational system: one hand or separated organisations (organisational link)	separated	
Coordinated electronic exchange between cadastre and land register or integrated database (technical link)	Yes ("Grundstücksdatenbank")	
Homepage	www.bev.gv.at	
	Land Register	Cadastre
responsibility		
responsible governmental level	national	national
operating level	regional	national and regional
responsibility by law	Ministry of Justice	Ministry of Economy / Federal Office of Metrology and Surveying (BEV)
executive office	district courts	surveying offices (41)
queries	Ministry of Justice	Federal Office of Metrology and Surveying (BEV)
involvement of private parties: notary and advocate / surveyor	authentication of signature	surveying officer / engineering consultants
availability		
public access	Yes	
online access	Yes	
costs (fees)	Yes (queries)	
quality aspects		
nationwide uniform	Yes	Yes
area of land registered/state of digitalization	100%	100% Digitale Katastralmappe (DKM)
currentness of data/registers - update	constantly	constantly
main content and purpose		
www.kdz.or.at	mortgages, servitudes and other real rights	
registerable rights		

At a glance: System, Organisational Structure and Responsibilities

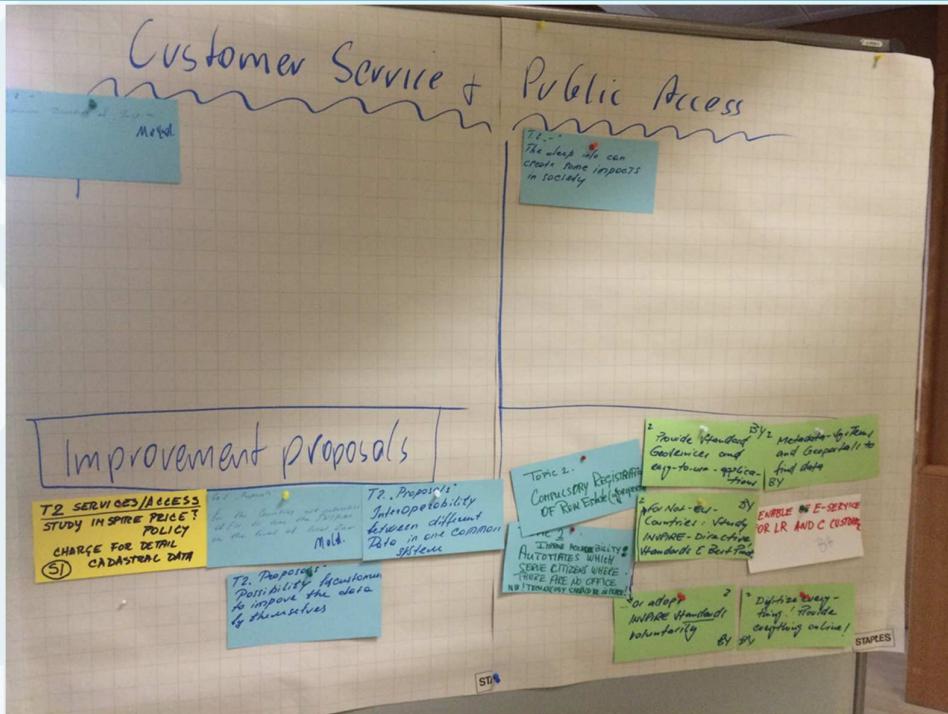
	System	Organisational structure	Responsibility by law (governmental level)		Operating level (implementation)	
			Land Register	Cadastre	Land Register	Cadastre
Austria	title registration	separated	national	national	regional	national and regional
Germany	title registration	separated	national	regional (Länder)	regional or local	regional or local
Czech Republic	title registration	one hand	national		regional	
Slovakia	title registration	one hand	national		regional	
Hungary	title registration	one hand	?		regional	
Croatia	title registration	separated	?	national	?	national and regional
Slovenia	title registration	separated	?	national	?	national and regional
Serbia	title registration	one hand	national		national and regional	
Bosnia and Herzegovina	title registration	one hand	?		?	
Montenegro	title registration	one hand	?		?	
Bulgaria	deeds registration	separated	national	national	regional	?
Romania	title registration	one hand	national		regional	
Moldova	deeds registration	one hand	national		national and regional	
Ukraine	title registration	one hand	national		regional or local	

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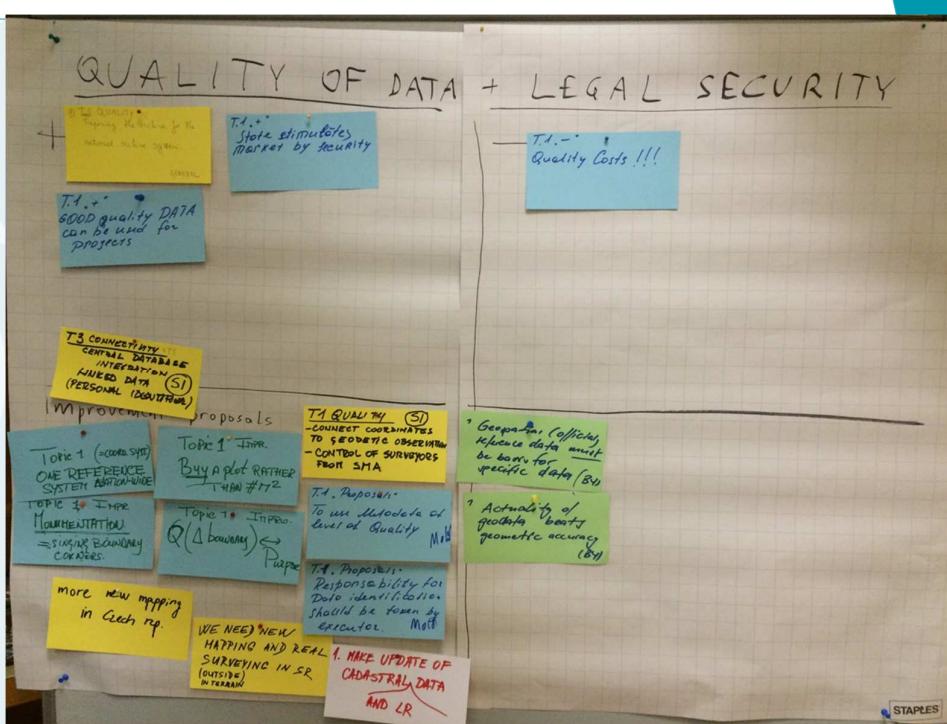
Availability

Availability	Austria	Germany	Czech Republic	Slovakia	Hungary	Croatia	Slovenia	Serbia	Bosnia and Herzegovina	Montenegro	Bulgaria	Romania	Moldova	Ukraine
Public access	Yes	Partly (only persons with legitimate interest)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes	?
Online access	Yes	No	Yes	Yes	Yes	Partly	Yes	No	Yes (Cadastre) Partly (Land Register)	?	No	?	Yes	?
Costs (Fees)	Yes (queries)	Yes (queries)	?	?	?	?	?	?	?	?	?	Yes	Partly	?

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Project Team

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CapaCity Workshop – Land Information Systems in the Danube Region

Rudolf Schicker, PAC 10 EUSDR, Vienna



Countries Participation

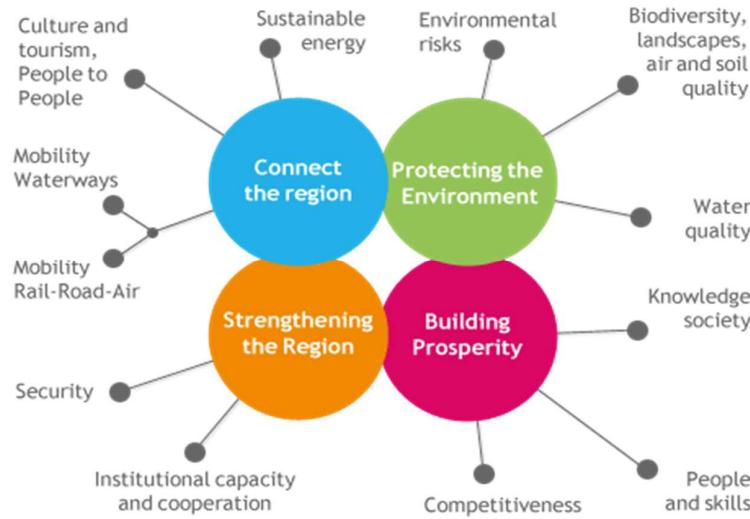
14 countries
9 EU-members
5 non members

>110 Mio. inhabitants

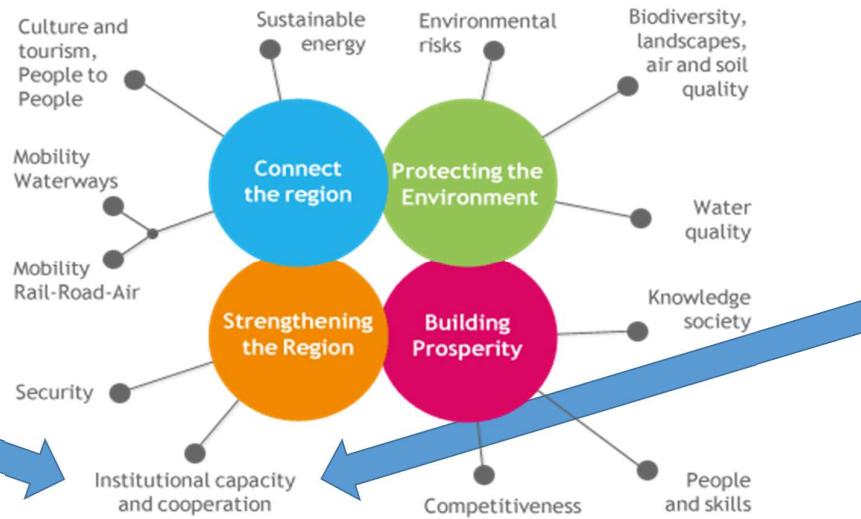
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Pillars and Priority Areas



Priority Area 10 is part of Pillar 4 „Strengthening the Region“

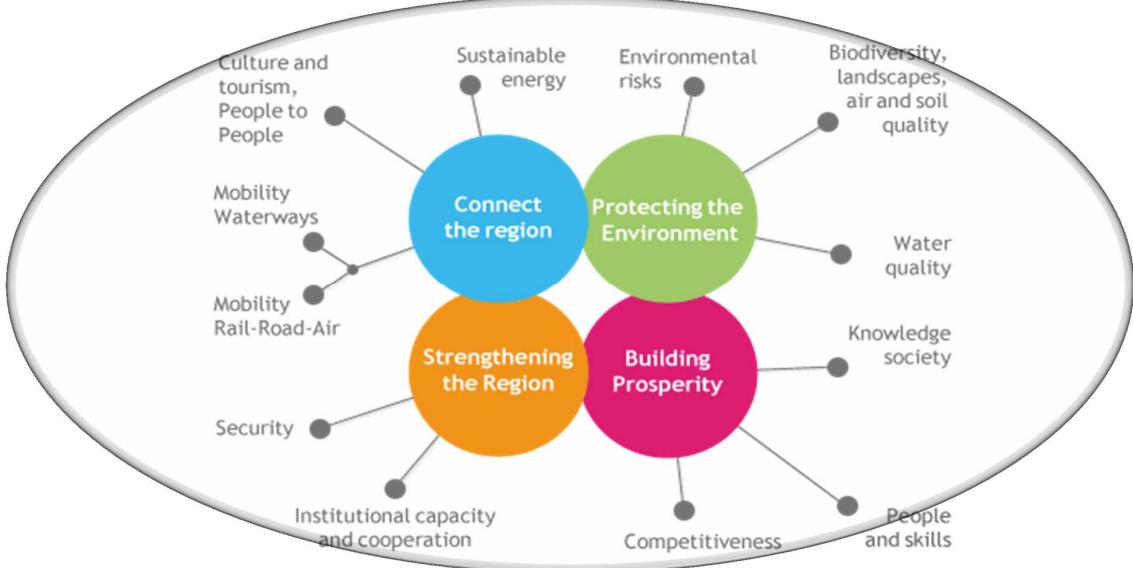


Cooperation and Capacity-building are the keys to better Living Conditions in the Danube Region

- Public management practices
- Cooperative structures catching the needs of citizens
- political and/or administrative reforms to build a smart, sustainable and inclusive Danube Region
- Involvement of civil society
- Strengthening governance through inclusion of stakeholders
- Unfold urban and regional potentials
- Foster territorial, social and economic cohesion

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PA 10 is a horizontal task



Priority Area 10 - Targets		Actions
according to EUSDR Action Plan 12/2010		
1	Improve ... government effectiveness, regulatory quality and control of corruption	To combat institutional capacity and public service related problems in the Danube Region.
2	...involve the national, regional and local authorities and Civil Society Organisations	To improve the trust of citizens and stakeholders in political authorities. To establish a Danube Civil Society Forum.
3	The <i>Urban Platform Danube Region</i> helps to generate ... cooperation on all levels ... furthering the aim of better spending	To build metropolitan regions in the Danube Region. To improve the trust of citizens and stakeholders in political authorities To facilitate the administrative cooperation of communities living in border regions To ensure sufficient information flow and exchange at all levels.
4	Increase the average absorption rate of EU funds in the Danube Region in comparison to 2007-2013 period	To review bottlenecks relating to the low absorption rate of EU funds and to ensure better coordination of funding. To support the development of local financial products for business and community development To examine the feasibility of Danube Investment framework.

Involving Stakeholders – Active in thematic platforms

- **Local Actors platform**
Civil Society Forum, Participation Days...
- **Urban Platform Danube Region**
Committee of Danube Cities and Regions, ARGE Donauländer
- **Capacity Development Platform**
- **Danube Innovative Financial Platform**

Publicity and Use of Informations about Real Estates

Digital Border Cadaster and Land Registry for Public Use

- During the last decades countries in the Danube Region have made great afford to implement a border cadaster.
- Constraints and legal regulations are different but comparable.
- The first seminar in Vienna resulted in a documentation about the methods used in the countries of the Danube Region.

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Publicity and Use of Informations about Real Estates

Digital Border Cadaster and Land Registry for Public Use

- The used systems are comparable in general, but are different in administration and responsibilities of state bodies (public authorities, courts).
- In some countries administration is centralized in others it is handled by regional bodies.
- More often licensed private firms get involved.
- In several countries public authorities have to certify the results of licensed surveyors in others not.

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Land Information Systems and Geographical Information Systems

Usually are based on digital border cadaster

Reference data are needed

GIS offer the opportunity of Open Government Data

Rules, Regulations, Accessibility, Mantainance.....?

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Welcome to **basemap.at** – the Austrian OGD basemap

You need an up-to-date basemap of Austria derived from administrative data? You are at the right place!

basemap.at is a high-performance web basemap published under an OpenGovernmentData (OGD) license. It is based upon data provided by the nine Austrian provinces and their partners.

basemap.at is based on geodata from:

- the nine Austrian provinces (geoland.at)
- the project GIP.at
- the cities: Wien, St. Pölten, Graz, Linz, Eisenstadt, Klagenfurt, Villach, Salzburg, Innsbruck, Bregenz, Bruck an der Mur
- the National Mapping Agency (BEV)

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Map products

Preview of all products in the [map viewer](#)



STANDARD



GRAY



OVERLAY



HIGH-DPI



ORTHOFOTO

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About the project

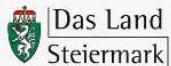
basemap.at is the result of a cooperation of the nine Austrian provinces ([geoland.at](#)), ITS Vienna Region ([GIP.at](#) operator), the University of Technology/Vienna and Synergis. The project is co-funded by the Climate and Energy Fund, within a program for innovation in green and efficient mobility.

2012 and 2013 the project team created the foundation for an open web map. 2014 it was published open to everybody. It is used for numerous administrative procedures, in addition, it is also available for private and commercial purposes according to the [Open Government Data conditions in Austria](#).

[basemap.at video \(Youtube\)](#) | [Folder \(PDF, 5mb\)](#)

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Partners



BURGENLAND



LAND KÄRNTEN



Associated partners



lebensministerium.at

Technology partners



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Underlying data

basemap.at is a cartographic product based on the administrative data of the nine Austrian provinces and their partners, especially the Austrian Association of Cities and Towns as well as GIP.at – a nationwide transport graph.

The map covers the entire Austrian territory. It is updated bi-monthly according to the data updates from the partners. The cartography as well as the underlying data are constantly updated and improved. Therefore, not only the map content, but also the cartographic presentation might change in the future.

You would like to use basemap.at in your own projects?

Please find the directions and terms of use below.

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Service Access

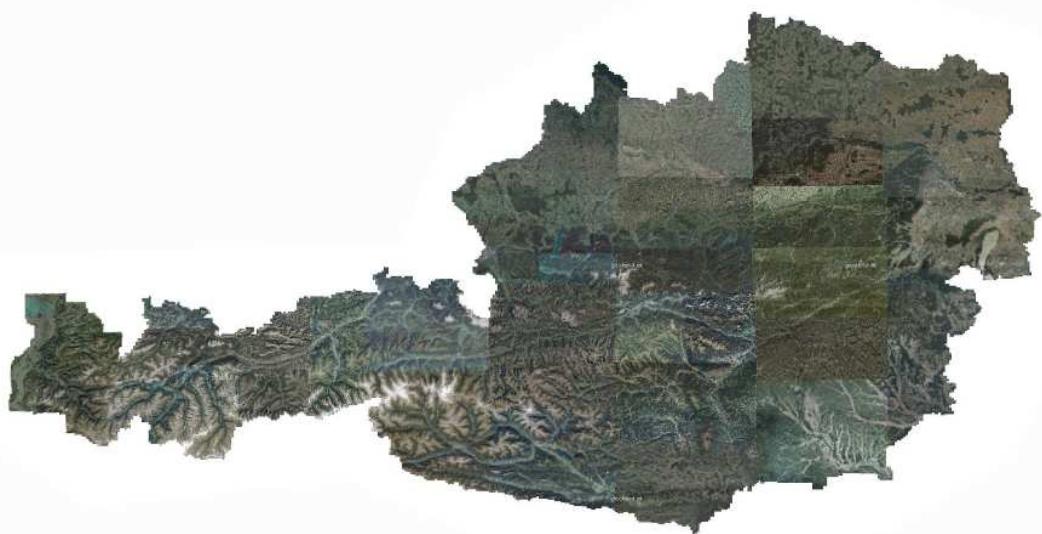
basemap.at offers pre-rendered, cached raster tiles in Web Mercator Auxiliary Sphere. They are compatible with well-established basemaps, such as OpenStreetMap, Google Maps and Bing Maps.

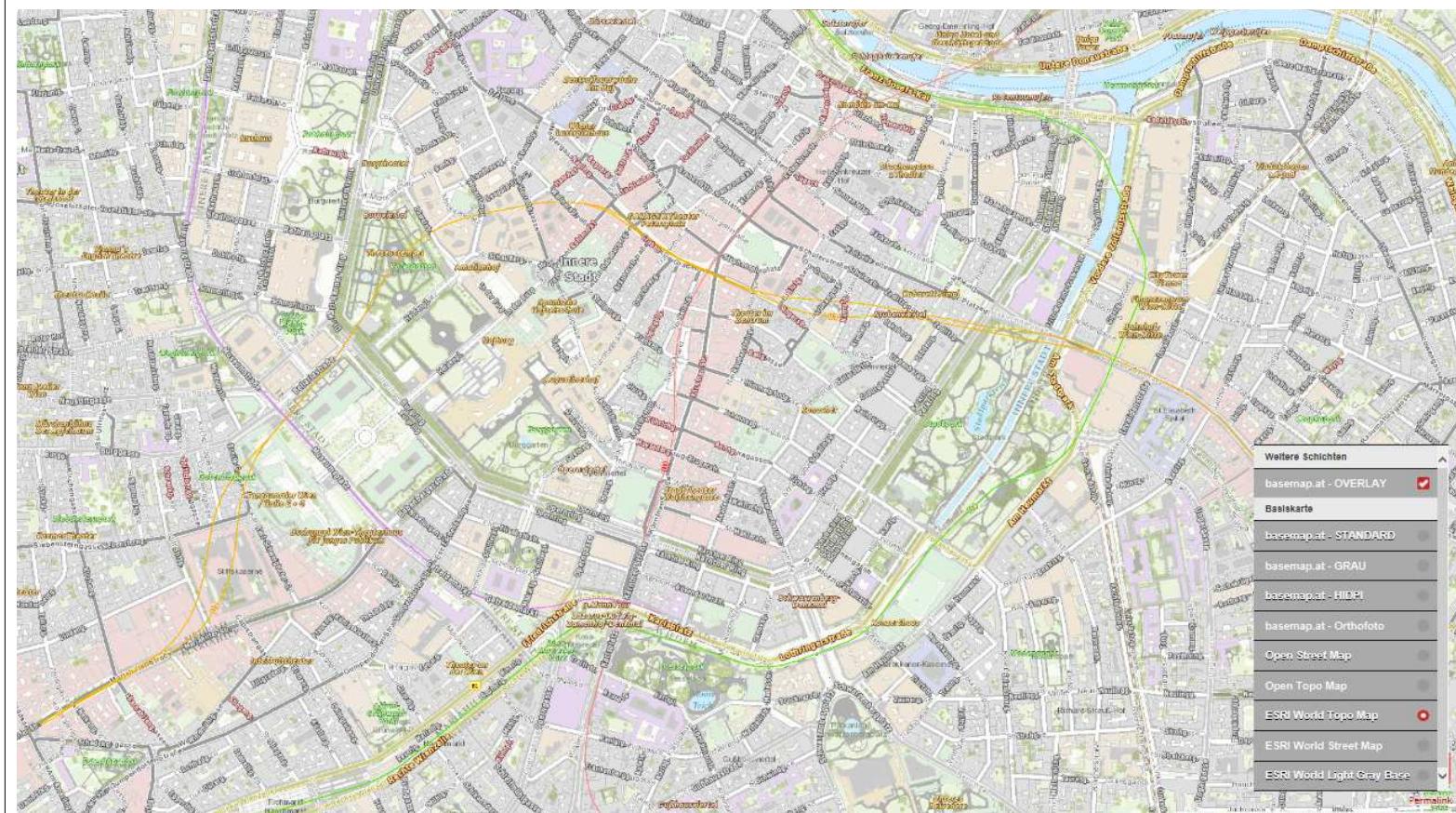
The service is available as [OpenGIS Web Map Tile Service 1.0.0 \(WMTS\)](#) according to the OGC Standard.

- **Interface:** [WMTS GetCapabilities](#) | [WMTS GetCapabilities](#) (especially for ArcGIS 10.1)
- **Meta data** (accessible on the Austrian OGD platform): [basemap.at map products](#) and [basemap.at Orthofoto](#)
- **Map viewer** for test purposes can be viewed [here](#)

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Thank you for your attention!

Priority Area 10 | Institutional Capacity and Cooperation

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www.danube-capacitycooperation.eu



With the financial support of the European Union



Danube Reference Data and Services Infrastructure (DRDSI) in the Danube Region

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University of Belgrade,

Faculty of Civil Engineering (<http://www.grf.bg.ac.rs>),

Department of geodesy and geoinformatics

Head of Laboratory for development of the open source geospatial technologies in Belgrade (<http://osgl.grf.bg.ac.rs/>)

Jean DUSART <jean.dusart@ec.europa.eu>

Scientific Project Officer

European Commission

Joint Research Centre

Belgrade, CapaCity Workshop, 12.06.2017.

Outlines

DRDSI project,

DRDSI Data management pilot in Serbia,

Services, data and metadata made by OSGL,

Example of services made for Serbian pilot at OSGL,

Access to metadata and services from Seismological Survey of Serbia at OSGL,

Questions.

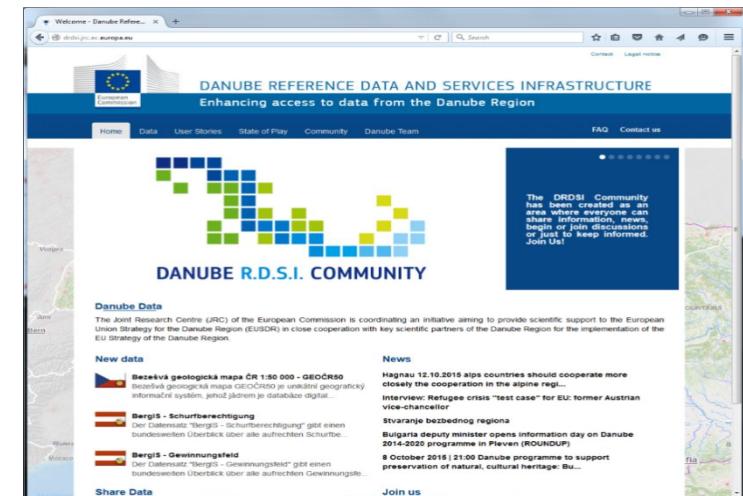
DRDSI in a nutshell

Video Link: <http://drdsi.jrc.ec.europa.eu/multimedia/drdsi.mp4>

“... set up or consolidate a sound monitoring system, with the support of the Commission and the ESPON programme, to report on progress and support their strategic orientation; the Danube Reference Data and Services Infrastructure can support the establishment of a sound monitoring system;”

Source: Report on the Implementation of EU Macro-Regional Strategies (COM(2016)805)

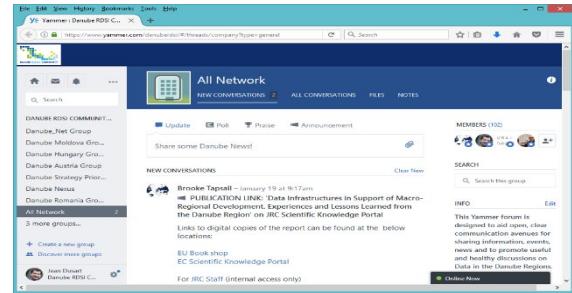
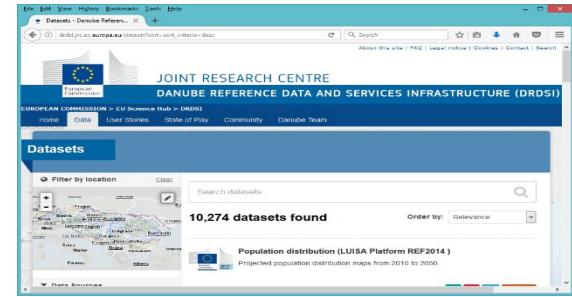
- **Search Engine and Metadata repository** for details about data, projects, applications... for the whole Danube Region from government authorities of the EUSDR MS (public data) and linked to the priorities of EUSDR
- **Openness and transparency** fostered through data sharing
- Test bed for **INSPIRE Directive implementation** (including pilots and apps)
- **Leverages** investments for data collection, harmonisation and access and generate value added services (for private actors and e-government services)
- **Network of experts (DANUBE_NET)** from each Danube country for local promotion, content generation and stakeholder engagement



<http://drdsi.jrc.ec.europa.eu>

DRDSI Content

- More than **10000** resources <http://drdsi.jrc.ec.europa.eu>
- Metadata about data issued by Research Projects, EC Institutions (EEA, Copernicus), surveyed by a network of representatives in each of the 14 countries of the EUSDR, or harvested from national Open Data platforms, INSPIRE portals, international organisations (ICPDR)
- User Stories combining resources from the platform around a story line
- State of Play of data infrastructures in all countries
- A Collaboration Space to share about data in the Danube



EUSDR Priority Areas

A Connecting the Region

- 1 Mobility and multimodality
- 2 Sustainable energy
- 3 Culture and tourism, People to People

B Protecting the Environment

- 4 Water and Quality
- 5 Environmental Risks
- 6 Biodiversity, landscapes, air and soil quality

C Building Prosperity

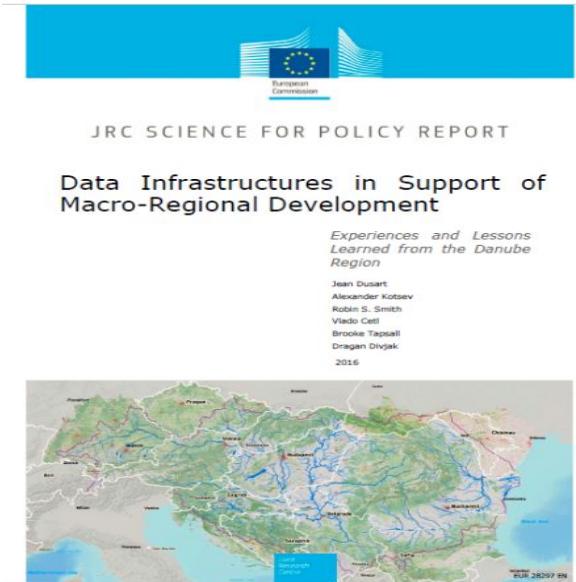
- 7 Knowledge Society
- 8 Competitiveness
- 9 People and skills

D Strengthening the Region

- 10 Institutional capacity and cooperation
- 11 Security

Figure 3 EUSDR Priority Areas

In addition, given its mainly technical focus, the work of the DRDSI was linked to Priority Area 7: Knowledge Society¹².



DRDSI and data policy initiatives

[Newsletter](#) | [FAQ](#) | [Search](#) | [Contact](#) | [Cookies](#) | [Legal notice](#) | [Login](#) | English (en) ▾



Search Portal



Modernisation of EC:

- Improving information retrieval and delivery
- Maximising use of data for better policy-making
- Working together and sharing information and knowledge
- Creating a culture of knowledge sharing and learning

Top five items are in European data portal:

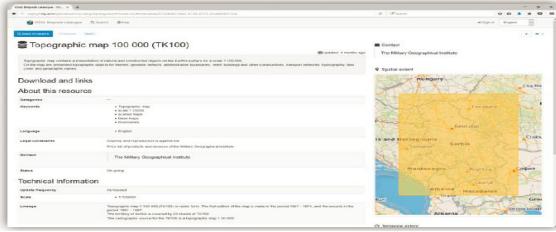
1. Geospatial data
2. Earth observation and environment
3. Transport data
4. Statistics
5. Companies

Better sharing of geospatial and statistical data coming from European-funded research activities should be more open, for both data and research publications, including the results from Horizon 2020 projects

A screenshot of the European Data Portal's dataset search interface. The search bar at the top contains the query "geo". Below the search bar, it displays "155,366 datasets found for \"geo\"". A dropdown menu indicates the results are ordered by "Last Modified". The main content area shows a map of Europe with a search input field and a "Filter by location" button. To the right of the map, there are three search results listed:

- dop20 dop20rgb_32532_6010_1_sh_2012,** GDI-DE | March 25, 2016. Description: The ortho-photo dop20rgb_32532_6010_1_sh_2012 was calculated using the DGM10. The aerial survey took place in 2012. The ortho-photo dop20rgb_32532_6010_1_sh_2012 issued by....
- In 325105980, things — friedrichshof, basis-landschaftsmodell (ATKIS ® —... ,** GDI-DE | March 23, 2016. Description: The set of 325105980 — and with the tile of the ATKIS ® — digital friedrichshof basis-landschaftsmodell (basis-dlm). The timeliness of the topography, 'date of production' and...
- dop20 dop20rgb_32642_6031_1_sh_2013,** GDI-DE | February 19, 2016. Description: The ortho-photo dop20rgb_32642_6031_1_sh_2013 was calculated using the DGM10. The aerial survey took place in 2013. The ortho-photo dop20rgb_32642_6031_1_sh_2013 issued by....
- dop20 dop20rgb_32614_5990_1_sh_2013,** GDI-DE | February 19, 2016. Description: The ortho-photo dop20rgb_32614_5990_1_sh_2013 was calculated using the DGM10. The aerial survey took place in 2013. The ortho-photo dop20rgb_32614_5990_1_sh_2013 issued by....

Pilot examples of impact



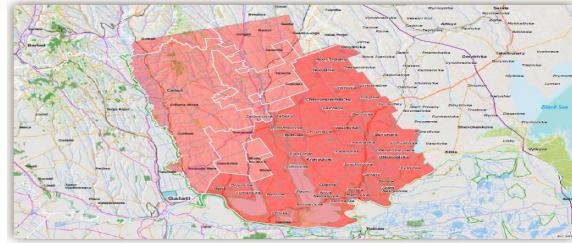
Infrastructure components (Serbian
Metadata catalogue local node)



Value-added applications
(Cultural herritage & environmental hazards)



Data Infrastructures in Support of
Macro-Regional Development



Cross-border Data Harmonisation (Moldova -
Ukraine)



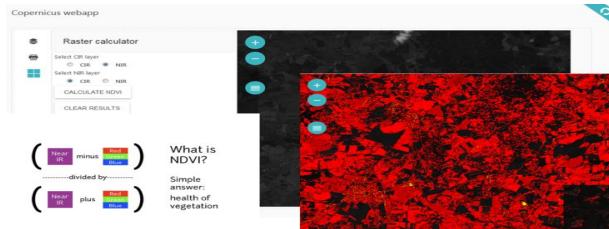
Citizen science
(Invasive Alien Species App)

DanubeHack.eu



Explore Your Urban Environment

#HugATreeOnYourWayHome



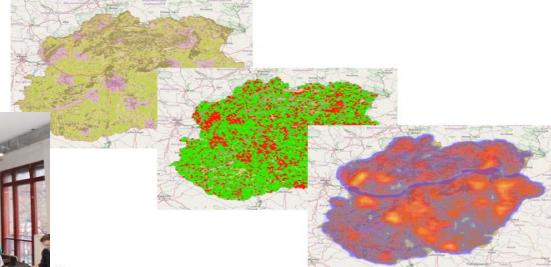
Copernicus WebApp

Copernicus data visualisation & calculation



Waste2Fuel

Biomass optimisation app



SDI4Apps Open Land Use Quality Viewer
(Quality of land use HILUCS categories)

Serbian pilot

is a member of "Geo for All"

"Mission for making geospatial education and opportunities accessible to all."

[Read more](#)

Laboratory for development of the open source geospatial technologies

The Department of Geodesy and Geoinformatics of the Faculty of Civil Engineering, University of Belgrade was actively using open source software in education of geodetic engineers at the undergraduate, graduate and PhD studies. A large number of bachelor, master's and doctoral thesis was created using open source software. Additionally, a significant number of scientific papers has also been published using open source software. The development of Laboratory for development of open source geospatial technologies - OSGL at the Department of Geodesy and Geoinformatics

Latest news

Apollo project

[project](#) [concept](#) [services](#) [pilots](#) [news & media](#) [contact](#)

BRINGING THE BENEFITS OF PRECISION AGRICULTURE TO SMALLHOLDER FARMERS IN EUROPE

Courses

- [GeoMLA](#) - Geostatistics and Machine Learning (Applications in



- [WorldDailyMeteo](#): space-time interpolation of daily meteorologica



- [R+OSGeo in higher education](#);
- [Prostorne analize u open source GIS okruženju](#);
- [A plotGoogleMaps tutorial](#). The plotGoogleMaps package provides:
- [Selected topics in spatial environmental modelling](#);

DRDSI Data management pilot in Serbia

Status of metadata and services in Serbia

Wide range of geodata producers and users:

ministries, governmental authorities and agencies, public enterprises, universities and institutes in charge of geo-science, urban-planning , local administration, GIS solution providers and private companies who produce location based services

Very limited access to any format of metadata.

No any CSW service established, so far.

Data management and
Value-added Applications
Workshop, Ispra, 22-23
February 2016

DRDSI Data management pilot in Serbia

The screenshot shows a web browser window with the URL osgl.grf.bg.ac.rs/geonetwork/srv/eng/catalog.search#/home. The browser interface includes standard navigation buttons (back, forward, search), a toolbar with icons for file operations, and a menu bar with 'Apps' and 'Bookmarks'. Below the toolbar, there's a user profile section with a blue globe icon, a search icon, and a sign-in button. The language is set to English.

Get started

Search over **171** data sets, services and maps, ...

Search ...



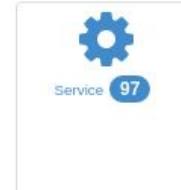
OSGL Data Portal

Here you will find data, services and maps and more.

Browse topics



Browse resources



Services, data and metadata made by OSGL

In collaboration with other stakeholders, OSGL provides maps and services based on open data from various sources, by using open source solutions.

CSW is implemented through Geonetwork.

OGC services through Geoserver.

Example of 3D client is made in Cesium.js

Population Distribution in Serbia for year 2006

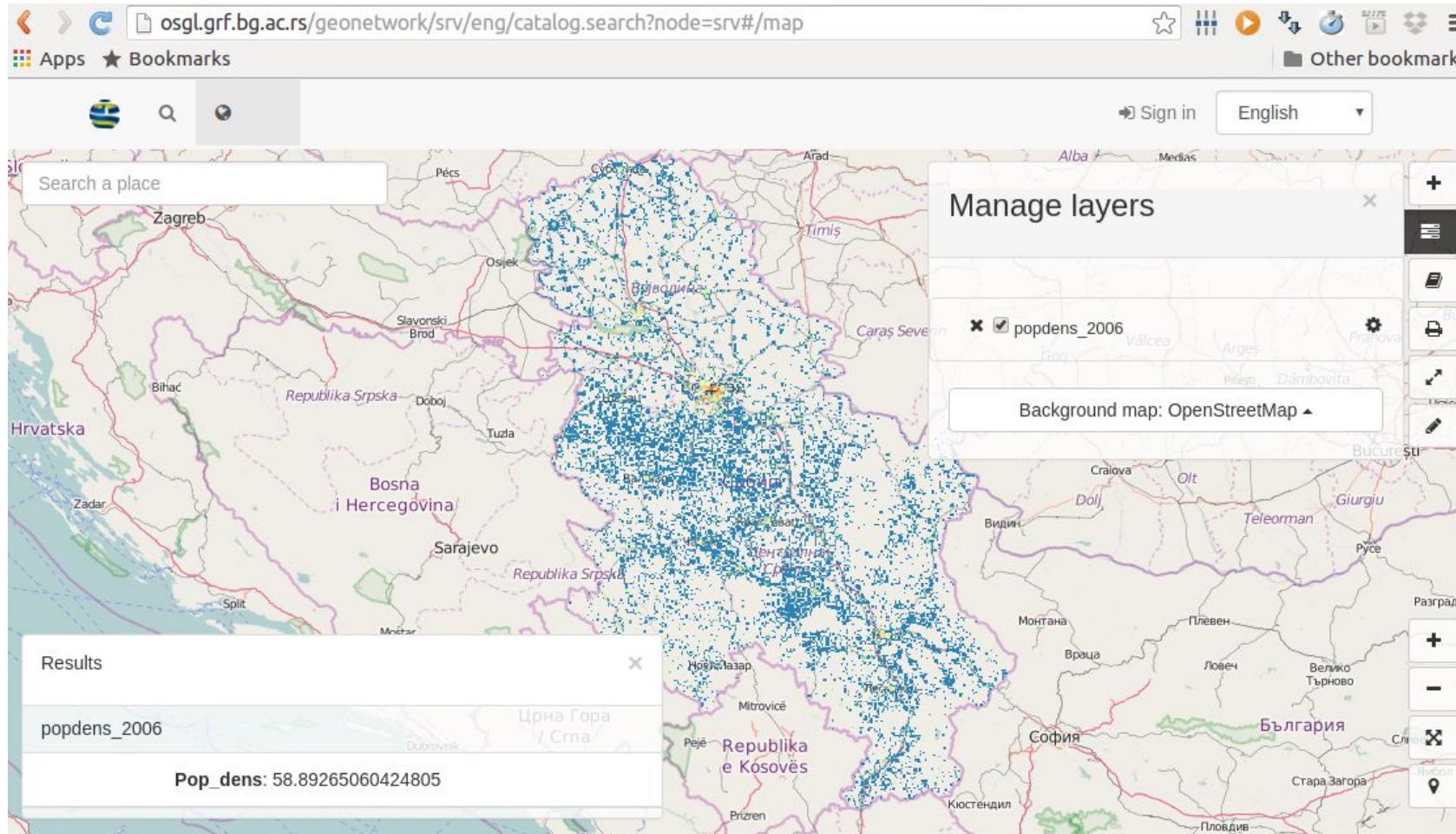
OSGL, in collaboration with the Institute of Architecture and Urban and Spatial Planning of Serbia, created dasymetric population density map making a more reliable view into the allocation of inhabitants, which can be of significant importance when estimating population distributions.

The methodology includes the use of Copernicus HRL Imperviousness that provides information on soil sealing (built-up areas) and detailed Census of population data of the Serbian Statistical Office. (View and download is provided.)

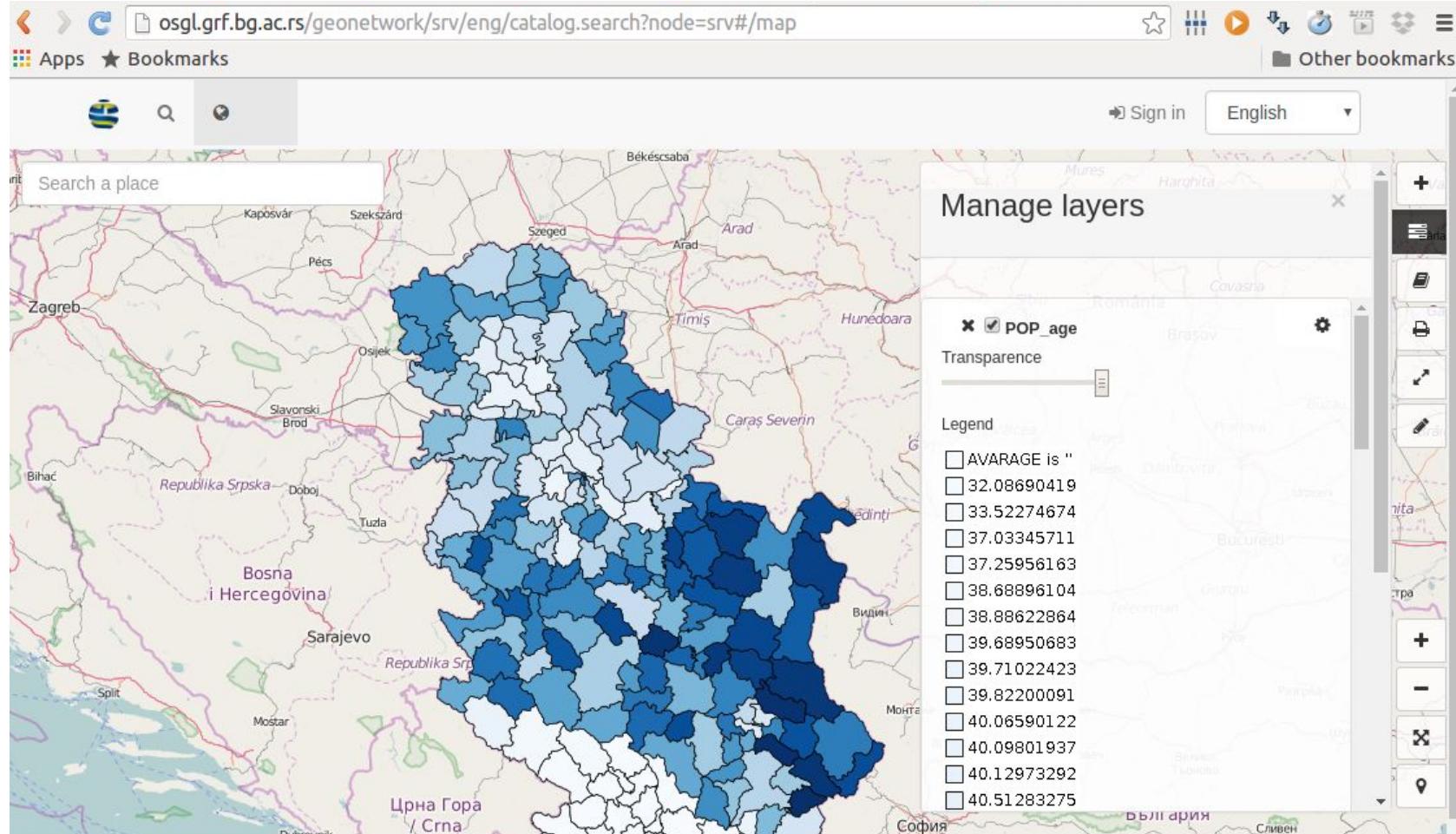
http://osgl.grf.bg.ac.rs/geonetwork/srv/eng/catalog.search?node=srv#/search?type=service&fast=index&_content_type=json&from=1&to=20&sortBy=relevance&any=Population



Population Distribution in Serbia for year 2006



Population - age, census 2011, source for tabular data : www.stat.gov.rs

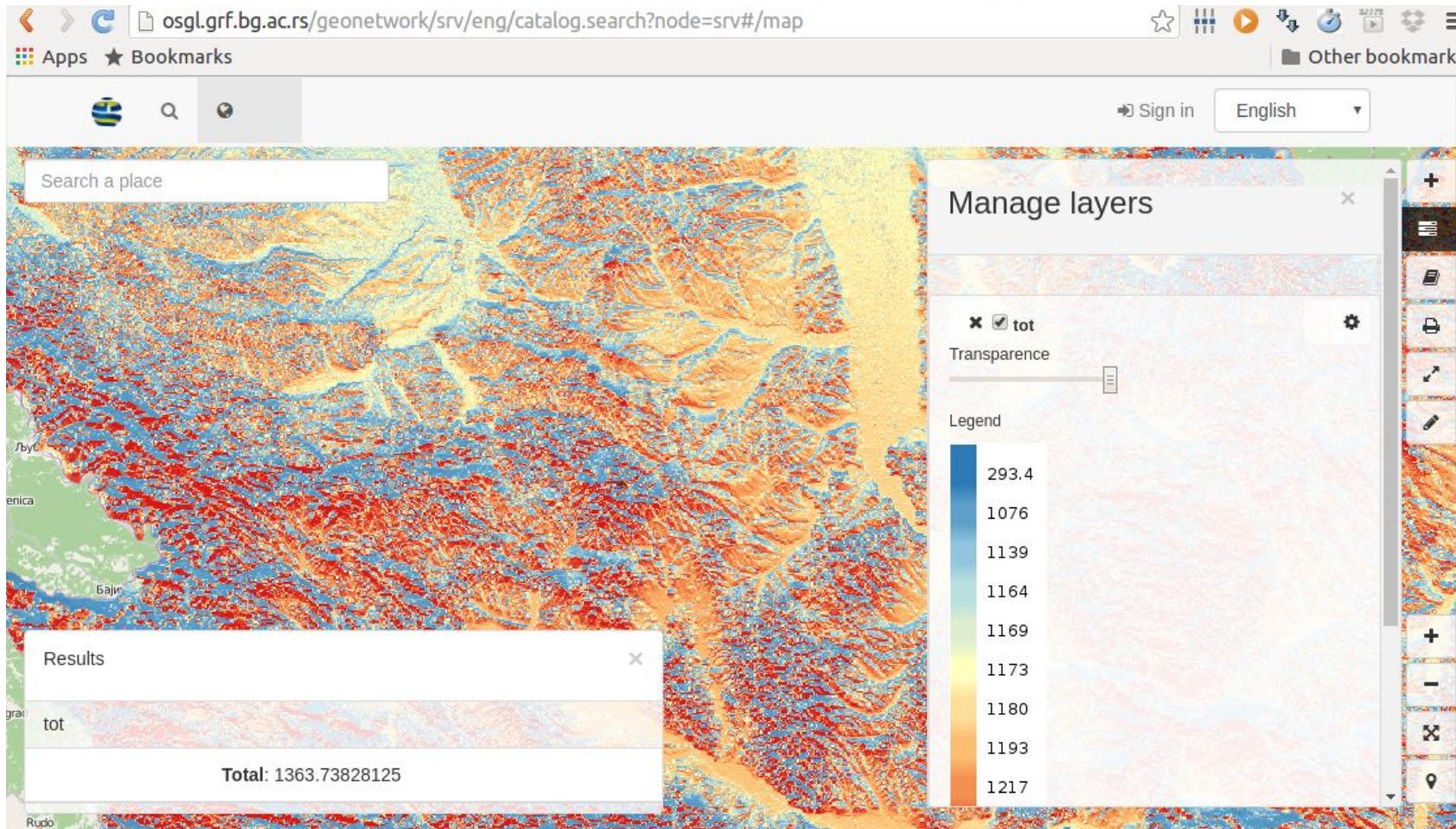


Potential solar radiation

OSGL in collaboration with the Faculty of geography in Belgrade developed and evaluated a database of potential solar radiation that is based on a digital elevation model with a resolution of 90 m over Serbia. (View and download is provided.)

http://osgl.grf.bg.ac.rs/geonetwork/srv/eng/catalog.search?node=srv#/search?type=service&fast=index&_content_type=json&from=1&to=20&sortBy=relevance&any=insolation

Annual total insolation for Serbia

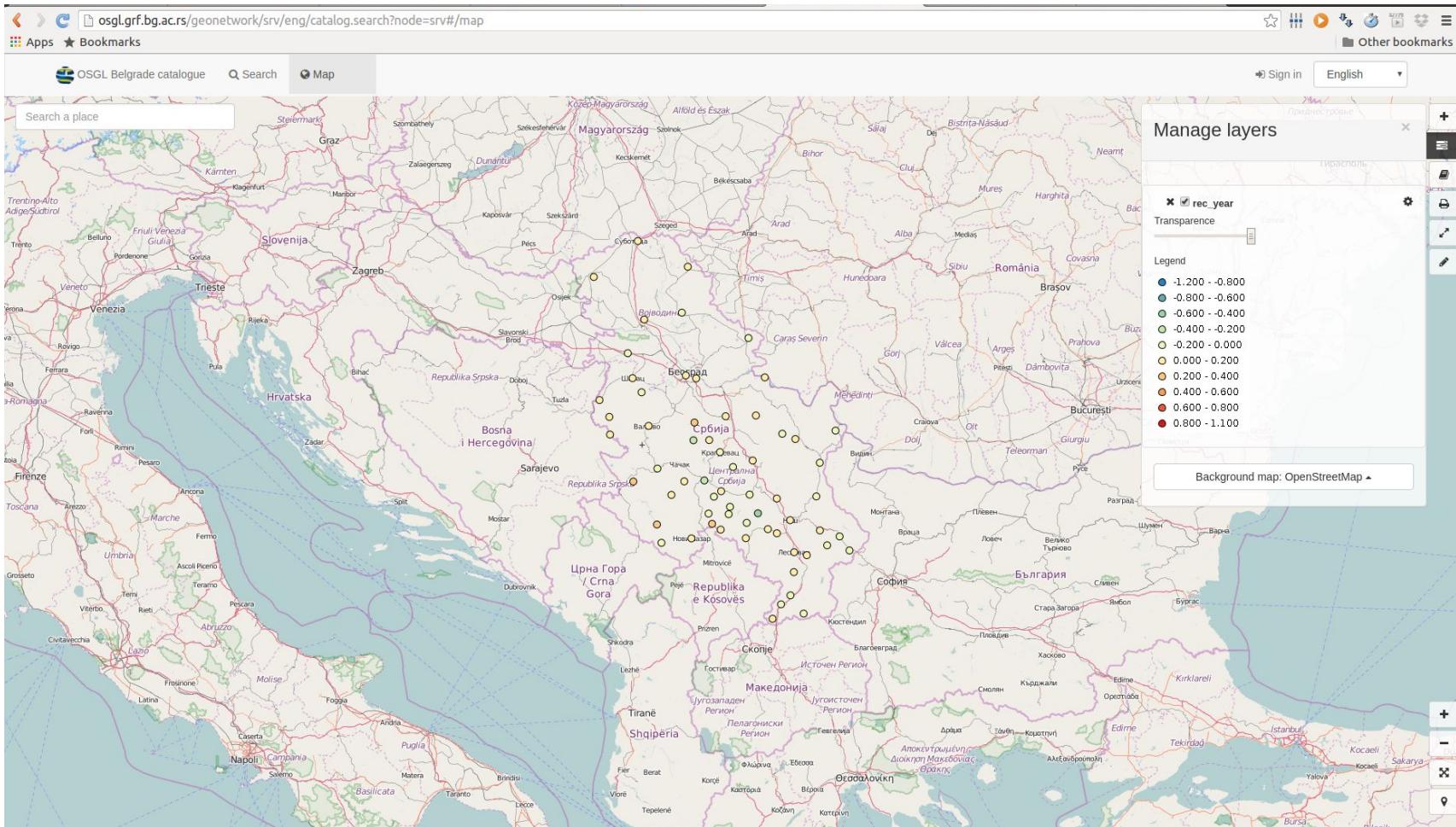


Rainfall and temperature trends and grids

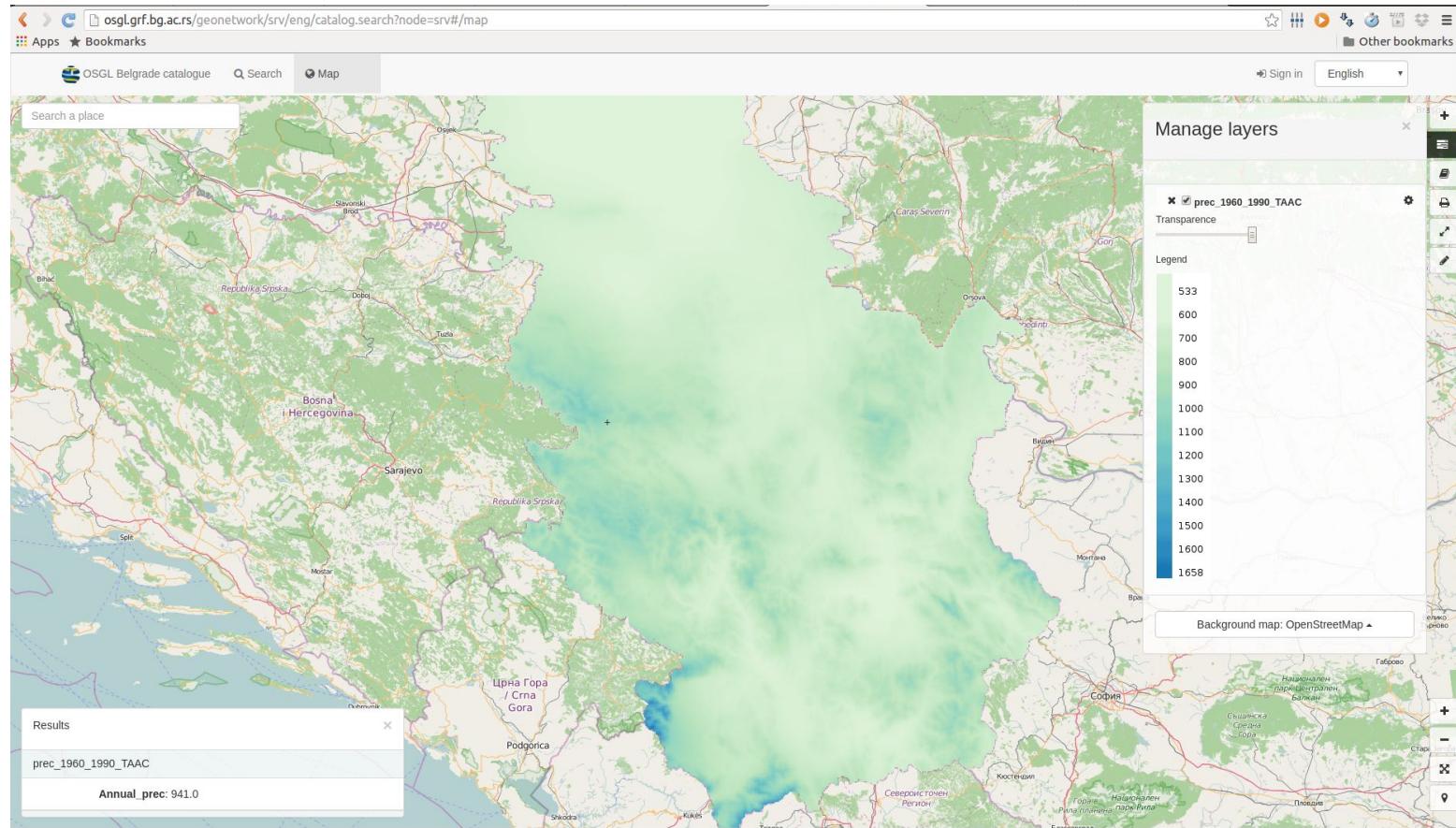
Spatial pattern of annual, seasonal and monthly rainfall and temperature trends is a key for predicting changes in agriculture, water resources and ecosystems alike. List of more than 30 layers for view and download is available at OSGL data portal implemented using GeoNetwork/Geoserver. (View and download is provided.)

http://osgl.grf.bg.ac.rs/geonetwork/srv/eng/catalog.search?node=srv#/search?type=service&fast=index&_content_type=json&from=1&to=20&sortBy=relevance&any=Atmospheric%20conditions

Rainfall trends in Serbia from 1961 to 2009



Average annual precipitation in Serbia (1961-1990)



Access to CORINE Land Cover maps and Copernicus HRL for Serbia

Serbian Environmental Protection Agency is the national institution in charge of managing the local implementation of CORINE inventories and dissemination of the CLC data and Copernicus HRL. Efficient delivering of the valuable datasets to the users had been a challenge in the past.

The solution has been found in collaboration with the Laboratory for development of the open source geospatial technologies (OSGL).

The data are now accessible through OSGL GeoServer: <http://osgl.grf.bg.ac.rs/geoserver/web/>, and via OSGL data and services catalogue implemented using GeoNetwork ([Corine layers](#)). Further, the users can easily visualize the maps on Cesium 3D globe viewer: <http://osgl.grf.bg.ac.rs/srbcorine/> and extract the information on Serbian land monitoring.

The data can be download in national projection, which further facilitate the use.

Cesium 3D globe viewer Serbian land monitoring <http://osgl.grf.bg.ac.rs/srbcorine/>

The screenshot shows a Cesium 3D globe viewer interface for Serbian land monitoring. The main view is a satellite-style map of Serbia, with a large green area representing forest cover. A zoomed-in window in the center shows a detailed view of the northern part of the country, highlighting various land use categories. A sidebar on the left contains a 'Show layers menu' button, a 'Select Terrain Provider' dropdown set to 'CesiumTerrainProvider - STK World Terrain', a 'Select layer for info' dropdown set to 'clc12_rs', and three buttons: 'Choose format...', 'Choose format...', and 'View 3D Model'. A 'View Metadata for Layer' button is highlighted with a white circle. The top bar includes a search field, a menu icon, and standard browser controls. A bottom status bar shows timestamp intervals from Jun 19 2016 11:46:05 UTC to Jun 20 2016 08:00:00 UTC, and coordinates (Lon/Lat: 20.464901,44.752853, Y/X: 7458066.057,4956610.307).

<http://osgl.grf.bg.ac.rs/geonetwork/>

Cesium 3D globe viewer Serbian land monitoring - download

http://osgl.grf.bg.ac.rs/geoserver/

Close Menu

Show layers menu

Select Terrain Provider

Select layer for info

Show layer info

WMS Formats

WFS Formats

View Metadata for Layer

CesiumTerrainProvider - STK World Terrain

clc12_rs

Choose format...

Choose format...

Choose format...

Shapefile

JSON

CSV

1b437770-55e5-48f6-a682-0bc6c99dc814	
code2012	112
_gid	1179
area	7574.82311351
comment	

Lon/Lat: 20.464901,44.75285
Y/X: 7458066,057,4956610.30

1x
Jun 19 2016 11:50:50 UTC
12:00:00 UTC Jun 19 2016 16:00:00 UTC Jun 19 2016 20:00:00 UTC Jun 20 2016 00:00:00 UTC Jun 20 2016 04:00:00 UTC Jun 20 2016 08:00:00 UTC Jun 20 2016 12:00:00 UTC

CESIUM bing © Analytical Graphics Inc., © CGIAR-CSL. Produced using Copernicus data and information funded by the European Union - EU-DEM layers. © 2016 Intermap • © 2016 Microsoft Corporation • Image Courtesy of NASA • Earthstar Geographics SIO

Seismic hazard maps

The Seismological Survey of Serbia has created, in accordance with the National strategy for Protection and Rescue in Emergency Situation, several seismic hazard maps, namely:

- Peak Horizontal Ground Acceleration (average return period for 95, 475 and 975 years) and
- Macroseismic Intensity EMS-98 (average return period for 95, 475 and 975 years).

Seismological Survey of Serbia has used the service for metadata editing and search established by OSGeo to create metadata for the Hazard Maps and publish on the OSGeo data and services catalogue build on GeoNetwork application. The maps are also accessible as WMS and WFS published through OSGeo GeoServer.

http://osgl.grf.bg.ac.rs/geonetwork/srv/eng/catalog.search?node=srv#/search?type=service&fast=index&_content_type=json&from=1&to=20&sortBy=relevance&any=hazard

hazard

INSPIRE THEMES

Geology
Natural risk zones

KEYWORDS

Geoscientific information
InfoMapAccessService
Natural risk zones
Hazard
Earthquake
5 more

YEARS

2013
0NaN

Sorted by relevancy 1 - 7 on 7

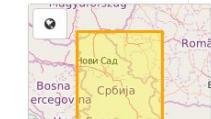
 **Karta ubrzanja na osnovnoj steni za povratni period od 475 godina**
Seismological survey of Serbia

Karta ubrzanja na osnovnoj steni za povratni period od 475 godina
[Seismic Hazard Maps - Peak Horizontal Ground Acceleration, average return period for 475 years]
Maksimalno horizontalno ubrzanje na tlu tipa A (Vs30=800m/s) verovatnoća prevažlaženja 10% u 10 godina (povratni period 475 godina) izraženo u jedinicama gravitacionog ubrzanja g
Republički seizmološki zavod
Autor: mr. sci. Slavica Radovanović
Saradnici: mr. sci. Svetlana Kovačević, Branko Dragičević, Vidosava Knežević

 **Karta ubrzanja na osnovnoj steni za povratni period od 975 godina**
Seismological survey of Serbia

Karta inteziteta na površini lokalnog tla za povratni period od 475 godina
Seismological survey of Serbia

 **Karta inteziteta na površini lokalnog tla za povratni period od 975 godina**
Seismological survey of Serbia

 **Karta ubrzanja na osnovnoj steni za povratni period od 95 godina**
Seismological survey of Serbia

Why data are crucial for supporting macro regional strategies?

Lessons learned from the Danube Reference Data and Services Infrastructure

- **Need for a common entry point.** Data coming from INSPIRE, and other sources, should be quickly gathered as baseline information (ex-Ante/ex-Post/monitoring of strategy implementation) → Knowledge Centres/Territorial Observatories
- **Contributes to openness and transparency through data sharing.** This should include evaluating (open) data policies and the adoption and reuse of INSPIRE that can support a range of Strategies' objectives.
- Sharing data is not only a **legal obligation or a means to support policy implementation/evaluation...** but also a valuable resource for regions. Sharing it in standardised ways can lead to **value-added products**, including citizen participation in policy and value-added tourism applications

Where should efforts be concentrated?

- Promote Open Data policies and knowledge sharing in both Member States (Free Flow of Data Initiative under the Digital Single Market, EU eGovernment Action Plan 2016-2020) and non Member States
 - *“...There is a growing demand from business and citizens to have access to high quality, interoperable and re-usable data to provide new services, in particular the area of spatial data. The use of spatial data for urban, land-use, traffic planning and for scientific purposes can unleash new innovations that respond to societal needs such as reducing the negative impact on the environment.”* (eGovernment AP)
- Offer increased visibility by engaging stakeholders, raising awareness about data policies
- Ensure the long-term sustainability and identify the best governance model serving the needs of the Danube Region and the EC (e.g. by bringing lessons from DRDSI into the Knowledge Centre on Territorial Policies)
- Pursue education and training (human Capital Dimension) by engaging with regional actors (Danube Rectors' Conference, Danube Strategy Research Network)
- Balance efforts between EU and non-EU countries, by supporting pilots, capacity building, etc.

Strategic recommendations

- Data are crucial for macro regional strategies
 - Evaluation, but also monitoring, anticipation, implementation and impact assessment
 - At all levels (European, macro, regional and local)
 - For all stakeholders
 - Should be part of guidelines/best practises (H2020 Open Access to Research Data¹)
- Best use of investments (aligning funds) and targeting resources require facts and robust data. The more mature MRS become... the more they will become subject to ‘classical’ evaluation schemes
- Countries face similar challenges- experience should be shared further
 - ... and common solutions developed to address them to continue collaboration
- Seed investments create sustainable and transferable results
- Data should be:
 - Considered as a reusable asset
 - Made available at the right level of governance
 - Easily found and accessed to maximize its potential

1. http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

Thank you !

NATIONAL PROGRAM FOR CADASTRE AND LAND BOOK

PNCCF/NPCLB

2015-2023



THEMES

PNCCF objective

- Legal framework
- Financing

Systematic registration strategy

Status of systematic registration of properties

- Continuation of systematic registration contracts - CESAR
- Stage 1 PNCCF – 147 UATs
- Systematic registration of cadastre sectors according to OUG no. 35/2016
- UATs Projects from own budget

Benefits of PNCCF

Experience of CESAR pilot project

PNCCF 2015-2023 OBJECTIVE

FREE REGISTRATION OF ALL IMMOVABLE OF ROMANIA IN THE CADASTRE AND LAND BOOK INTEGRATED SYSTEM

- Achievement of cadastre plan – real reflection of immovable and areas
- Registration of possession without property deeds
- Opening of land books
- Successions debate



Transparency in implementing the PNCCF through integrity pact of ANCPI - *Transparency International Romania and the Institute for Public Policies*

SISTEMATIC REGISTRATION LEGAL FRAMEWORK

Law of cadastre and land registration no. 7/1996 , republished with subsequent amendments

Government Decision no. 294/29.04.2015

Regulation approved by GDO no. 700/2014 with further modifications and completions

Technical specifications regarding achievement of systematic registration works at UAT level and at cadastre sector level

Government Emergency Ordinance no. 35 /2016



PNCCF FINANCING ~ 1,2 billion euro

ANCPI OWN INCOME

4.050.885
thousand
RON

EXTERNAL GRANTS

1.408.010
thousand
RON

FINANCIAL SOURCES ALLOCATED FROM UATs BUDGET

within
allocations
from local
budgets

STRATEGY FOR SYSTEMATIC REGISTRATION OF PROPERTIES

- Transparency and equal treatment for all entities involved
- Use of all human and financial resources available and qualified at market level
- Constitution of budgets based on historical prices from previous bids for systematic registration services
- Flexibility in updating regulations in solving situations encountered in practice

STRATEGY FOR SYSTEMATIC REGISTRATION OF PROPERTIES

Financing of UATs for systematic registration on cadastre sectors

- About 1000 UATs
- Fixed price per unit : 60 RON/land book
- Works developed at cadastre sector level
- Procurement procedures conducted by UAT
- Performers:
Authorized persons A,B,D category;
Juridical persons cat. I,II,III

Co-financing systematic registration in urban areas

- About 320 towns
- Co-financing ANCPI: 60 Ron/
Land book
- Works developed at UAT or cadastre sector level
- Procurement procedures conducted by UAT
- Performers:
Individuals/Juridical persons

EU funds for systematic registration in rural areas

- Object 5,7 mil. ha
- Selecting UATs by an inter-ministerial commission, by criteria:
 - ✓ Included in the Transportation Master Plan
 - ✓ Having infrastructure projects in other programs
 - ✓ Vulnerable areas
- Procurement developed by ANCPI
- Performers: Jur. pers

Annual budget of PNCCF approved by the ANCPI Board of Directors

SITUATION OF IMMOVABLE REGISTERED IN THE INTEGRATED SYSTEM OF CADASTRE AND LAND BOOK

Estimated number of immovable: 40.000.000, from which:

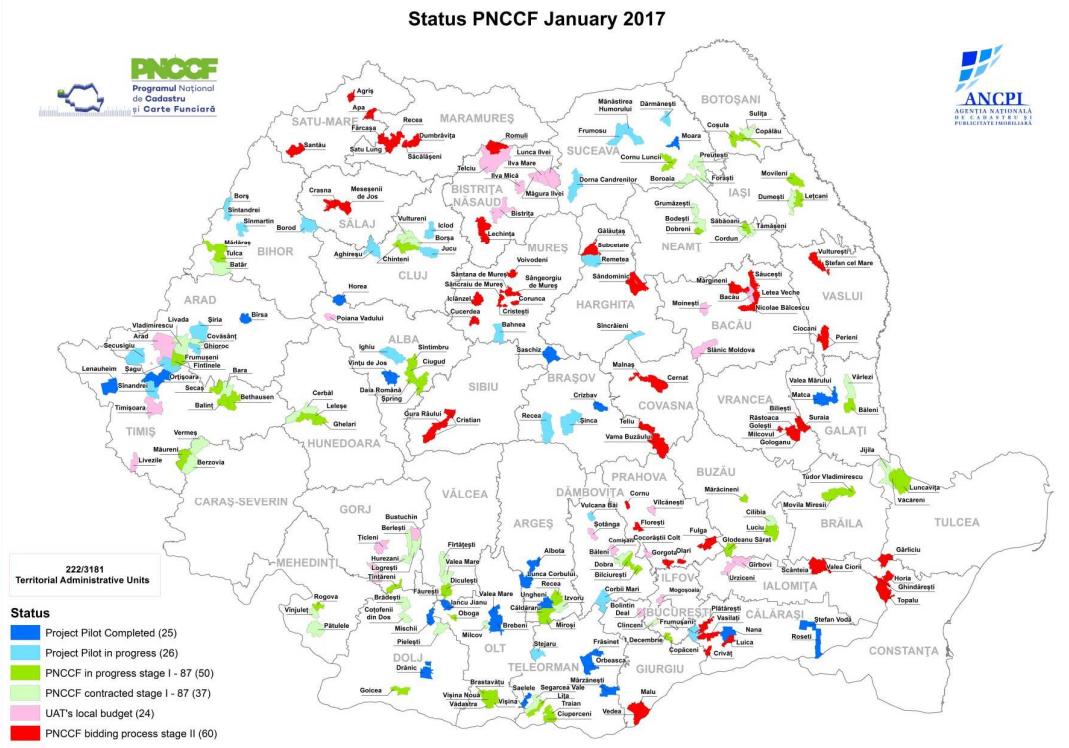
URBAN:	320 UATs	8.000.000 immovable	20%
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RURAL:	2.861 UATs	32.000.000 immovable	80%
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Number of immovable registered in the IT system at 21.02.2017:

9.478.040 (23.70%)

STATUS OF SYSTEMATIC REGISTRATION OF PROPERTIES



SYSTEMATIC REGISTRATION CESAR contracts 2016



Object	Financing	Status of works
50 rural UATs of 16 counties	IBRD Loan 2011 – 2013	24 UATs finalized
Covered area: 425.000 ha	ANCPI own funds	5 UATs being finalized
No. of estimated immovable: 620.000		21 UATs in progress

SYSTEMATIC REGISTRATION STAGE I - 147 UATs

ANCPI launched the first electronic bid in SEAP for the implementation of the National Program for Cadastre and Land Registration

**Number of UATs
in rural area: 147**

**Frameworks
contracts awarded
for 87 UATs in 24
counties**

- budget with VAT: 71,8 mil. Ron
- Finalization of works: 2019
- 22 contracts for services in development in 50 UATs

**Resumption of
procurement in
2017 for 60 UATs
in 17 counties**

- budget with VAT: about 53 mil. Ron
- Finalization of works: 2020



SYSTEMATIC REGISTRATION 2016 OUG 35/2016 (Government Emergency Ordinance)

Administrative-territorial units can initiate systematic registration works across sectors that include immovable in extravillan

By exception, in the administrative-territorial units without extravillan land, the systematic registration works can be started at cadastre sector level in the intravillan

Performers:

- A, B or D category authorized individuals
- I, II or III class juridical persons

Number of immovable to be contracted : between 100 - 2250/UAT



SYSTEMATIC REGISTRATION 2016 OUG 35/2016 (Government Emergency Ordinance)

Budget 135.000 Ron (including VAT) per UAT with maximum 60 Ron/Land Book (including VAT)

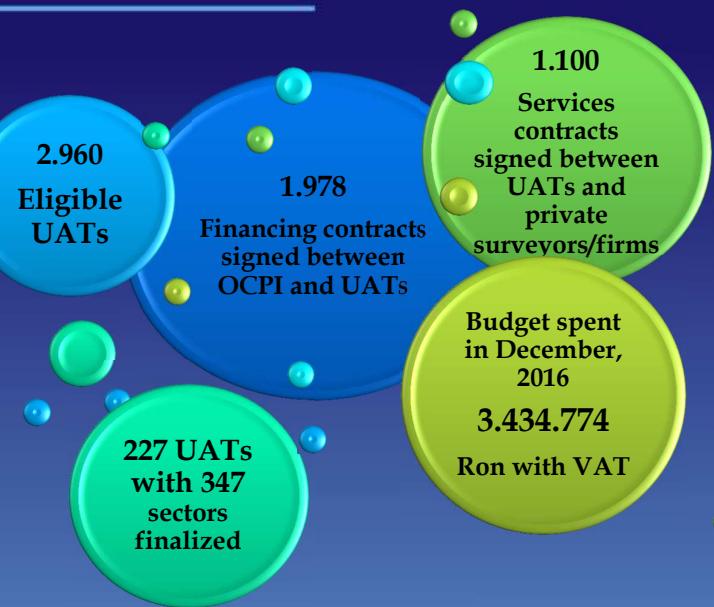
Payment of works will be made after the final reception and issuing of services acceptance by UAT

Not subject to payment:

- Land books that have associated geometry, registered in the integrated system of cadastre and land book, until the date of which the performer receives a right of access to the e-Terra database
- Immovable that are included in the parceling plans executed based on financing contracts from public funds

In the case of immovable with holders registered in the individual land books derived from the land book of property titles from the sector for which could not be established the location of immovable, will be reimbursed up to 60 lei for the land book of the property titles of the cadastre sector and 50% of the price offered for an immovable

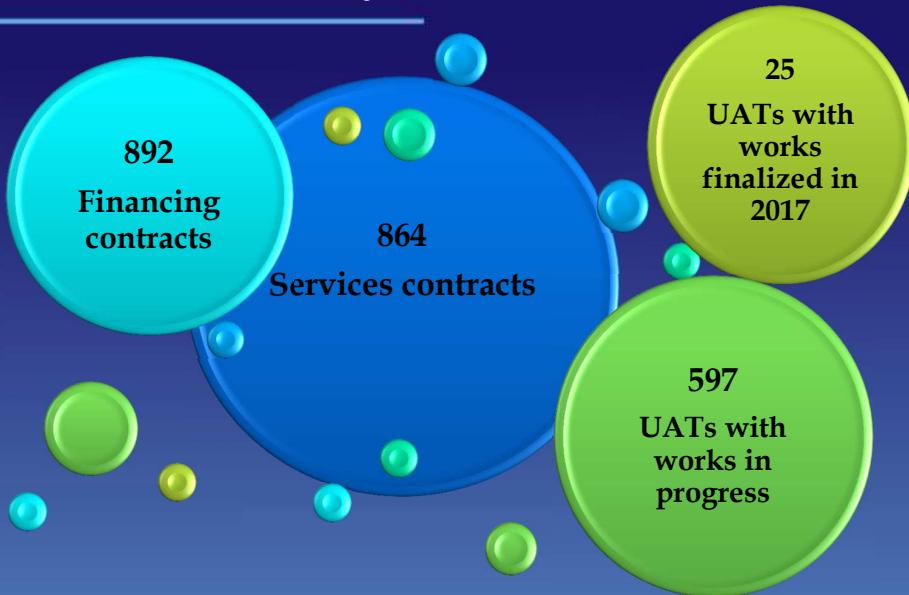
SYSTEMATIC REGISTRATION OUG 35/2016 Situation at December 15, 2016



No. of finalized immovable: 63.799
Registered area: 48.696 ha

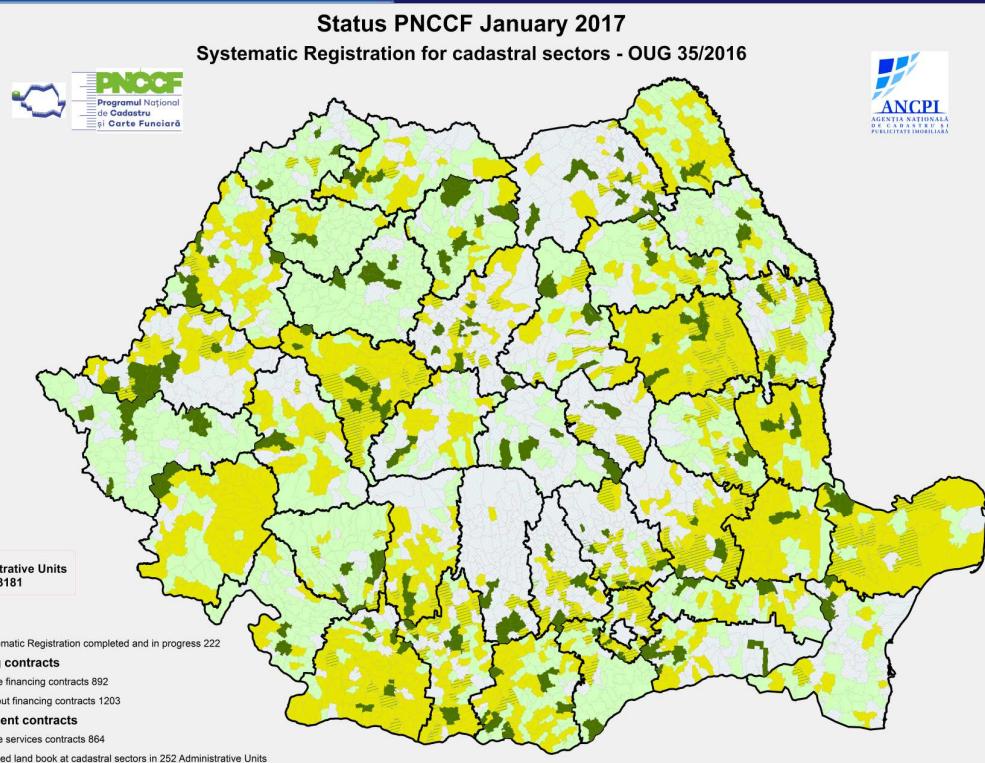
SYSTEMATIC REGISTRATION OUG 35/2016

Situation at January 31, 2017



Budget allocated in 2017 to award financing contracts: **444.000.000 Ron**
about 150.000 Ron/UAT

STATUS OF SYSTEMATIC REGISTRATION OF PROPERTIES



SISTEMATIC REGISTRATION 2017 OUG 35/2016 – OCPI Actions

OCPI



- Send notice to UATs regarding the amount approved in the budget, together with the contract model and the technical specifications
- Sign the financing contracts with the UATs
- Appoint a contract responsible
- Report monthly to ANCPI the contract development status
- Sets the public display of technical documentation and communicate it in writing to ANCPI and Provider
- Issues the Technical Reception of the technical documentation and send a copy to the UAT
- Checks the payment documents and requests the transfer of funds from the ANCPI
- Transfer the funds to the UAT



SISTEMATIC REGISTRATION 2017 OUG 35/2016 – Actions of authorized persons ANCPI

Individuals / Juridical persons



- Registration in the Electronic System of Public Procurement (SEAP)
- Define the product catalog
- Conclude the service contract
- Perform under the systematic registration contract the following:
 - Develop the public awareness campaign at local level
 - Take over the application to generate .cgxml files
 - Execute specific works, identify immovable limits, prepare data sheet of immovable, identify holders and collect deeds
 - Integrate the information from the sporadic cadastre in the systematic registration works
 - Issue the cadastre technical documents
- Provides technical support during the public display of cadastre technical documents
- Update the cadastre technical documents following the solution of rectification requests and delivers to the OCPI the final technical documents
- Issues and forward the invoice to the UAT



SISTEMATIC REGISTRATION 2017 OUG 35/2016 - Actions of UAT Mayor

Mayor

The UAT fill in the financing contract with the needed amount and send it to the OCPI. The period during which the UAT may request the conclusion of the financing contract is maximum 45 days after receiving the notice sent by the OCPI to each UAT from its area of jurisdiction, or lose funding.

After the fullness of 5 days from the expiry of 45 days, OCPI will notify UAT from its jurisdiction that have not requested the conclusion of the contract, for the conclusion of the financing contract within 15 days after receiving the notification, or lose funding.

- Sets the cadastre sectors together with OCPI
- Sign the financing contract between UAT and OCPI
- Develop the procurement procedure – select the performer/trader
- Signs the public procurement contract with the performer
- Appoint a contract responsible
- Provide support for the development of the public awareness campaign
- Monitoring and report to the OCPI the contract implementation status
- Countersign the technical documents of the cadastre
- Provides space and support for the development of the public display
- Issue the SERVICES ACCEPTANCE for the performed services
- Requests from OCPI the transfer of amounts necessary for payments
- Perform the payment of services to the provider

SISTEMATIC REGISTRATION 2017 OUG 35/2016 - Available documents

<http://www.ancpi.ro/pnccf/> - DOCUMENTE TEHNICE

- Mayor guidebook
- Authorized person guidebook
- Budget allocation and procurement guidebook
- Procedure and modality of amounts allocation and reporting by beneficiaries the stage of execution of systematic registration works initiated by the UATs
- Technical specifications for the execution of systematic cadastre works on cadastre sectors for the registration of immovable in the land book
- Free application to generate .cgxml files
- Instructions regarding access to WebCadgen

BENEFITS OF SYSTEMATIC REGISTRATION IN THE PNCCF

Finishing of the property restitution process

Implementation of new payment scheme which are applied in agriculture through farmland registering within the cadastre sectors in the extravillan of municipalities

Reducing time of implementation of the national strategic infrastructure projects

Setting a realistic tax base of immovable properties

Identification of owners, possessors and solving of not debated successions, by paying the notarial fees from ANCPI budget

Development of real estate market and mortgage in rural area



EXPERIENCE gained in CESAR Pilot project

Systematic
cadastre is a
complex process -
the
measurements
are just the tip of
the iceberg ...

...challenges arise
in identifying
locations and in
establishing links
to the property
deeds

Organization and
management of
works - condition
for quality of
works



EXPERIENCE gained in CESAR Pilot project

Information campaign:

well done,
provides
complete and
accurate
information



EXPERIENCE gained in CESAR Pilot project

Interaction with citizens:

crucial for
organizing and
carrying out
works



EXPERIENCE gained in CESAR Pilot project

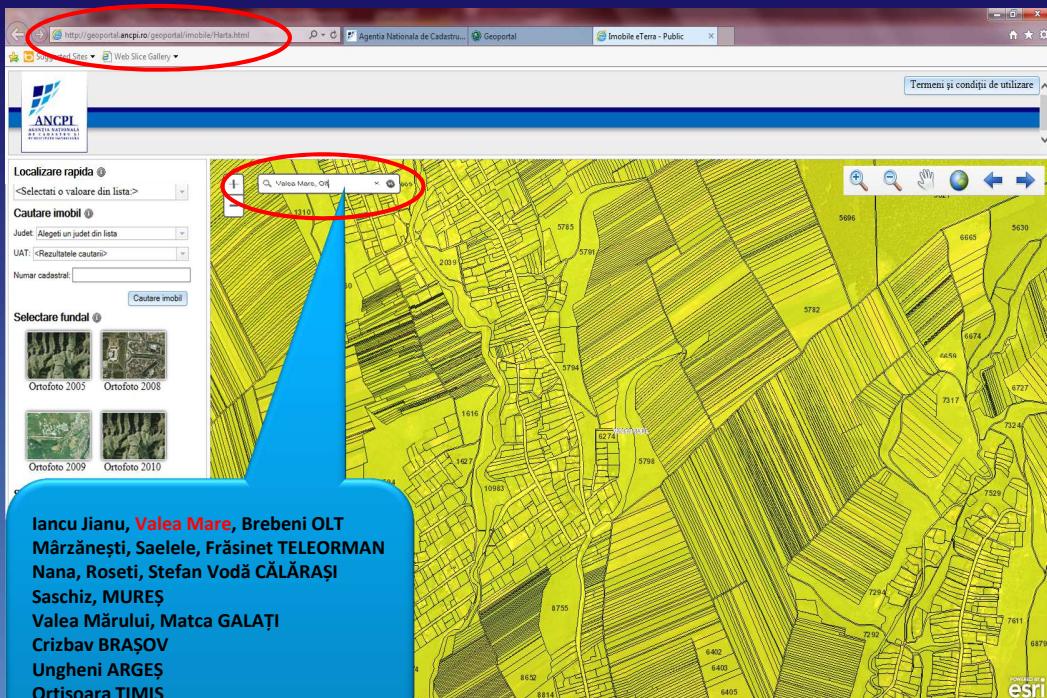
Collaboration with the Mayoralty:

essential to the efficiency of the process
(integration in delivery times)



PNCCF on the Geoportal

<http://geoportal.ancpi.ro/geoportal/imobile/Harta.html>



Iancu Jianu, Valea Mare, Brebeni OLT
Mărănești, Saelele, Frăsinet TELEORMAN
Nana, Roseti, Stefan Vodă CĂLĂRAȘI
Saschiz, MUREŞ
Valea Mărului, Matca GALAȚI
Crizbav BRAŞOV
Ungheni ARGEŞ
Orțişoara TIMIŞ

Thank you for your attention !

Cadastre & Land Registry in Romania

Mihai Taus
Romanian Land Registry Association



- 238.391 Km²
39,2% agricultural land, 28% forests, 20,5% meadows & grassland, 2,3% vineyards and
orchards, 4,5% buildings and roads, 3,7 flowing waters and lakes
19.760.000 inhabitants



- 42 counties

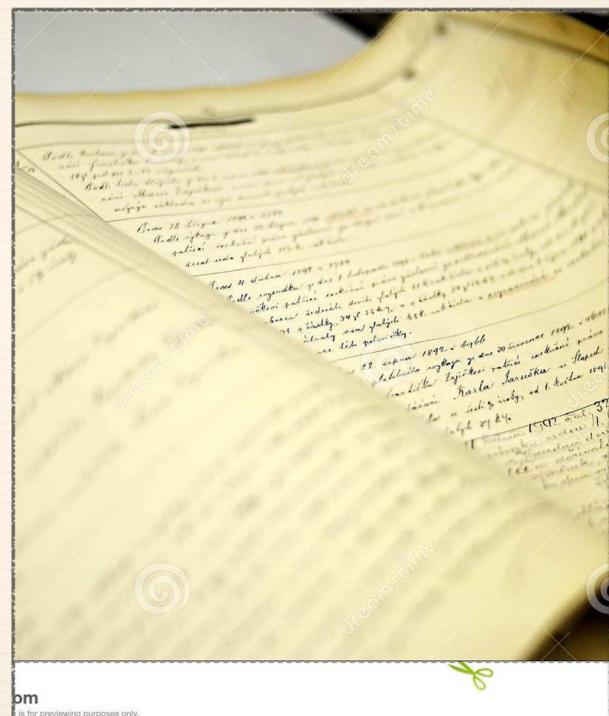
40.000.000 properties (9.000.000+ available on common C&LR centralised data base)

890.000 transactions in 2015,

181.320 mortgages in 2015

MILESTONES

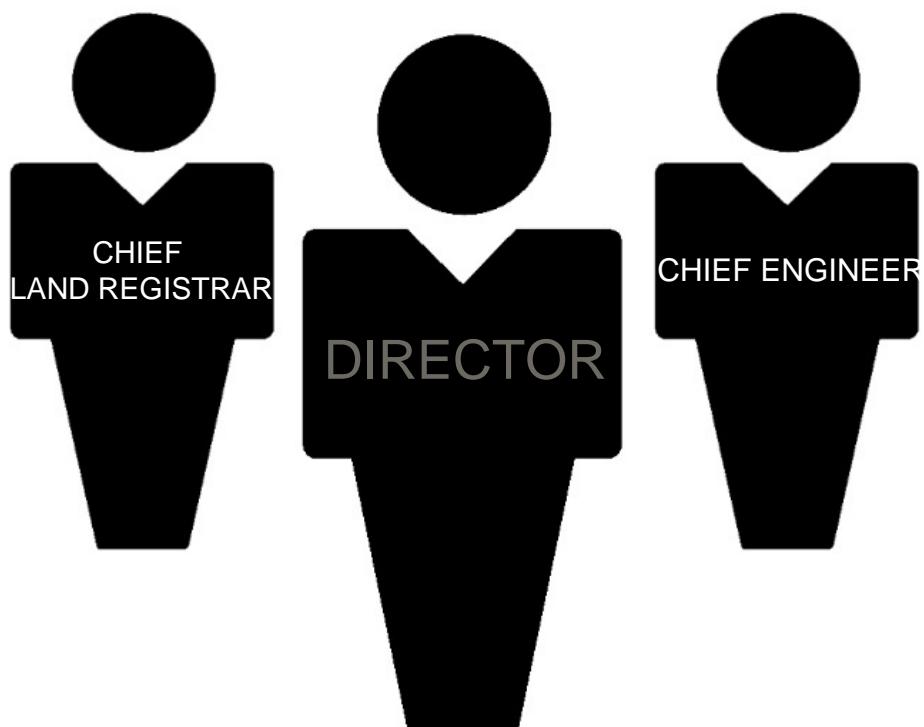
- mid. XIX century - title system in Transylvania, Banat, Bucovina (deed system - French civil code for all other regions)
- 1938 - main law enacted (Law-Decree nr. 115/1938)
- 1996 - new land registry law (Law nr. 7/1996)
- 2004 - organisational change (birth of the ROMANIAN AGENCY FOR CADASTRE AND LAND REGISTRATION - ANCPI)
- 2009 - E-terra IT solution
- 2011 - new Civil Code
- 2016 - systematic registration starts(ongoing process)



NATIONAL AGENCY FOR CADASTRE AND LAND REGISTRY

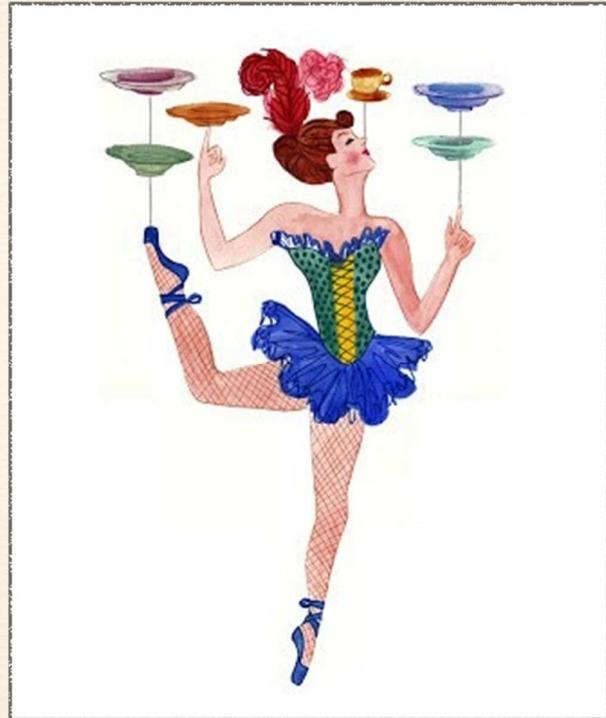
- ❖ enacted in 2004
- ❖ sole authority for cadastre and land registry in Romania
- ❖ joined organisation for cadastre (Ministry of Agriculture) & land registry (Ministry of Justice)
- ❖ 42 county offices, 177 territorial bureaus
- ❖ xxxx employees

NATIONAL AGENCY FOR CADASTRE AND LAND REGISTRY



CHALLENGES

- two coexistent land registry systems
- two different organisational cultures
- parallel evolution of cadastre and land registry
- 50 years gap due to restricted legal traffic of real estates
- restitution of the nationalised/expropriated real estates
- legislation



RIGHTS & WRONGS

- REAL FOLIO EXTENDED TO COUNTRY LEVEL
- SETTING UP A NEW FRAMEWORK
 - new common regulations,
 - new common workflows
- INFORMATIZATION
 - transparent and trackable workflows
 - faster processes
 - standardised outputs
 - technology dependence

RIGHTS & WRONGS

- DEFINING THE COMPLEMENTARY ROLE OF CADASTRE AND LAND REGISTRY
 - different objects:
 - immovable for cadastre (boundaries, description, identification, etc.)
 - rights for land registry (but object of the right is the immovable)
 - same outcome: CERTAINTY
- FOCUS ON INTERCONNECTION & INTEROPERABILITY
 - fast organisational evolution
 - constraints (legislation, partners development status)

Thank you!

*Mihai Taus
Romanian Land Registrars's Association
Belgrade, 13.06.2017*

“And they lived happily ever after”

The end

*Mihai Taus
mihai.taus@gmail.com
Madrid, 24.11.2016*

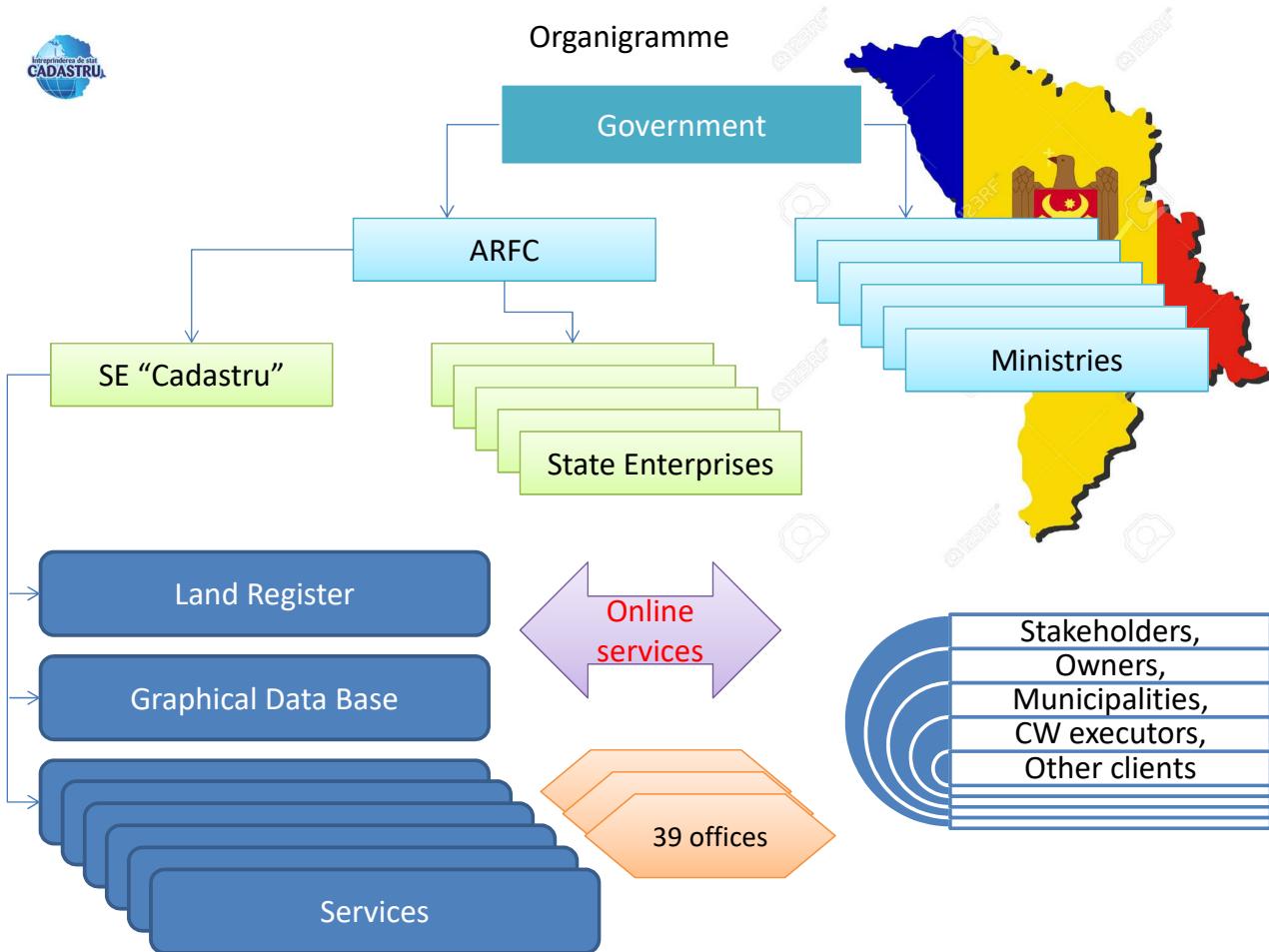
Land Register and Cadastre in Moldova

Situation and Current Developments

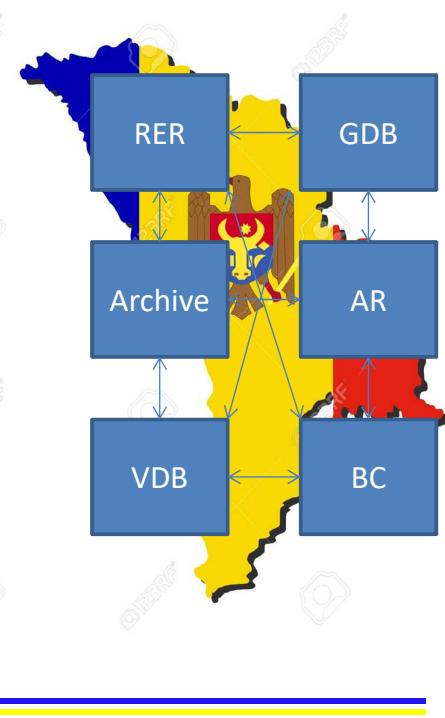
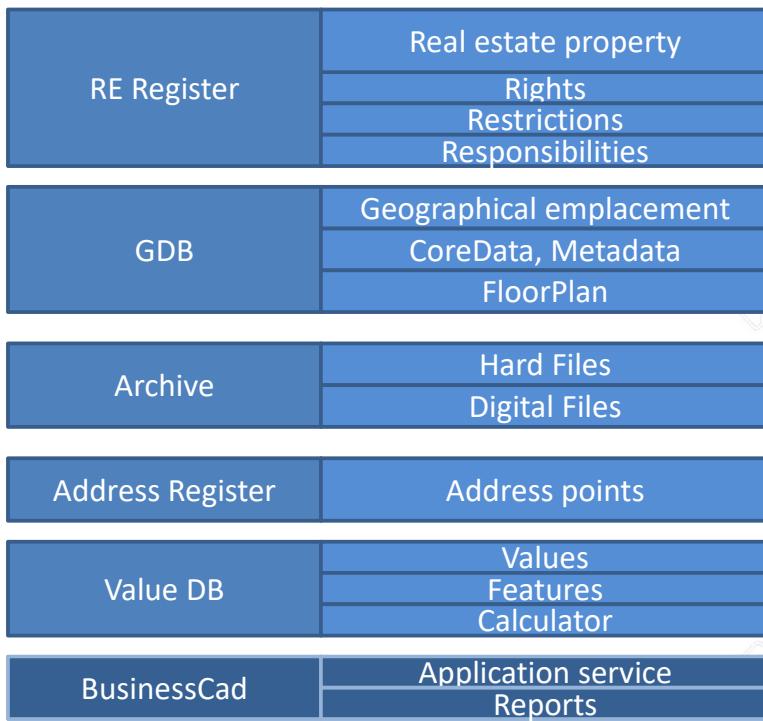


by Paladi Alexandru

June, 12-13, 2017, Belgrade (Serbia)



Actual model



The Land Register Structure

Chapter A – the records about Land parcel

Chapter B – the records concerning Buildings on the land parcel

Chapter C – the records concerning Units (isolated premises) from buildings

Each Chapter constitutes 3 sub-chapters:

Sub-chapter I – The real estate data (Cadastral ID, Mode of use, Surface, type of border, Energy class, grade of completion)

Sub-chapter II – Property Right Data (Owner(s), type of rights, share, deeds)

Sub-chapter III – encumbrances

<p>Registrul bunurilor imobile 0121121320</p> <p>Capitolul I. Bunul imobil</p> <p>1.0. Bunul imobil Teren Numărul cadastral 0121121320 Adresa: str. Chirilău, or. Durlești str. Livezilelor, 116 Modul de folosință Pentru construcții Suprafață 0.6474 ha Tipul hotărâc general</p> <p>1.1. Bunul imobil Constru. Numărul cadastral 0121121320 Adresa: str. Chirilău, sect. Botanica str. Grenoble, 255/1 ap.63 Modul de folosință Casa de locuit Suprafață 122.8 m.p.</p>	<p>Subcapitolul II. Dreptul de proprietate asupra bunului imobil</p> <p>2.2. Bunul imobil 0100113.217.08.063 Cola parte 1.0 Proprietar IZBAS VICTORIA IVAN, (08.03.1979), Codul Personal 0981908429644 Domiciliu / Sediu CHIŞINĂU, DACIA BD. nr. 22 bl. - ap. 114 Proprietar IZBAS STANISLAV DUMITRU, (23.10.1979), Codul Personal 0971104050775 Domiciliu / Sediu STEFAN VODĂ, COPCEA Temeul înscris în Act de transmitere-primeire (0100/17/70070) Contract privind investiții (0100/17/70070) Data înregistrării 26.05.2017</p> <p>Subcapitolul III. Grevarea drepturilor patrimoniale</p> <p>Partea I. Alte drepturi reale.</p> <p>3.1.1. Tipul grevii Ipoteză Obiectul grevii în proprietatea lui nr. 0100113.217.08.063 indicat în subcapitolul II nr. 2. Temeul înscris în Contract de ipotecă Nr. 340 din 19.12.2013 (0100/13/179741) Acord aditional nr. 1 Nr. 1305 din 29.08.2014 (0100/14/142949) Acord aditional nr. 2 Nr. 1980 din 18.10.2016 (0100/16/162115) Terendum / Conda la 19.12.2013 - Sumă 8000000 USD Titularul și/sau Societatea pe Acțiuni BANCA DE ECONOMII Societatea Domiciliu / Sediu CHIŞINĂU RIŞCANI, mun. Chirilău, Colina nr. 115 Stins (semnaturi registratorului și data) _____ Semnatura registratorului _____</p>
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REAL ESTATE REGISTER

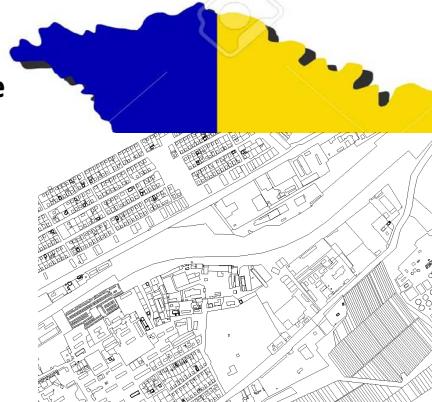
- The registration in the land register and cadastral plans is not ipso facto equivalent to a "title deed"
- It is required that the immovable property mentioned in the transaction is identified (in particular at the graphic level) in the most complete manner and without any uncertainty
- Cadastral registers can be updated thanks to this.
- The information which is mentioned in the registers concerns the deeds of transfer and the adjudicative decrees.
- The Registry duty has a very important consequence as regards the civil law in addition to its fiscal objective:
 - ✓ it gives an indisputable date to the deeds which are registered.
 - ✓ a registered deed is enforceable against third persons.
- It enables, thanks to documentation, to control the perception of the inheritance taxes.
- It furnishes information to the Direct Tax Administration



The Graphical Data Base

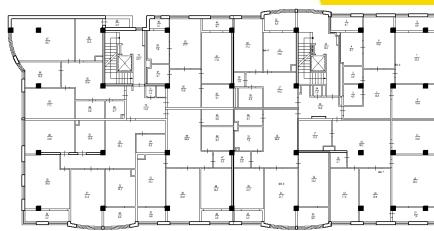
1. Land graphical data base

Land Parcels and Buildings



2. Floor Plan

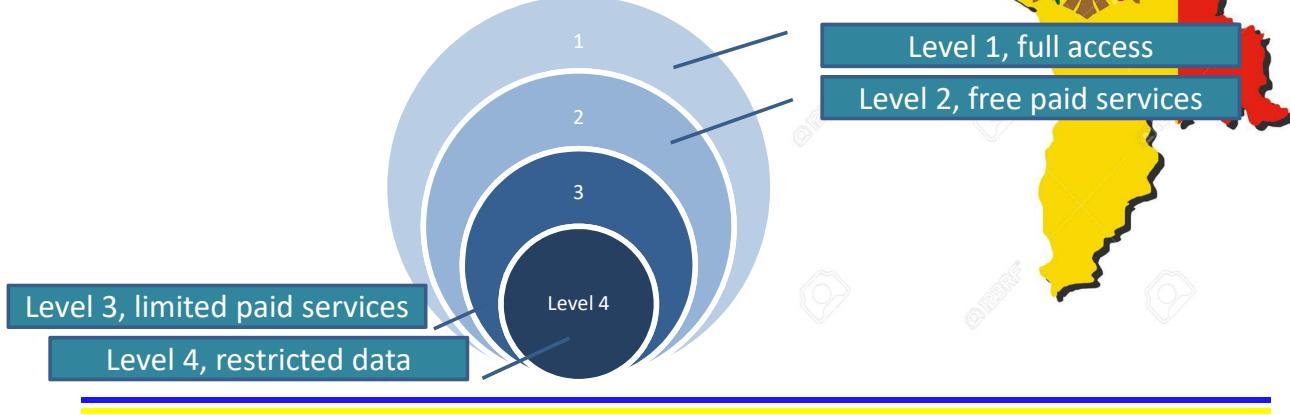
Units (Isolated premises)



Access to Data

	GDB				RERegister			Valuation	
	Map	Attributes	organic data	FloorPlan	Rights	Owner	Personal information	Value	techn. Features
free	+	+	-	-	+	+	-	+	-
paid	+	+	+	-	+	+	-	+	-
The owner or a special persons only	+	+	+	+	+	+	+	+	+

Levels of cadastral data access



Problems and hindrances

-Different quality level of graphical data from different sources

-Topology rules

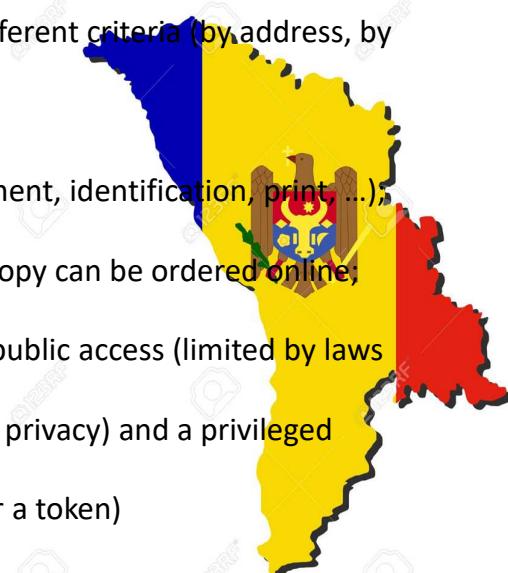
-The lack of interoperability between the Data Bases

-Public Property delimitation

-The internal area for units (isolated premises) as the identifier in R.E.Register

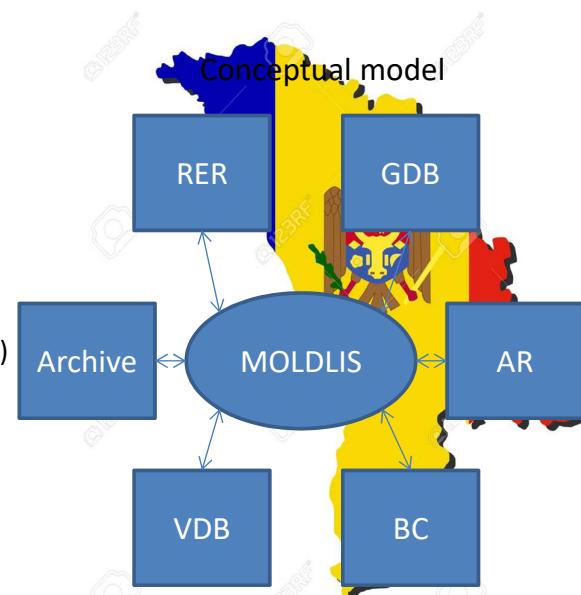
Actual achievements

- The user can freely navigate on the cadastral map by using a viewer;
- Search for a specific cadastral parcel according to different criteria (by address, by cadastral number, by coordinates) available;
- Application basic mapping functionalities (measurement, identification, print, ...);
- A legal cadastral extract document or a digital data copy can be ordered online;
- Two different access modes are offered to public: a public access (limited by laws and standards related to personal data protection and privacy) and a privileged access for the holders of an electronic identity card (or a token)



Actual projects of development

- MOLDLISS project:
 - ✓ Association of different application in one single Data Application
- Mass registration project
 - ✓ ~550 000 from 5mln of parcels are not registered (600 localities)
 - ✓ determination of the administrative boundaries
 - ✓ Delimitation of Public Property (PLA and GOV)
 - ✓ Comprehensive Surveys and data Collection
 - ✓ The graphical error Correction
- E-Archive project
 - ✓ 5 mln from 7mln files scanned
 - ✓ 90% of floor- plans are digitalized
- E-Reception
 - ✓ 85% of surveys made by Privates are actually received through e-module



Future Objectives

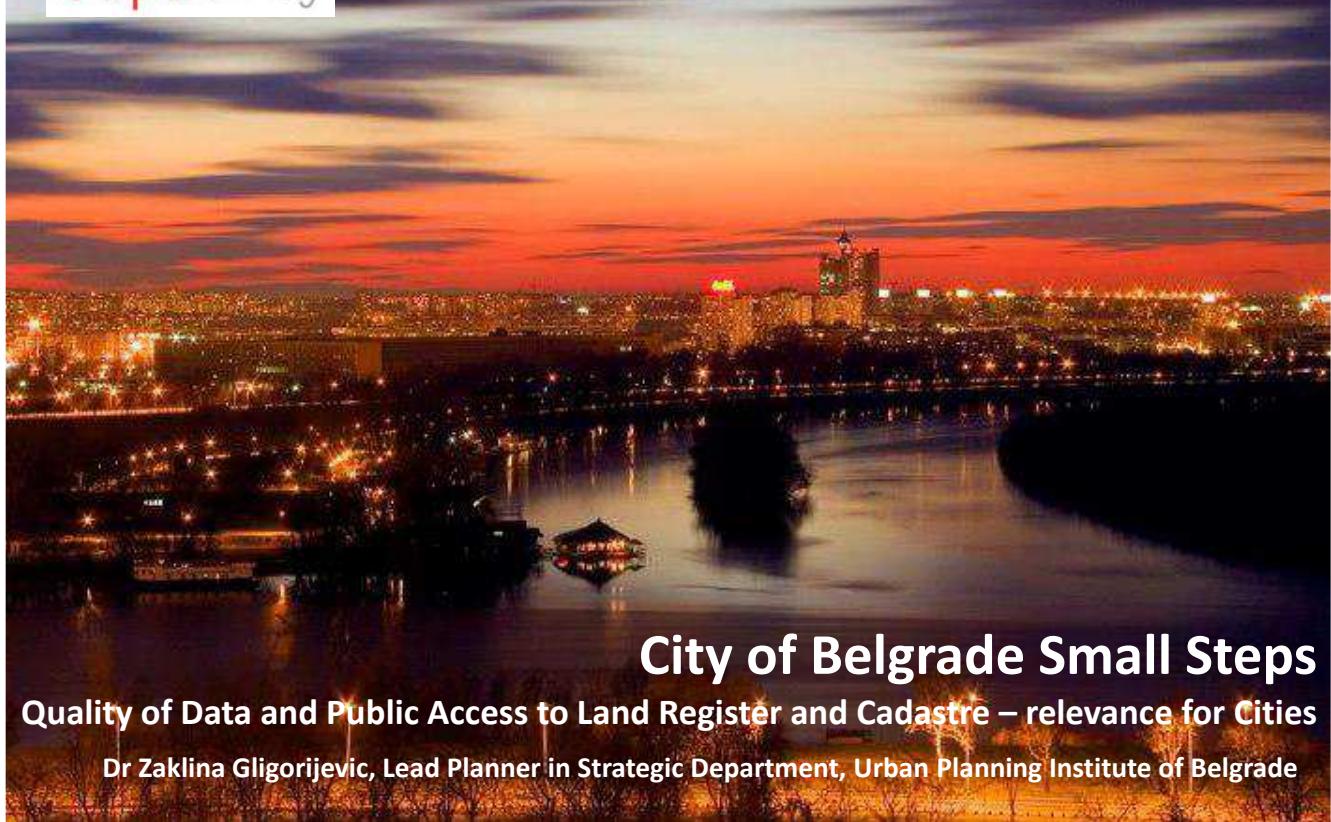
The technical improvements:

- Authenticated surveyors with the help of their ID card, could directly download a vectorial data copy of an area of the cadastral map in order to integrate it in their own survey or GIS.
- New technique of data collection based on the OrtophotoPlan.
- Establishment of interoperability and the data harmonization with other graphical Data Bases (water, forest, public property, protection zones, etc.)

Improvement of The legal norms:

- Establishing the new notions:
 - ✓ “Graphical Data Quality” as the core data in GDB. Each level must have its own precision.
 - ✓ “Units outline” as the units identifier





City of Belgrade Small Steps

Quality of Data and Public Access to Land Register and Cadastre – relevance for Cities

Dr Zeklina Gligorijevic, Lead Planner in Strategic Department, Urban Planning Institute of Belgrade

contextual

Small steps in the 1990-ties

1

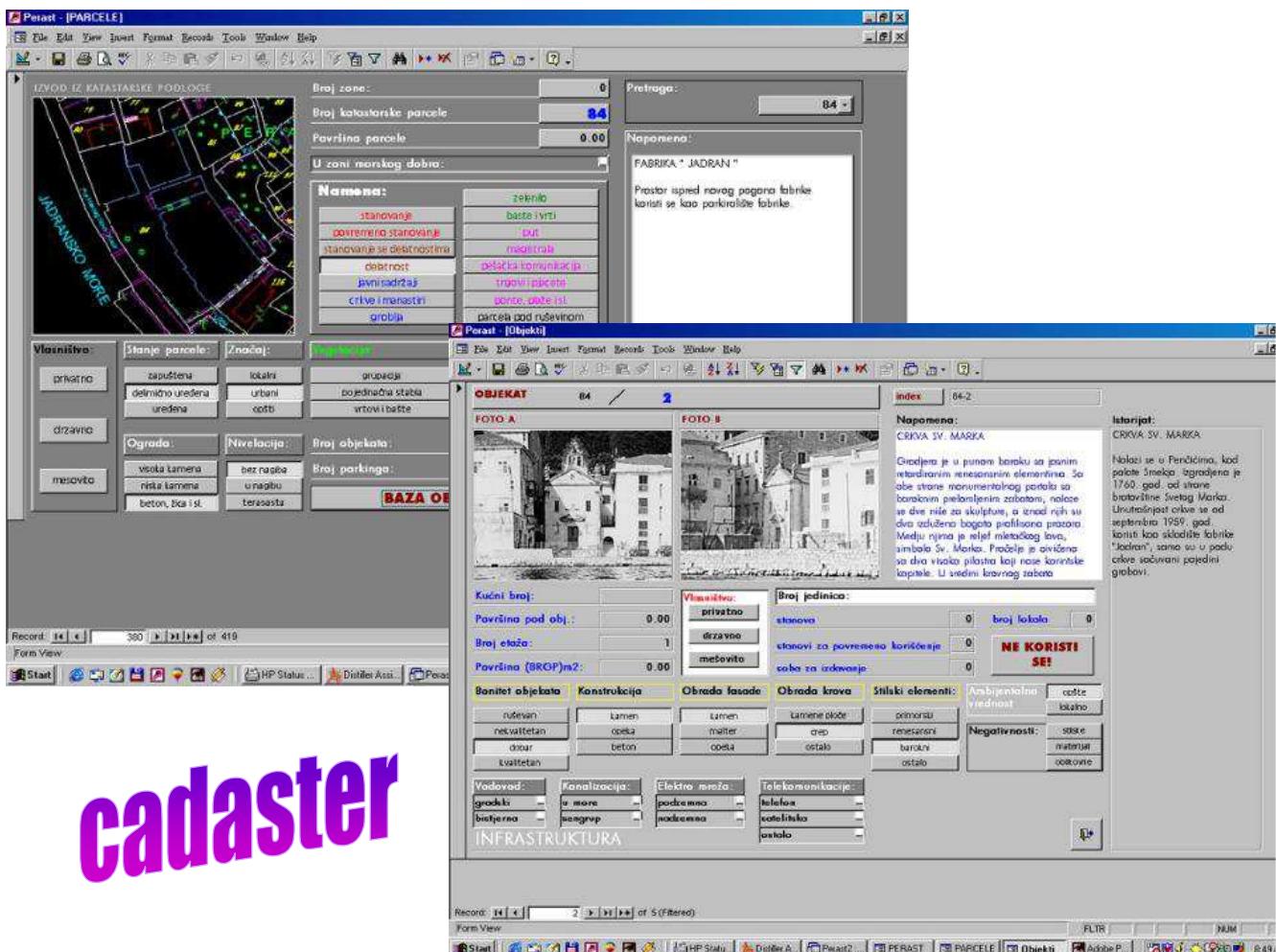


URBANISTIČKI PROJEKAT GRADA PERASTA

MonteCep
Kotor

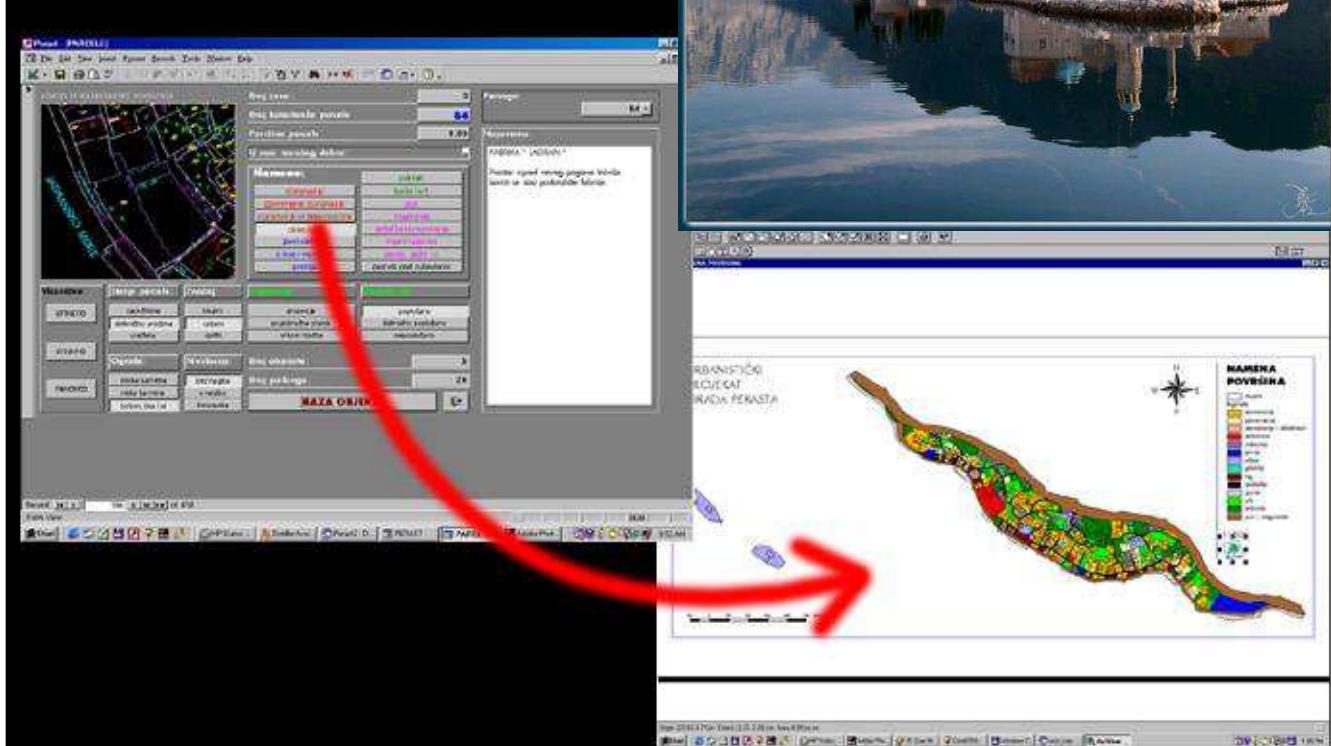


kontakt plan
juni 1999



cadaster

Spatial Data
of all parcels and buildings
before any Design Proposal



PERAST

Traditional Public events,
as a part of redevelopment strategy



Reclaiming old glory & tradition

Activating heritage resources - Incentives for owners and investors to joint efforts in reconstruction and revitalization



MASTER PLANNING

2



transition



Centar za planiranje urbanog razvoja, Zahumska 34 Beograd MCMXCIX



Kraljevo, aerial photos, 2002

KRALJEVO GENERAL PLAN 2000



KRALJEVO

START



rukovodilac
Milorad Miladinović, dipl.ing. arh.

rukovodilac
Žaklina Gligorijević, dipl.ing. arh.

radni tim:

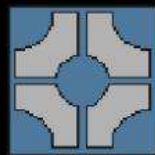
Dragan Jemović, dipl. prost. planer
Mirjana Dimitrić, dipl.ing. arh.
Slaviša Čamagić, dipl.ing. arh.
Vesna Miradić, dipl. prost. planer
Dušan Sretović, dipl.ing. grad.
Radosava Damjanović, dipl.ing. grad.
Radoljub Šarac, dipl.ing. el.
Milenko Dzidarević, dipl.ing. el.
Vukašin Simeunović, dipl.ing. maš.
Tamara Pešić, eng. grad.
Gordana Kalinić, grad. teh.
Zoran Rudinac, grad. teh.

radni tim:

Saša Karajović, dipl. prost. planer
Uroš Vuković, dipl.ing. arh.
Jelena Radivojević, dipl.ing. arh.
Katarina Pandurov, dipl. mat.
Biljana Gligorijević, aps. arh.
Milan Pavlović, dipl. ing. saob.
Dr Branislav Stanić, dipl.ing. grad.
Damjan Kozlović, dipl.ing. grad.
Milan Kozlović, dipl.ing. grad.
Darinka Novčić, dipl.ing. hort.
Dr Gavrilo Mihaljević, dipl. ec.

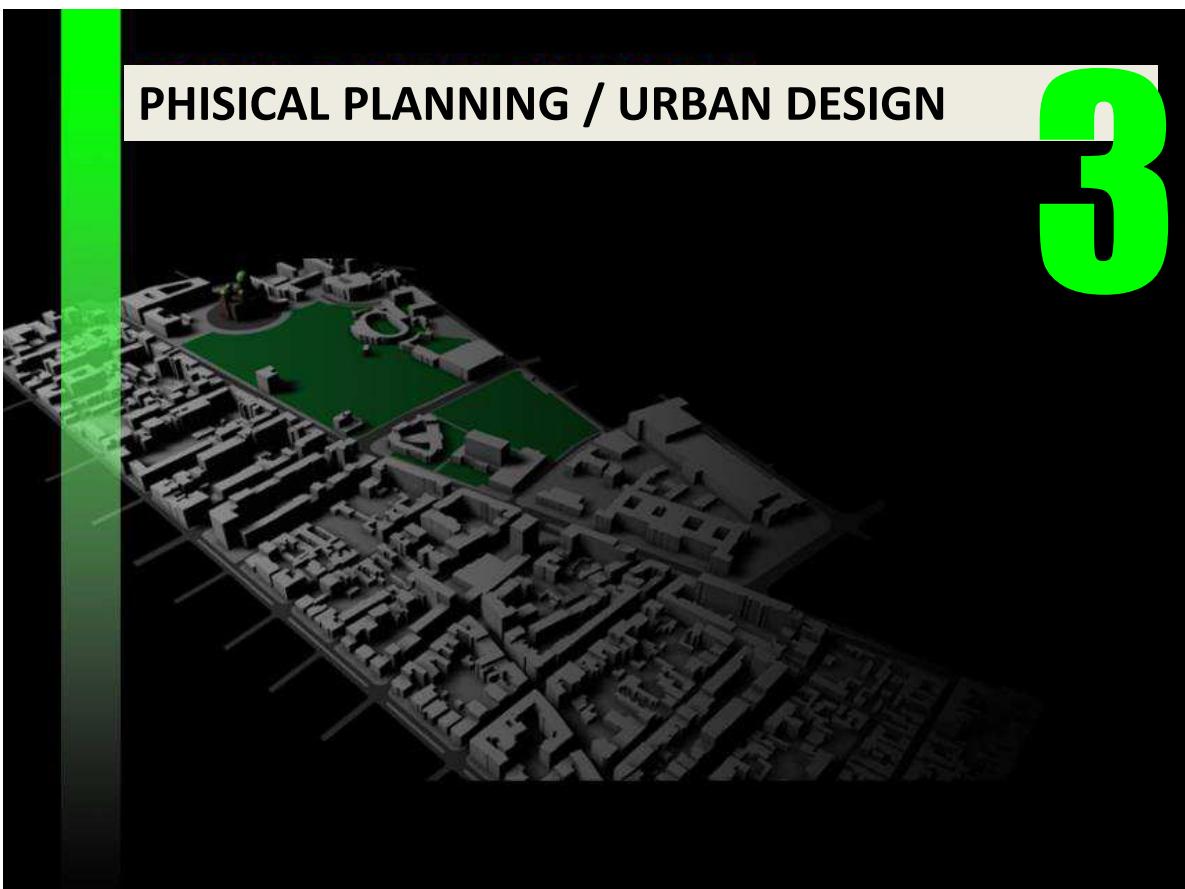
Direktor
Milutin Mandić

Direktor
Zoran Rubinjoni



PHISICAL PLANNING / URBAN DESIGN

3



BULEVAR



Centar za planiranje urbanog razvoja, Zahumska 34 Beograd MCMXCVI



illegal constructions



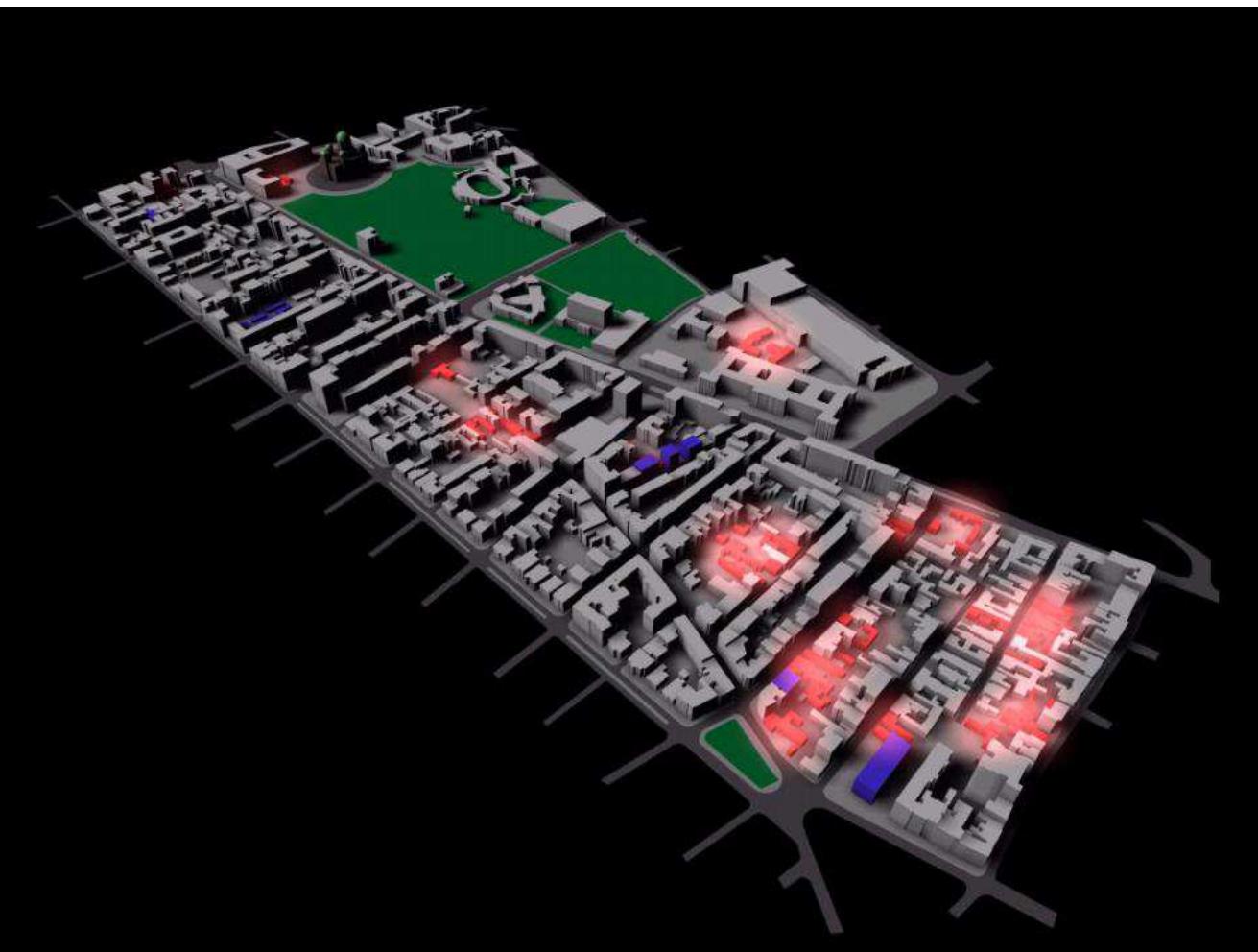
REGULACIONI PLAN BULEVARA REVOLUCIJE

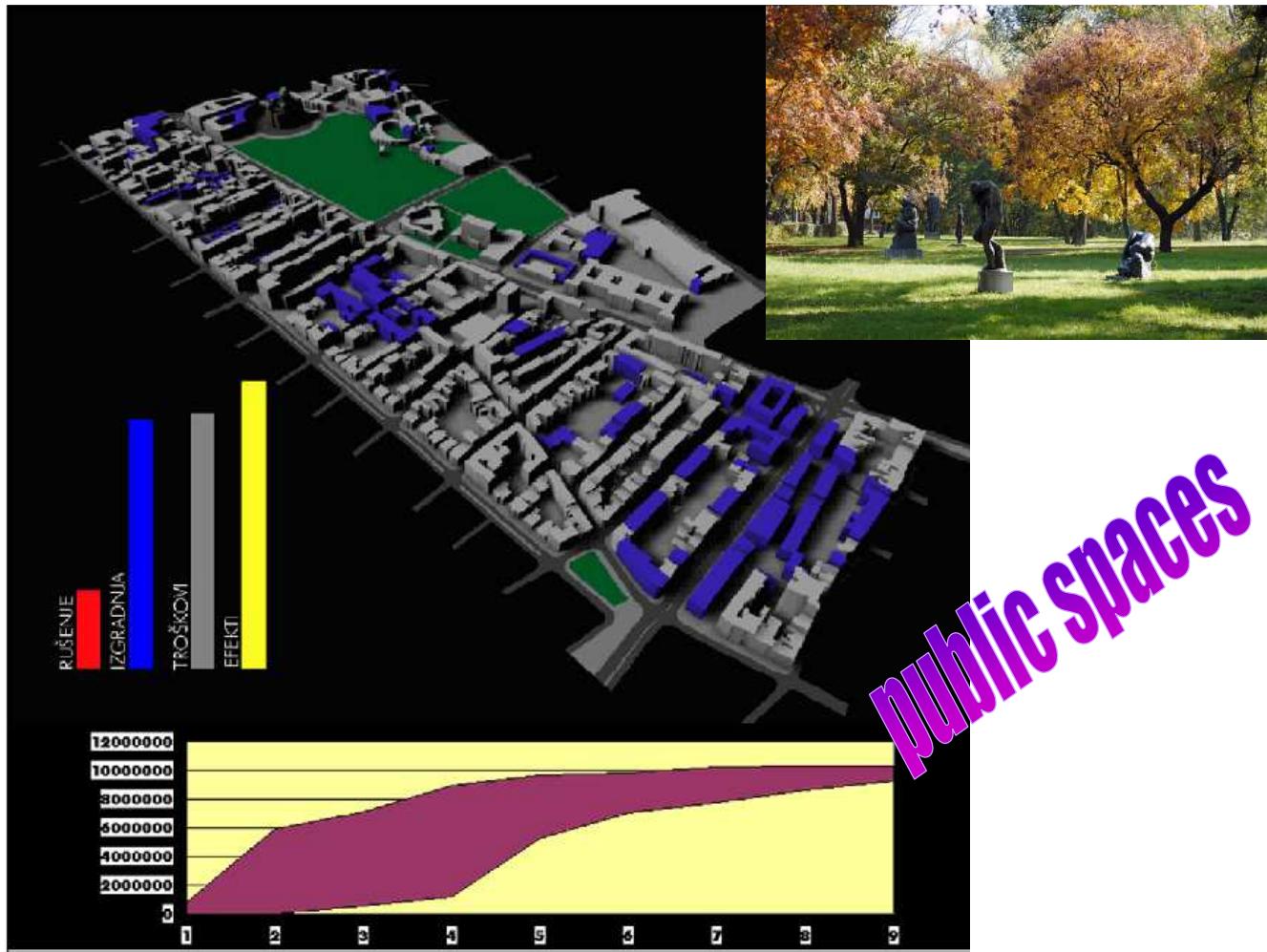
DEONICA "A" OD ULICE TAKOVSKЕ DO ULICE SINDELIĆEVE



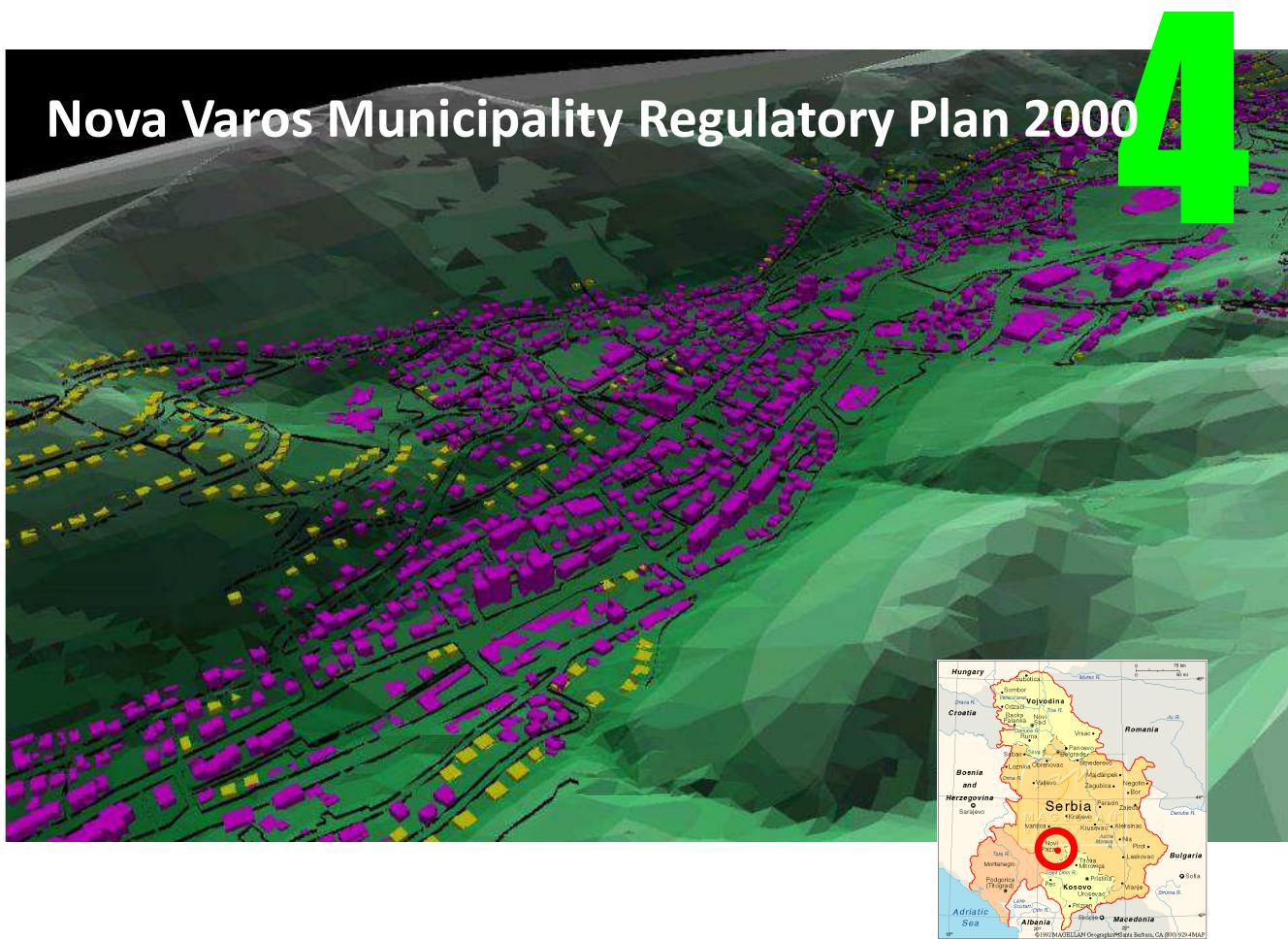
REGULACIONI PLAN BULEVARA REVOLUCIJE

DEONICA "A" OD ULICE TAKOVSKOJE DO ULICE SINDELIČEVE

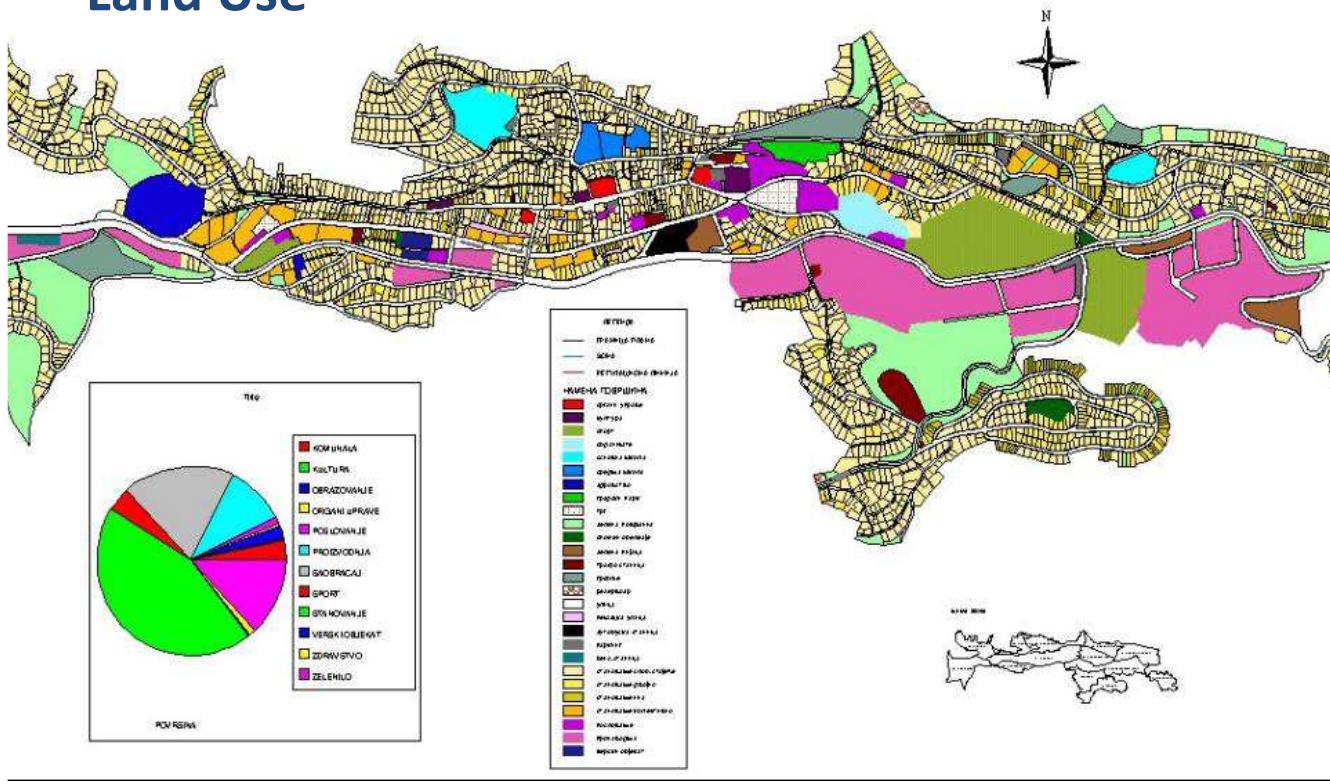




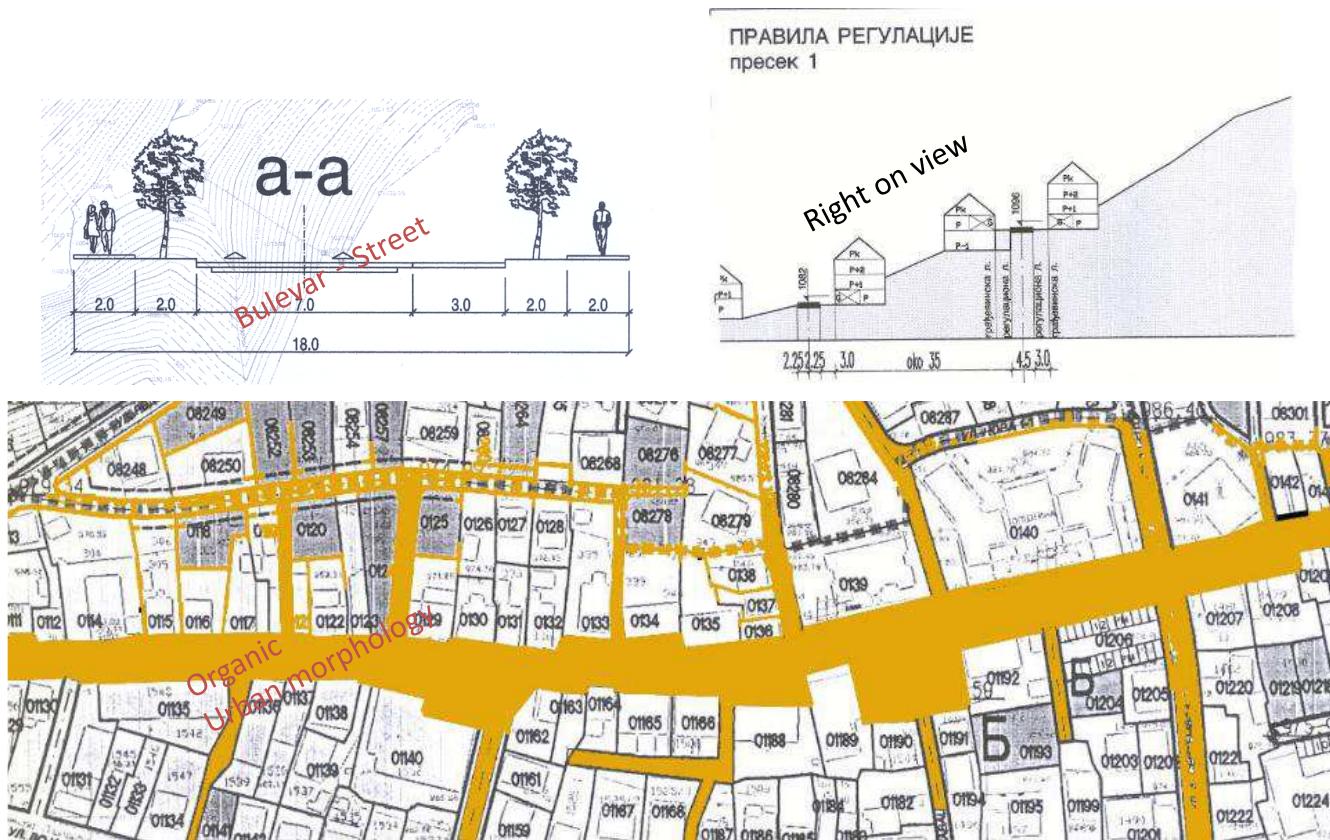
public spaces



Land Use



Local Identity – Specific planning approach



Amsterdam Small steps 2017

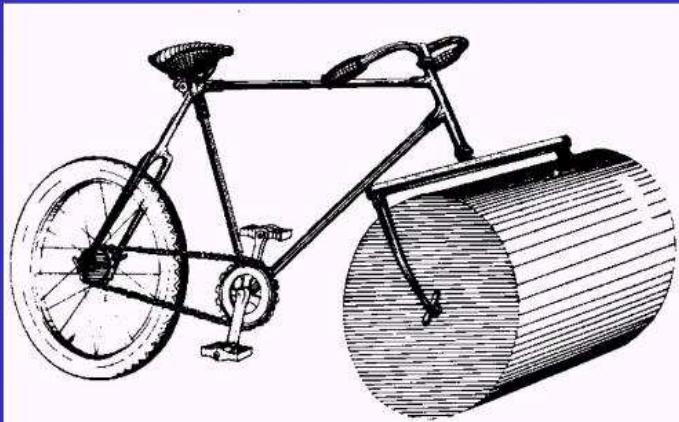


"Shoot for the moon.
Even if you miss,
you'll land among
the stars."

feasible projects

5

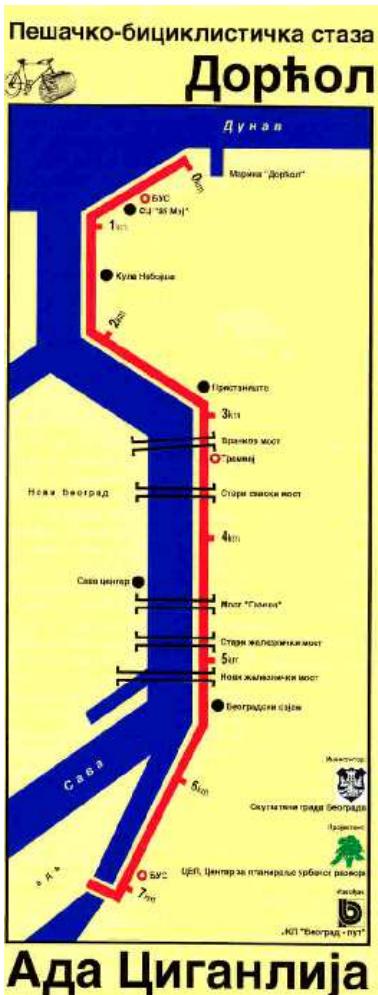
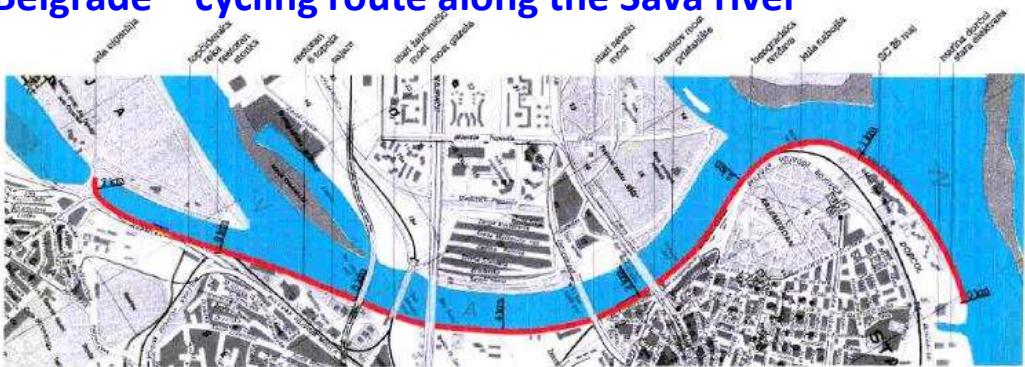
- ◆ GRAĐEVINSKI PROJEKAT
- ◆ SAOBRĀCJNA OPREMA
- ◆ REKLAME
- ◆ KOMERCIJALNI SADRŽAJI



Small steps towards sustainability



Belgrade – cycling route along the Sava river



**Around the
Belgrade Fortress**





Instead of the BIG DIG...

#ON CITIES AND CHANGES...



“Urbanized”, 2011

This is the century for City lovers!

Bruce Katz, Metropolitan Policy Program, Brookings Institution
<https://www.youtube.com/watch?v=llpavqpuO10>

“...The challenge in the future will be how to manage demography.

The physical plan for the city per se will not be able to determine the success of the city. Architecture will not be the only spectacle, and

THE critical challenge is going to be how you intersect architecture with mobility, with creating a human environment through design.”

“In the most of the developing world the cities are perceived as a problem, not as an asset.

The good news are agriculture, mining, etc. not cities: big, expensive, lacking services, with a lot of people, demanding, hungry, etc.”

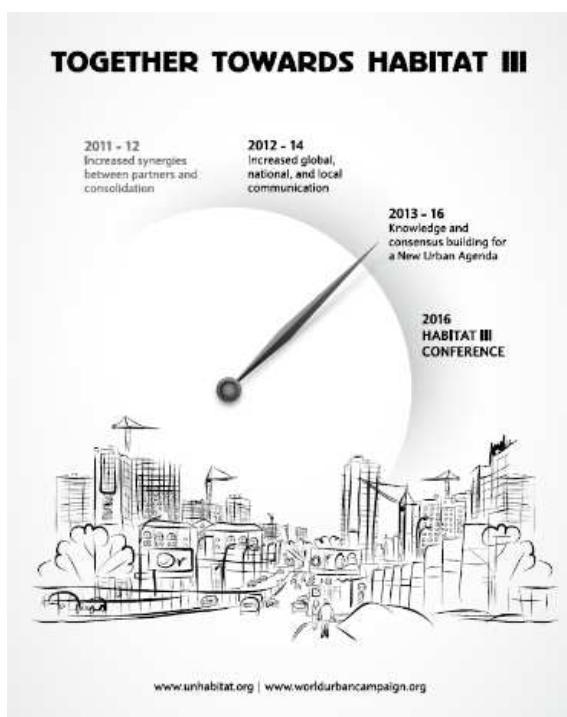
Joan Clos i Matheu, executive director of UN-HABITAT
<https://www.youtube.com/watch?v=rwJuODw0ACc>

Leaders at all levels of government need to step up to meet the challenges of an increasingly urbanized world features?

Global Trends (treaths?): Seven Revolutions

<http://csis.org/program/seven-revolutions>

- 1: Population**
- 2: Resource Management**
- 3: Technology**
- 4: Information and Knowledge**
- 5: Economics**
- 6: Security**
- 7: Governance**



Principles for a New Urban Paradigm

1. The city we need is Smart, culturally flourishing, well planned and designed.

... applying new technology (internet and big data) to upgrade the city management, public services, public mobilization and effective involvement and participation in public affairs.

C40 CITIES

CIRCLE ECONOMY

CIRCLE CITIES PROGRAMME

Jurn de Winter
Jurn@circle-economy.com

smart city expo
WORLD CONGRESS

17 - 19 NOVEMBER 2015
GRAN VIA VENUE

EVENT CONGRESS AWARDS EXHIBIT VISIT SIDE EVENTS ACTIVITIES MEDIA PARTNERS CONTACT

REGISTER AS A VISITOR

SCEWC: The smart place to be

REGISTER NOW



Technology

Services integration, sensors, cloud, apps, **geo information, data analysis.**

Society

Social innovation, livable cities, collaboration, social well-being, sharing services.

Governance

Open government, open data, new public-private collaboration frameworks, innovation networks.

Sustainability

Urban growth, zero carbon & green buildings, urban regeneration, energy efficiency.

Mobility

Integrate, **apps, technologies**, public transport, pedestrians, electric vehicles.

Innovation & Startups by 4YFN

Startups, new key players for Urban Innovation.

Bcn Rail Congress

a platform to present and discuss new technologies and successful solutions, Smart Mobility.

Circular Economy

turning the way we make, use and dispose our resources on its head by maximizing usage and value and then reusing the materials...



- Not always national laws and policies are crucial for sustainable urban or local spatial development, not the same strategies are giving results in different areas or districts.
- Catalonia is one of the Spanish regions with highly developed strategic and operational capacity for low carbon development.
- Barcelona - one of the world leaders in sustainable urban design, since the beginning of the century.

Web version | Update preferences | Unsubscribe | Like | Tweet | Forward

Barcelona Good News
Economic newsletter

November 2015

Barcelona hosts the first edition of the Big Data Congress

Barcelona rises up to EBB+ in the ratings of Standard & Poor's Source: Bloomberg

IBRO COMPETITIVE

Bims Solutions This startup won the EcoInnovationXXI Awards (Barcelona City Council)

Minoryx Therapeutics This company

- **Vienna** has been holding the first position on the Mercer consulting list for years, according to its quality of life.
(source: <http://www.clue-project.eu/web/page.aspx?refid=56>)



The **Smart City Wien Framework Strategy** is a long term umbrella strategy to 2050 that will establish a conducive and structural framework.

The key objective for 2050 is the best **quality of life** for all inhabitants of Vienna, while minimizing the consumption of **resources**. This will be realized through comprehensive **innovation**.

- Core issue for the “smart city” vision: Operating sustainably in ways that save resources. Objectives: to curb energy consumption, pushing forcefully with renewable energies, to the benefit of the environment, the economy and the people living in the cities.
- Vienna city council enacted the update of the climate protection program (KLIP II), valid until 2020. KLIP I was enacted 1999 and consists of 37 sets of measures with a total of 385 individual measures in the five fields of action: Energy supply, Use of energy, Mobility and town-structure, Procurement, waste management, agriculture and forestry, nature conservation, and Public relations.
<http://www.wien.gv.at/english/environment/klip>
- New housing spaces need flexible traffic solutions: car sharing or car-free housing. Vienna’s first car-free residential complex was built in 1999.
- 1998 Vienna launched the EcoBusinessPlan - businesses can join on a voluntary basis to generate clean gains for the environment and for businesses by operating ecologically.
- In 2012 residents could buy shares in 4 public solar plants and make a valuable and profitable contribution to energy production that goes easy on the environment.

Smart cities are intelligent, knowledgeable and creative

Singapore, <https://www.youtube.com/watch?v=W7yDCTi6UjQ>

“Our cities are centers of innovation where minds and machines are working together to create the game changing technologies. The challenge is how to create the right collaborative environment to encourage that creativity?”

The most interesting research today is where the different disciplines intersect. And cities are also intersections, crossroads of cultures and centers of exchange.

Innovative and well designed...



"Warde" - HQ's Blooming Flowers React to the Presence of Pedestrians in Jerusalem's Vallero Square



SMART PLANING – CITY OF BELGRADE DEVELOPMENT STRATEGY

SUSTAINABLE URBAN DEVELOPMENT



PLAN v.s. STRATEGY :

The image of the future city –
Integral development process.

The City We Want?

The goal, long-term vision
horizon: 20, 30 years

How to Reach the Goal?

Process definition, methods, resources:
the first step: a 5 years action plan

City of Belgrade Development Strategy 2016–2021 URBAN DEVELOPMENT VISION

URBAN DEVELOPMENT ASPECTS 2 x 2

1. Regional/ European /Global context
Local context – the city for its citizens
2. Long-term vision, and
Action plan for 2021



IDENTITY

МОБИЛНОСТ

MOBILITY

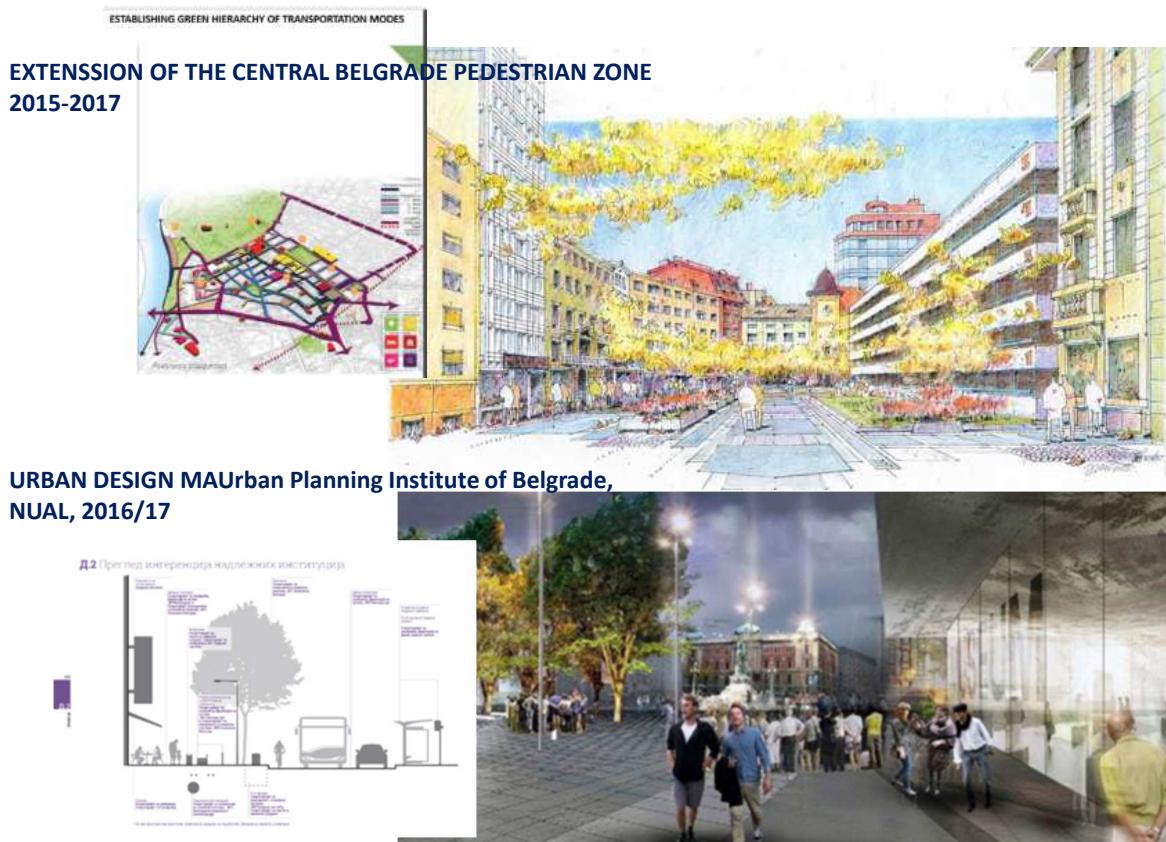
ЕКОЛОГИЈА

ECOLOGY

Small sectoral steps



IME PROJECT / Identity, Mobility, Environment, 2015



N1

20 PRIORITY PROJECTS FROM 2015

ПРИРУЧНИК ЗА ОТВОРЕНЕ ЈАВНЕ ПРОСТОРЕ URBAN DESIGN MANUAL



BUrIS

Belgrade Urban(istic) Information System

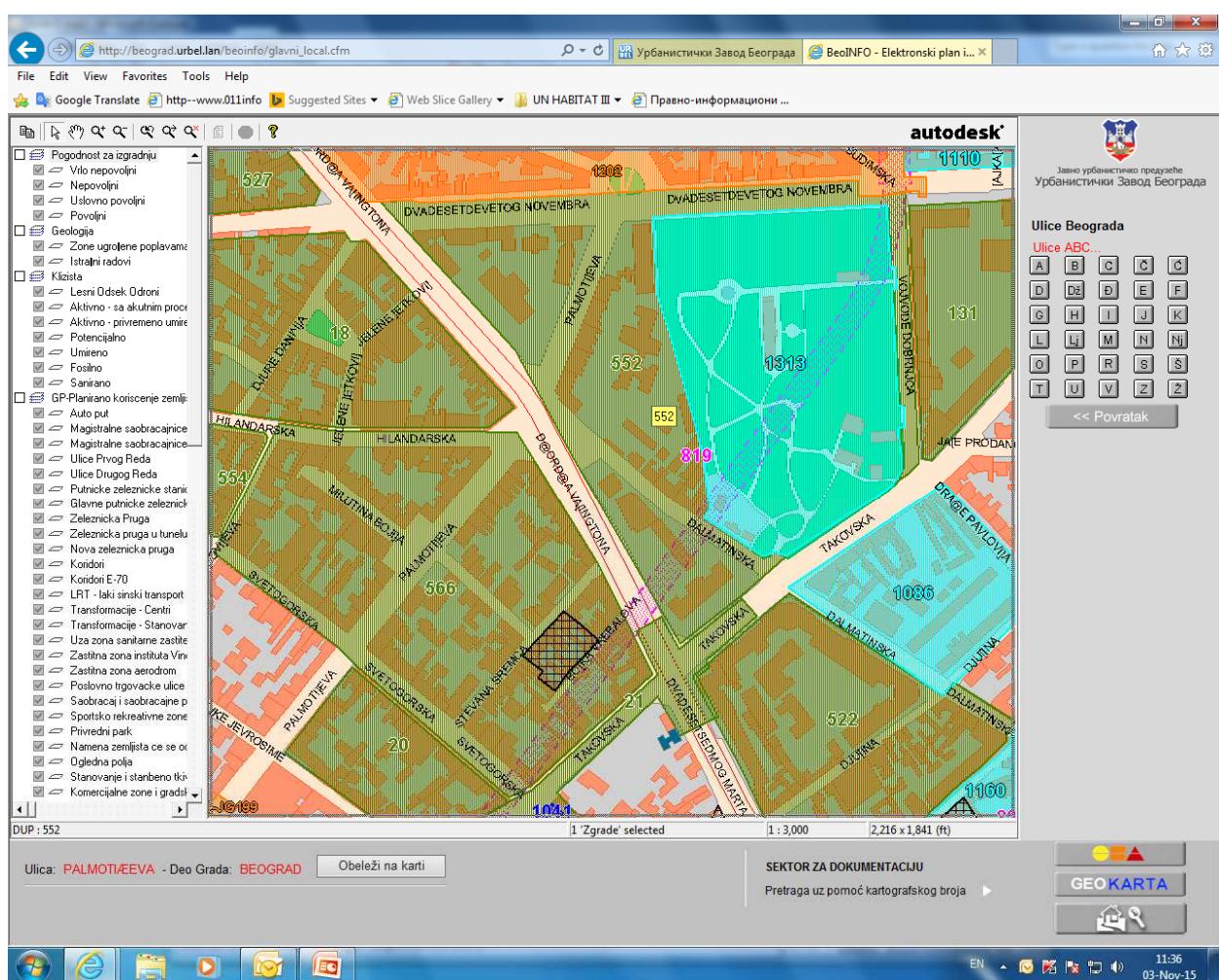
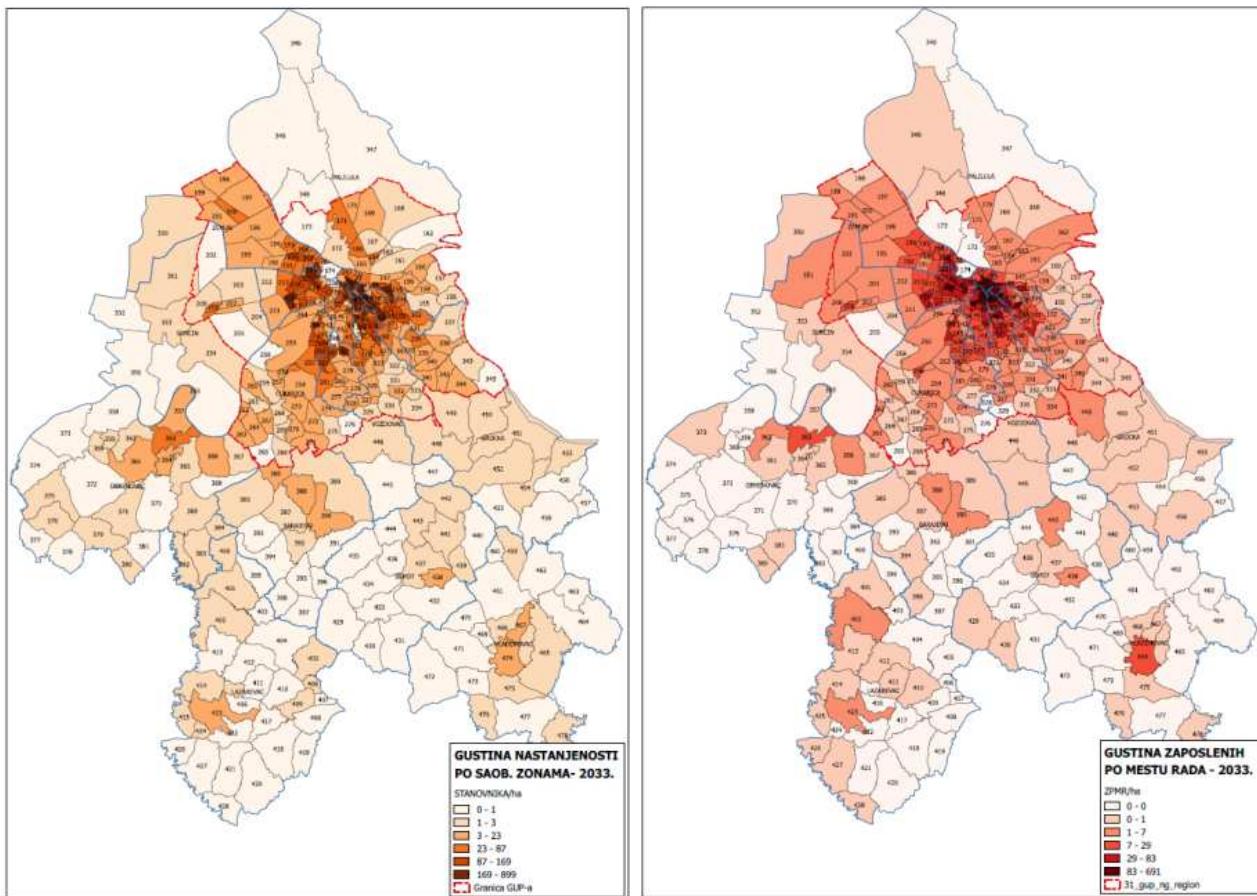
2004,
2008,
2016

The image shows a screenshot of the BURIS system. On the left is a vertical document titled 'Информација о локацији унутрашњине базе података' (Information about the location of the internal base data) for 'Кадастарска парцела 8705'. The document contains numerous tables and text sections, likely detailing property boundaries, ownership, and other legal information. On the right is a cadastral map of Belgrade, specifically the 'Савски венац' (Sava Riverbank) area. The map is overlaid with a grid of property parcels, each labeled with a unique identifier such as '8705', '8716', '8717', etc. A large blue arrow points from the top of the document towards the map, indicating the connection between the digital record and the physical land area.

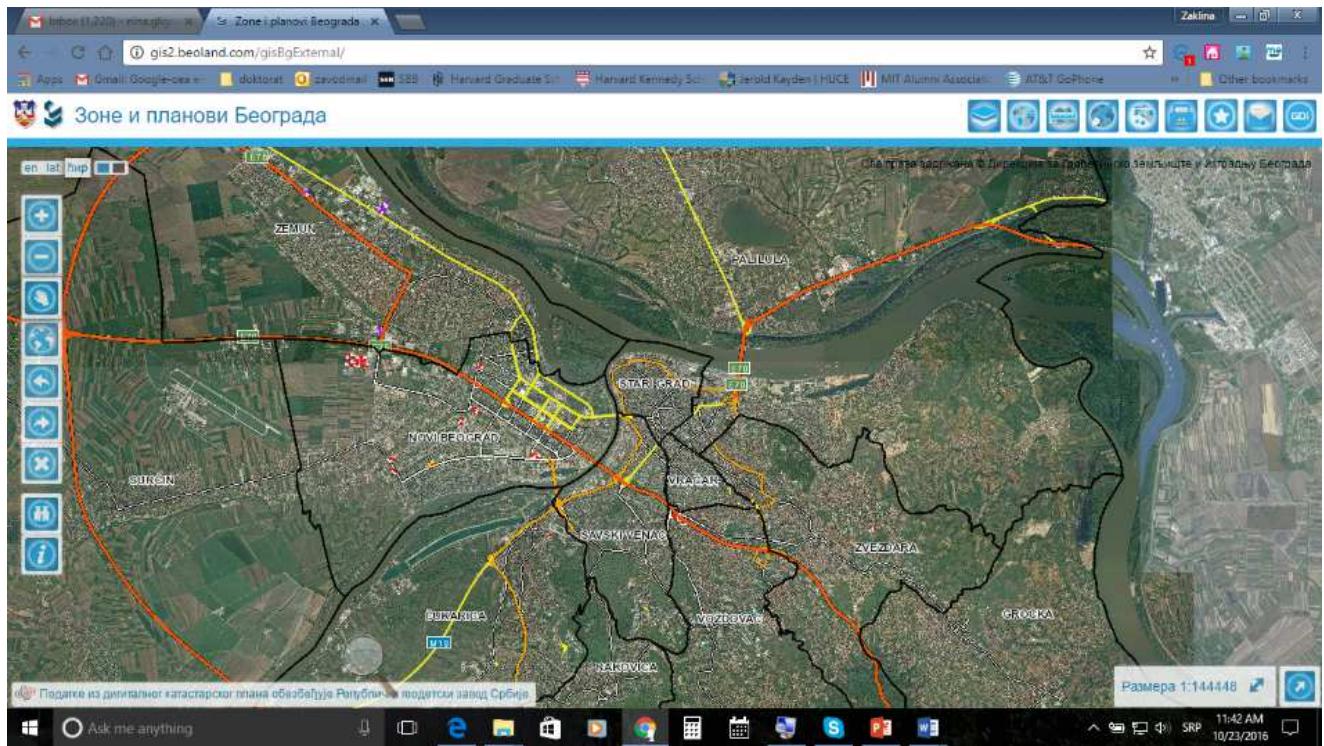
Small institutional steps

Urban Planning Institute of Belgrade

Belgrade Metropolitan Area density per ha 2033 (home/work)

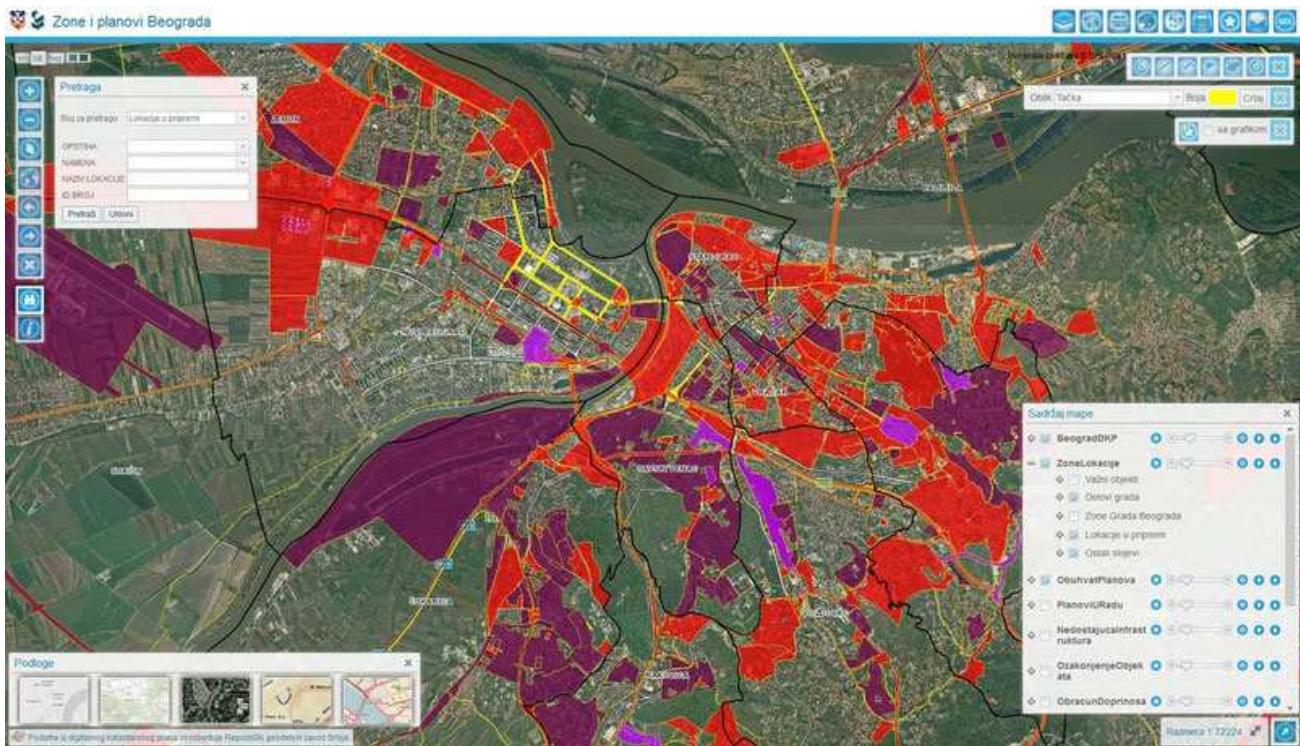


<http://gis2.beoland.com/gisBgExternal/>

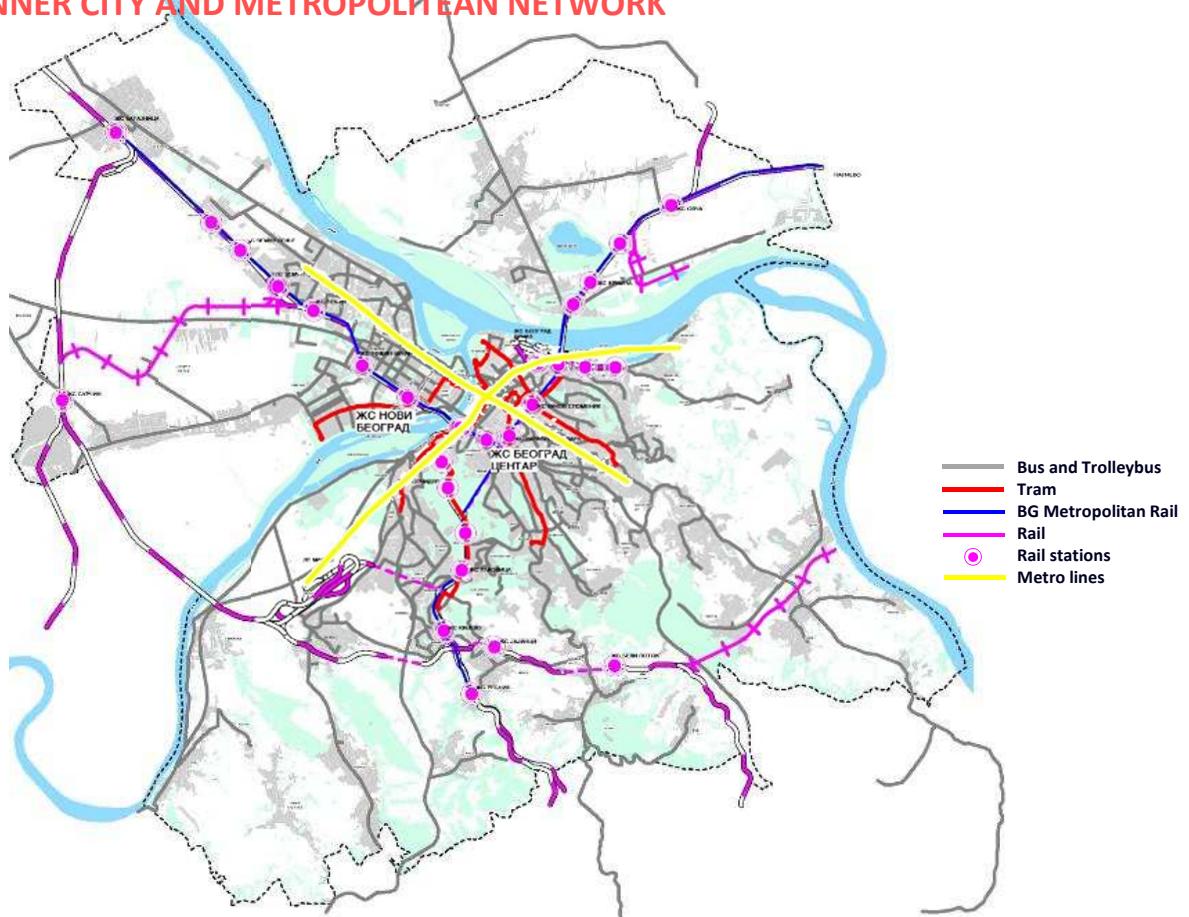


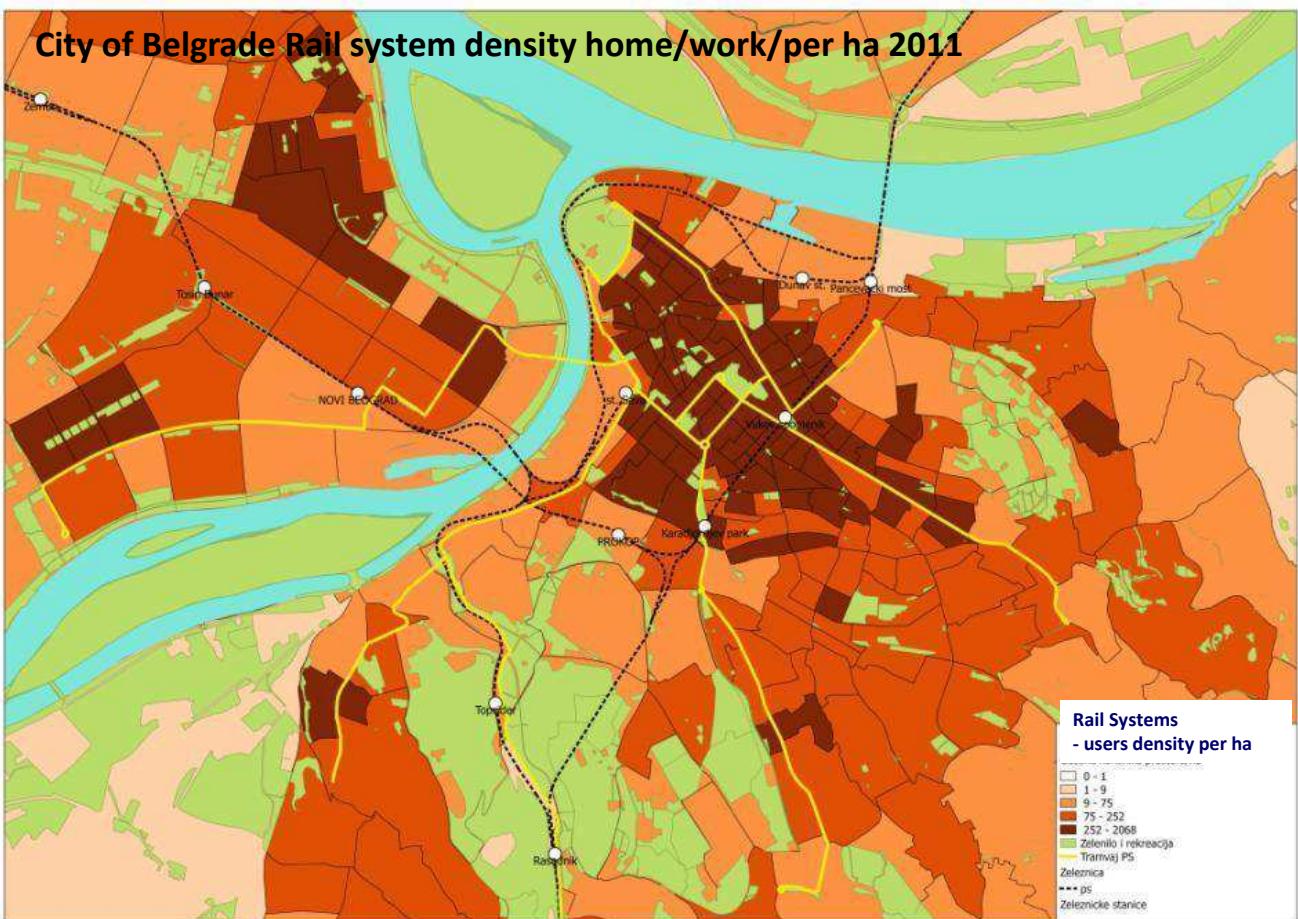
Belgrade Land Development Agency





CITY OF BELGRADE INTEGRATED PUBLIC TRANSPORT PLAN 2017 INNER CITY AND METROPOLITAN NETWORK





Small creative steps



The **Strawberry Tree** is the world's first public solar charger of mobile devices, developed by Serbian company "Strawberry Energy" who won the European Commission's "Sustainable energy week 2011" competition in Brussels (Consuming category).



Strawberry Tree Black in Tašmajdan Park in Belgrade.jpg Created: 23 November 2012, by [Renewablesfuture](#), designed by architect Miloš Milivojević



BEO-KOM servis - Služba za komunikacije i koordinaciju odnosa sa građanima

Home About Photos Likes Videos Posts

www.facebook.com/248903638280/photos/10154618740523281/

BEOKOM servis - Služba za komunikacije i koordinaciju odnosa sa građanima

October 21 at 12:33pm · 6

Информација о изменама режима рада линија ЈГП-а због одржавања спортске манифестације „65. Улична трка ослобођења града Београда“

Информација о изменама режима рада линија ЈГП-а због одржавања спортске манифестације „65. Улична трка ослобођења града Београда“

1,618 people like this

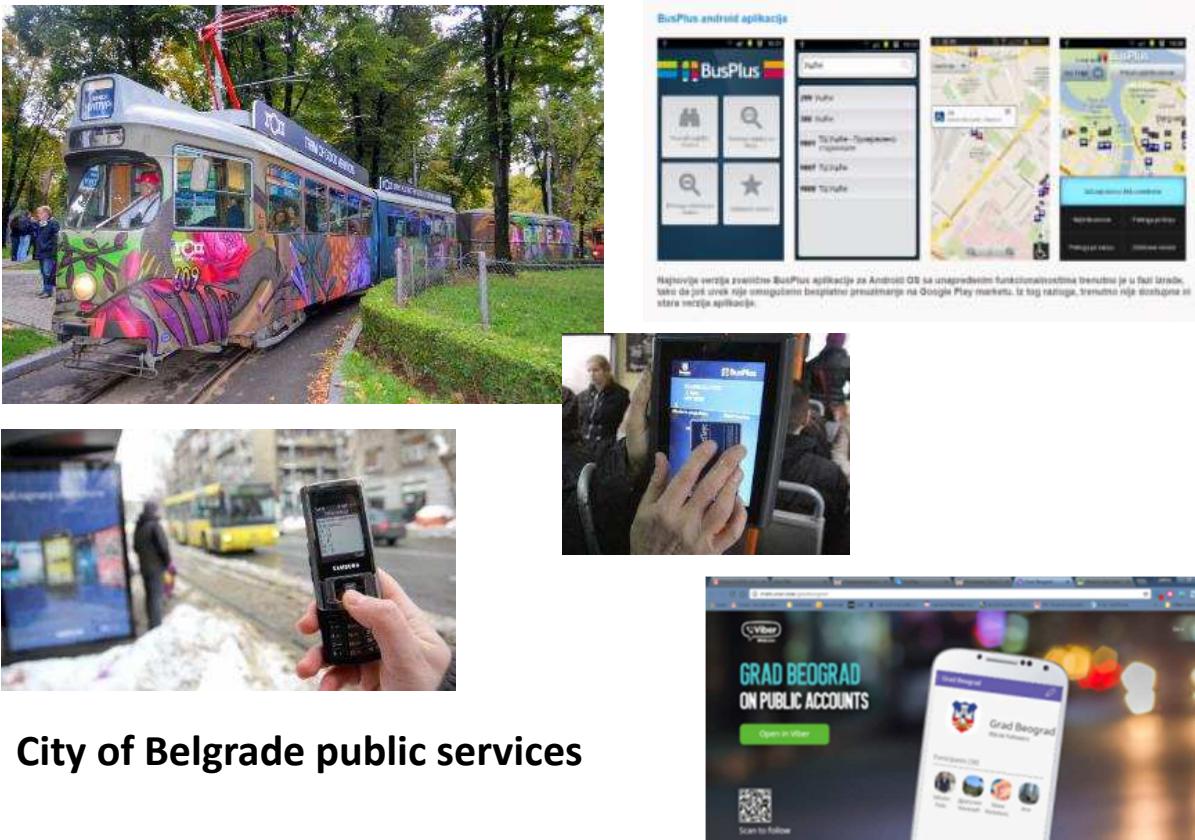
Caranovic Predrag and 2 other friends

BEOGRAĐANIN

BEO-KOM

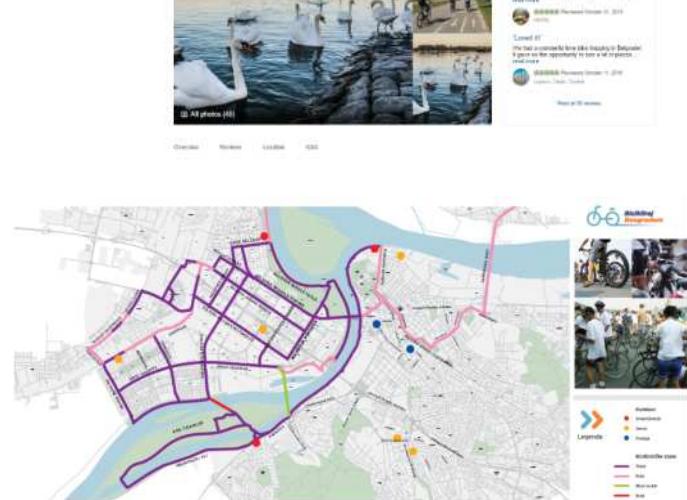
IME

BELGRADE TODAY AND VISIONARY PROJECTS



City of Belgrade public services

Cycling as the new transportation priority and part of the Belgrade SMART solutions





SMART Parking



<http://parking-servis.co.rs/eng/>

The screenshot shows the ParkMe mobile application's main screen. At the top, there are two cards: one for 'Opening hours during vacation' (valid until 18/12/2013) and another for 'The arrival season of ParkMe garages in France' (valid until 200 locations ready for use by 04/12/2013). Below these are two more cards: one for 'Management works have been successfully completed in eight garages' (valid until 03/01/2013) and one for 'Find your vehicle' with a 'Scan plate number' button. The central part of the screen features a large banner with the text 'INTERNATIONAL TERMINAL ALL IN ONE PLACE!' over an image of a modern terminal building. At the bottom, there are four cards: 'Available Parking Spaces' (with a heart icon), 'Zone System Subscription' (with a car icon), 'Debit Parking Card Skip the queue' (with a car and bus icon), and 'Parking for Persons with Disabilities' (with a wheelchair icon).

The screenshot shows the Parking Manjak website. At the top left is a contact form with fields for name, phone number, and message. To its right is a large image of a parking meter on a city street. Below the image are sections for 'ПЛАЋАЊЕ ПО ЗАПОЧЕТОМ ЧАСУ' (Payment by start of time) and 'СМС ПЛАЋАЊЕ' (SMS payment). The SMS payment section includes a table with five rows of information, each with a colored square icon and a number followed by a description. At the bottom right is a logo for 'Parking Manjak'.

■	9111 - за час времена у зони 1 - централна зона
■	9112 - за час времена у зони 2 - најути зона
■	9113 - за час времена у зони 3 - изолована зона
■	9119 - за час времена на терени
■	9118 - за склонско паркирање на терени



* For use in Mexico only.

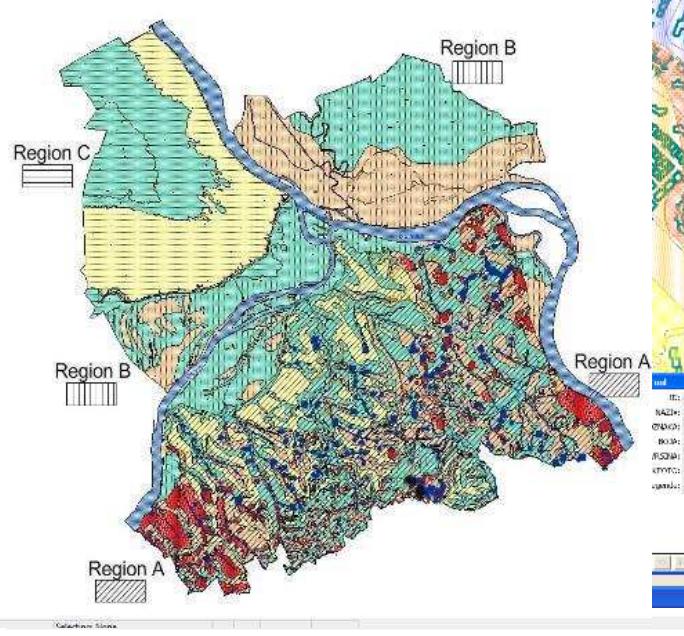


Floods 2006.

Street surf,
Belgrade Fortress, April 2006.

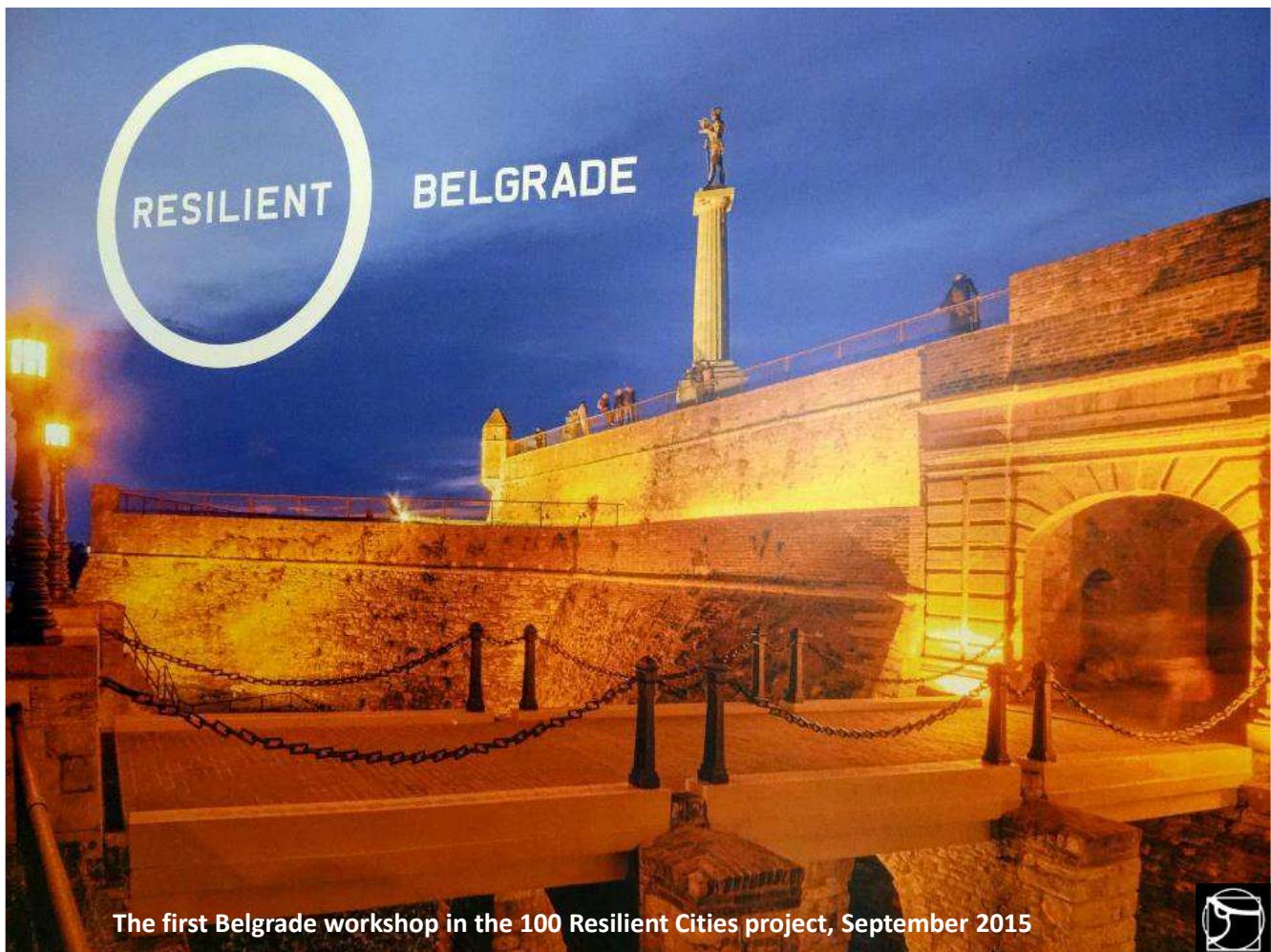


Geologic Data



Climate Change Adaptation Action Plan and Vulnerability Assessment

CITY OF BELGRADE Secretariat for Environmental Protection <http://klimatskepromenebeograd.rs/>





Belgrade Faculty of Philosophy, Department for Archeology, Archeologic Site Vinča 2005

Main Menu
Navigator
Keramika
C-Nalazi
Nivelman
Objekti
Zone
Grid
Texture

Blok: D/II Kvadrat: 3 Belgrade Faculty of Philosophy, Department for Archeology, Archeological Site Vinča 2005



Small steps are important...

- The benefits from using and sharing data, geo spatial data or open data for the cities were clear since 25 years ago. **Professionals in cities have no doubts😊** and already have gained skills.
- **Public sector should grow accordingly, putting efforts in education and capacity building.**
- **Regions (and states)** should join cities with improved legislations, strategies and financial/technical support so they could grow SMART together, in cooperation and communication with citizens, private companies, non profits and civils sector.

That might be the way to strengthen links and cooperation with neighboring EU states and regions (e.g. Danube) in achieving common interests (environment, transportation, CO2 emission, trade and education).



Thank you for your attention!
zaklina.gligorijevic@urbel.com



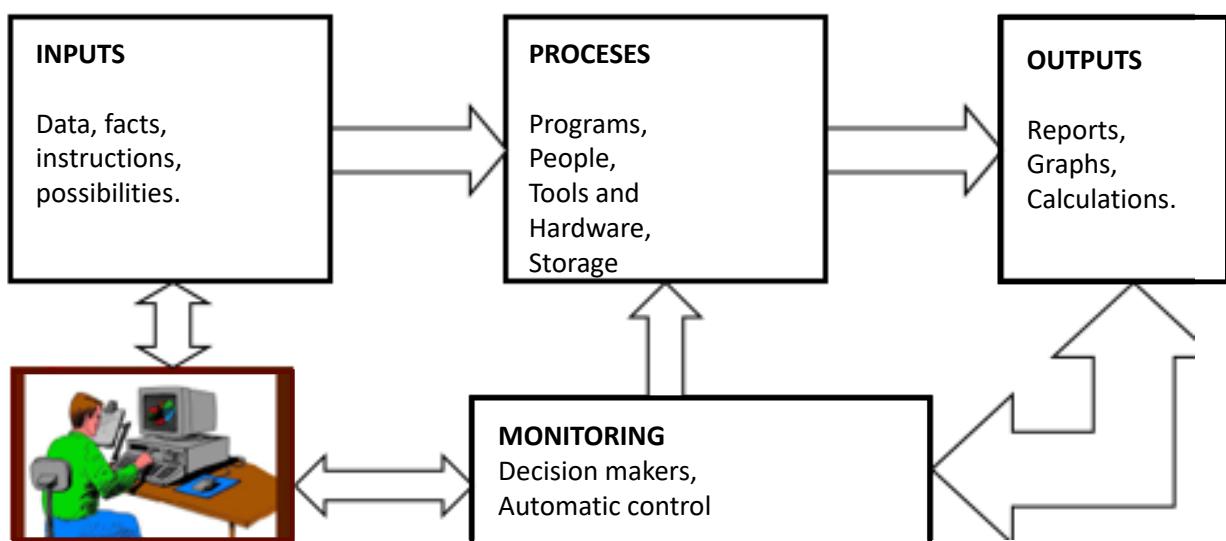
Workshop: Land Information Systems in the Danube Region
Quality of Data & Access to the Public, June, 12-13, 2017, Belgrade



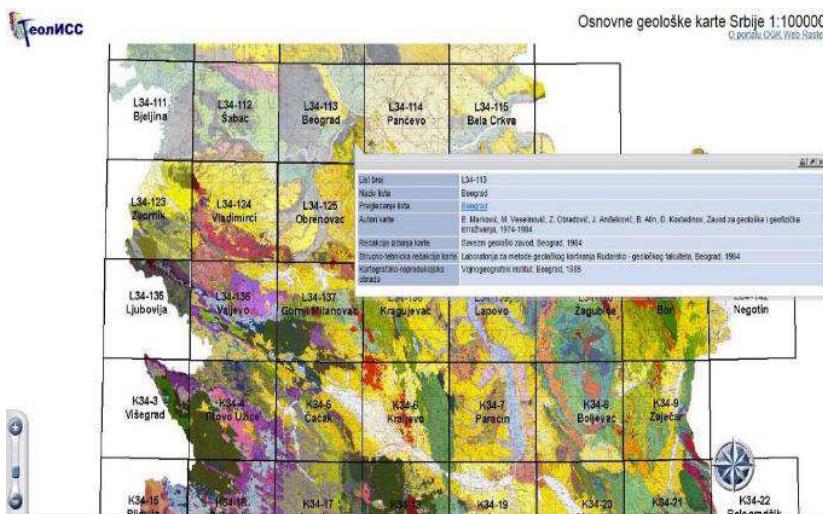
BELGRADE "GEOL" DATABASE

URBAN PLANNING INSTITUTE OF BELGRADE, Director, Vesna Tahov, M.Sci Geol. Eng.

Information Systems



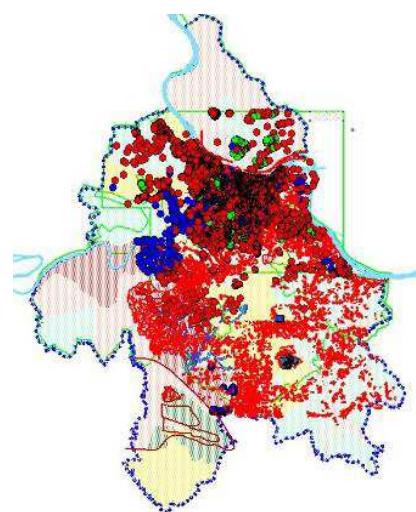
Geologic Information System



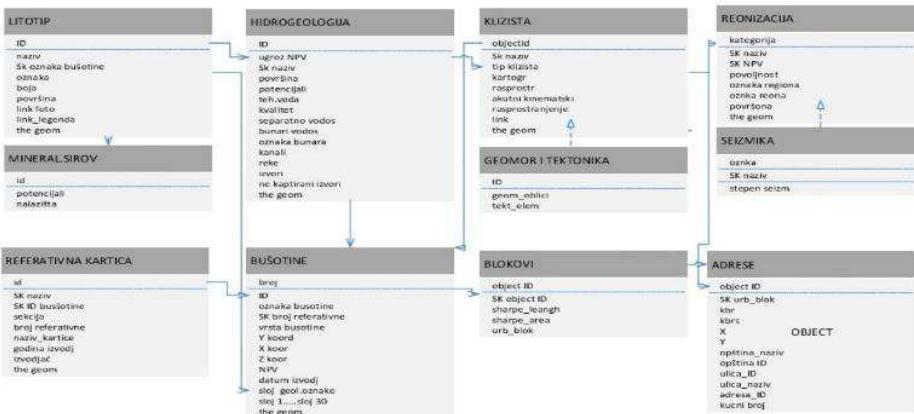
City of BELGRADE GEOL DATABASE

Based on the national system - WGS84-UTM zone 34

- Collecting Data,
- Organization,
- Hardware and software,
- Structure,
- Safety and security,
- Size,
- Users, and
- Budget for organization and maintenance.



The Structure



Entities identification

Models (thematic field, attributes)

Graphic presentation of the entity

Data model (hardware, software).

POSTGESSQL base

With POSTGIS components

Map Guide Open Source IS server

Digital key / Standardization

1. INŽENJERSKOGEOLOŠKA SVOJSTVA LITOGENETSKIH KOMPLEKSA I LITOTIPOVA											
Geološka stavka	Geološki tip	Kodige	Boja # Layer								
2. STRUKTURNO TEKTONSKI ELEMENTI											
RECENTNA Autogeno	Barki	Rased	Boja # Layer								
Proluvij	Pravilnost procesa	Fotogeolo	Boja # Layer								
Akvijalne stavke	Korbo procesi	Rasedna zo	Boja # Layer								
		Granica kv	Boja # Layer								
		Granica lit	Boja # Layer								
		Akt	Eroziona g (tačkice u liniji)	Boja # Layer							
			Diskordan	Boja # Layer							
			Granica vu	Boja # Layer							
		Alo	Elementi p u podni k	Boja # Layer							
			Elementi p u podni k	Boja # Layer							
			Granica i c u podni k	Boja # Layer							
			Stratoizoh	Boja # Layer							
3. SAVREMENE EGZODINAMIČKE POJAVE											
				Boja # Layer							
4. HIDROLOŠKE I HIDROGEOLOŠKE POJAVE I OBJEKTI											
				Boja # Layer							
5. LEŽIŠTA GEOLOŠKIH GRAĐEVINSKIH MATERIJALA											
				Boja # Layer							
6. EFEKTI INTERAKCIJE TEHNOGENIH AKTIVNOSTI I GEOLOŠKE SREDINE											
				Boja # Layer							
8. OSTALE OZNAKE											
				Boja # Layer							
				A	—	—	Linija inženjerskog preseka terena	250	ostalo		
							Granica i označe inženjerskog reona (mikroreona)	84	ostalo		
							Refrakcioni seizmički profil	250	ostalo		
							Merno mesto mikrorementra ili	250	ostalo		
							Granica seizmičkih mikroreona	250	ostalo		
							Poremećaj stabiliteta, kružanje	1	vlast		

SPATIAL AND ALFANUMERIC DATA

Klizista, Umireno, ... Map

LITOTIP Map

Klizista Map

Info Tool

Br:	20.842
D:	2.735
SEKCUJA:	Latovi 1,2,3,6,8,8a - List 8,8a
BROJ_REFERENTNE_KARTICE:	194209001
NAZIV_KARTICE:	GEOTEHNIKI USLOVI IZGRADNJE FABRIKE GUME "GALENKA"
br_litr_radovi:	2735-B5
Busotina:	
Bustotina	
X:	449.752,00176325
Y:	4,969,136,9965799
Z:	86,58
NPV:	7,2
DATUM_IZVO_ENA:	1978
SLOJ1:	0.0-1.8 Q2_pds
SLOJ2:	1.8-5.5 Q2_II
SLOJ3:	5.5-7.3 Q1_pdl
SLOJ4:	7.3-11.5 Q1_III
SLOJ5:	11.5-13.7 Q1_pdl
SLOJ6:	13.7-15.5 Q1_IV
SLOJ7:	15.5-16.0 Q1_ndv

LITOTIP Browser

ID	NAZIV	OZNAKA	BOJA	POVRINA	LINKFOTO	Link legenda
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0	deluvijalna drobina	Q2dd	D13	9.99	C:\GUP\tekst\legenda.doc	
0	deluvijum	Q2dpq	E7	2.20	C:\GUP\tekst\legenda.doc	
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0	deluvijum	Q2dpq	E7	4.20	C:\GUP\tekst\legenda.doc	
0	deluvijum	Q2dpq	E7	9.99	C:\GUP\tekst\legenda.doc	
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Busotina Browser

br	ID	SEKCUJA	BROJ_REFERENTNE_KARTICE	NAZIV_KARTICE
3,742	579	BEOGRAD 2,3	10-2-3168	IZVEŠTAJ O SONDRANU I GEOMEHANI, KOM ISI +
3,743	579	BEOGRAD 2,3	10-2-3168	IZVEŠTAJ O SONDRANU I GEOMEHANI, KOM ISI
3,744	580	BEOGRAD 2,4	10-2-4-001	GEOTEHNIKE KARAKTERISTIKE I SEIZMI, KA MIKR
3,745	580	BEOGRAD 2,4	10-2-4-001	GEOTEHNIKE KARAKTERISTIKE I SEIZMI, KA MIKR
3,746	580	BEOGRAD 2,4	10-2-4-001	GEOTEHNIKE KARAKTERISTIKE I SEIZMI, KA MIKR
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3,757	580	BEOGRAD 2,4	10-2-4-001	GEOTEHNIKE KARAKTERISTIKE I SEIZMI, KA MIKR
3,758	580	BEOGRAD 2,4	10-2-4-001	GEOTEHNIKE KARAKTERISTIKE I SEIZMI, KA MIKR

<http://mapa.urbel.com/beoinfo/>

Funkcije

- Poslovne jedinice
- Vozni objekti
- Čarke

U dole delu ekranu odaberite noku od posudjenih funkcija. Ili pristupite plan Beograda komandoma Autodesk MapGuide-a. Komandama Autodesk MapGuide-a se pristupa priskom na desni tastir mitsa kada se pokazuje mitsa nalet na mapi.

Stanje zakljучeno sa St i Digi-50-12
(26. septembar 2012)

GEO KARTA

The **GEOL** Content:

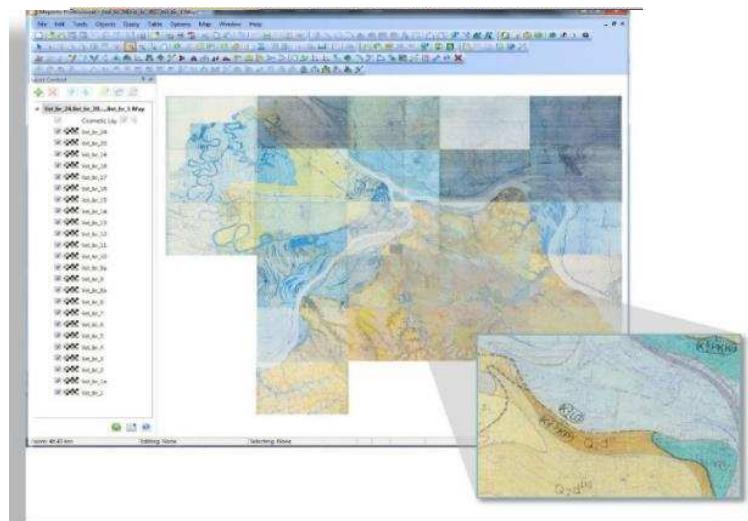
- Ortho photo map;
- Basic Geologic data,
- Hydro- geologic data,
- Seismology,
- Geotechnical data;
- Mineral resources, and
- Existing Geologic data

Ortho photo maps

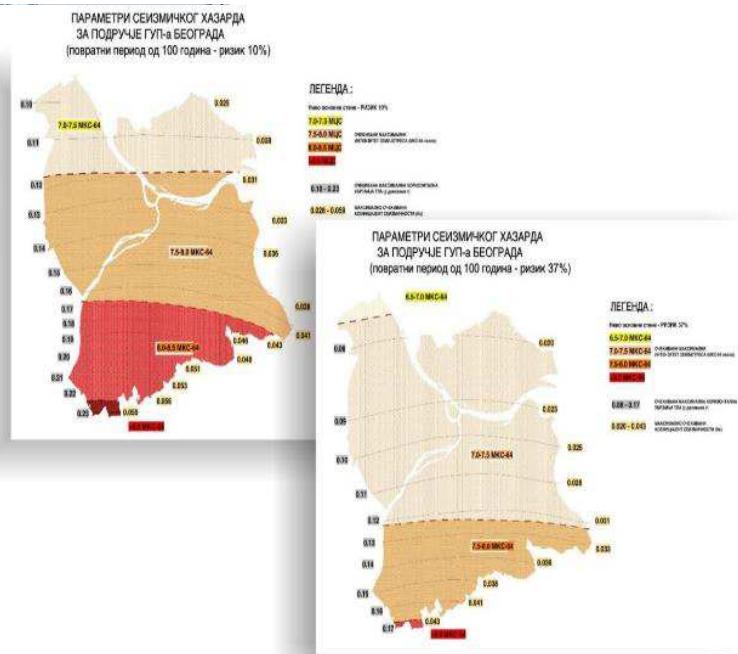
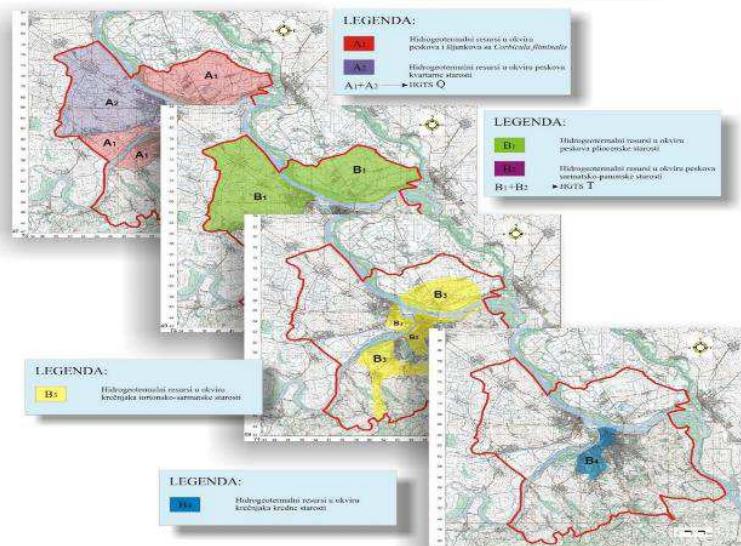


2001.
2007.
2010

2. Basic geologic data



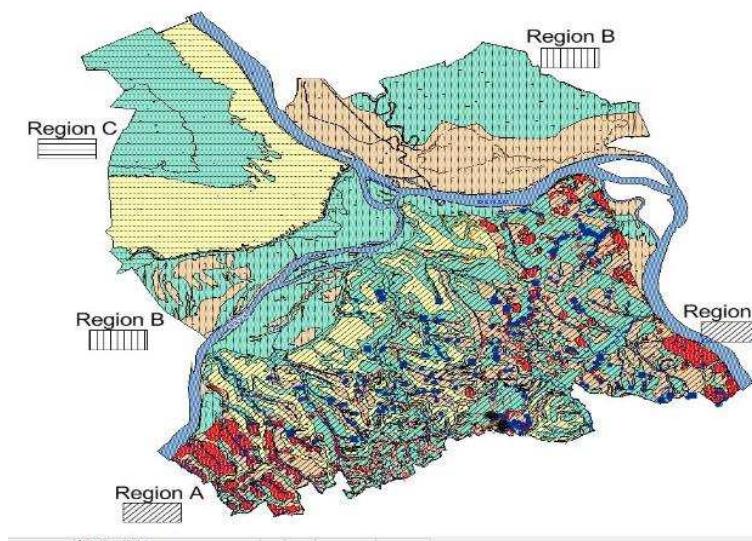
3. Hydrogeology



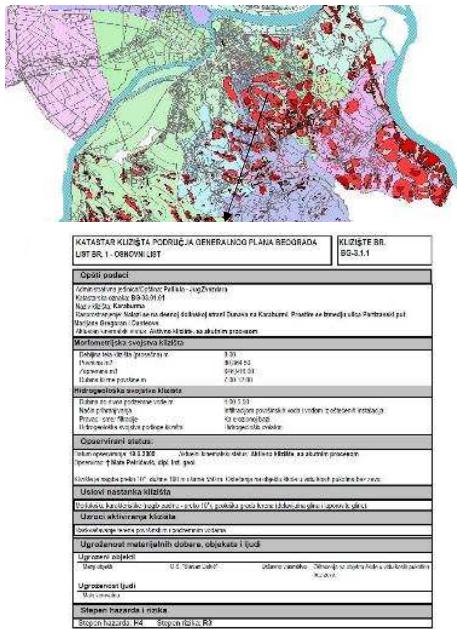
4. Seismology

5. Various geologic data

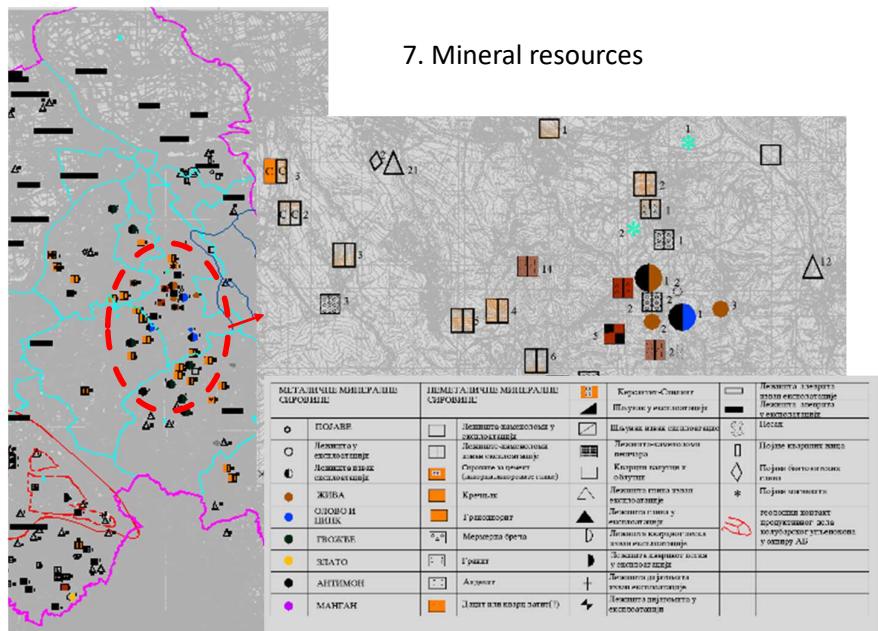
Geomorphology and tectonic data



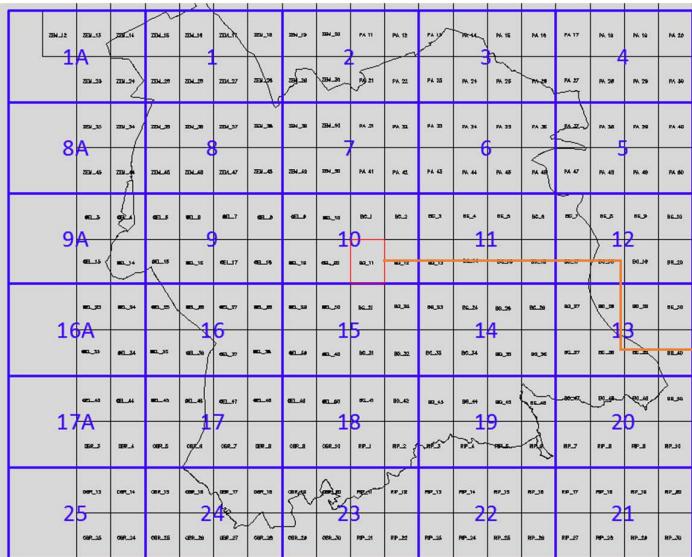
6. Landslide Cadastre



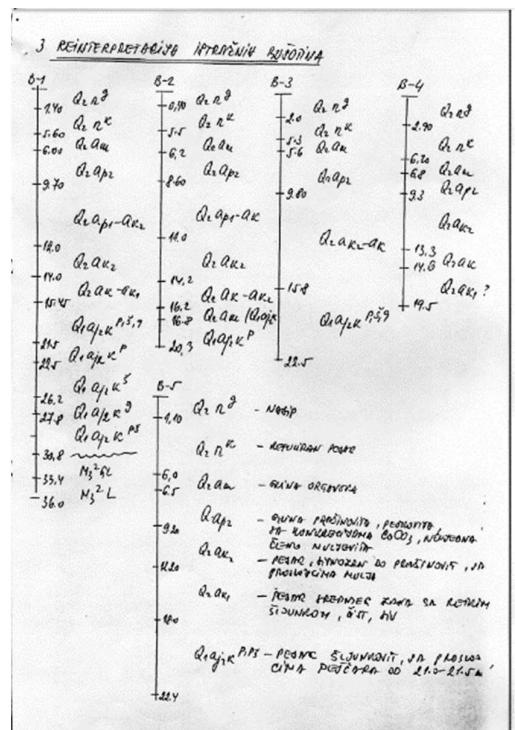
7. Mineral resources

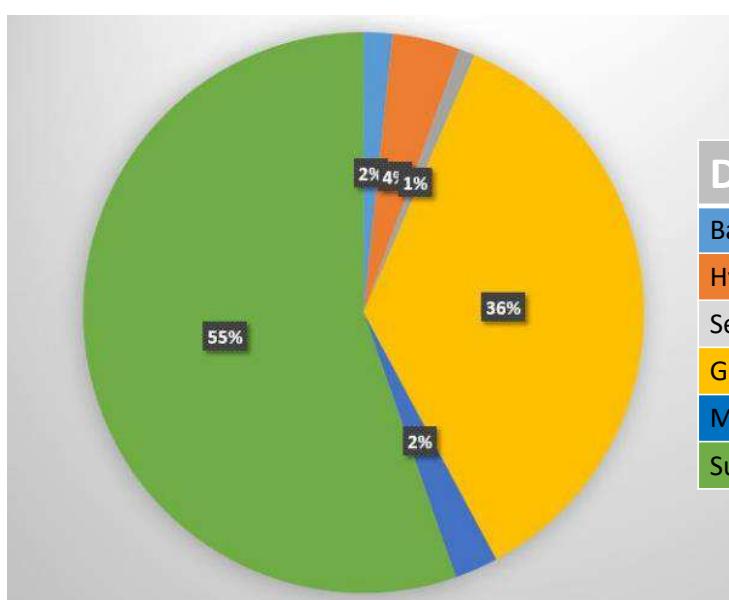
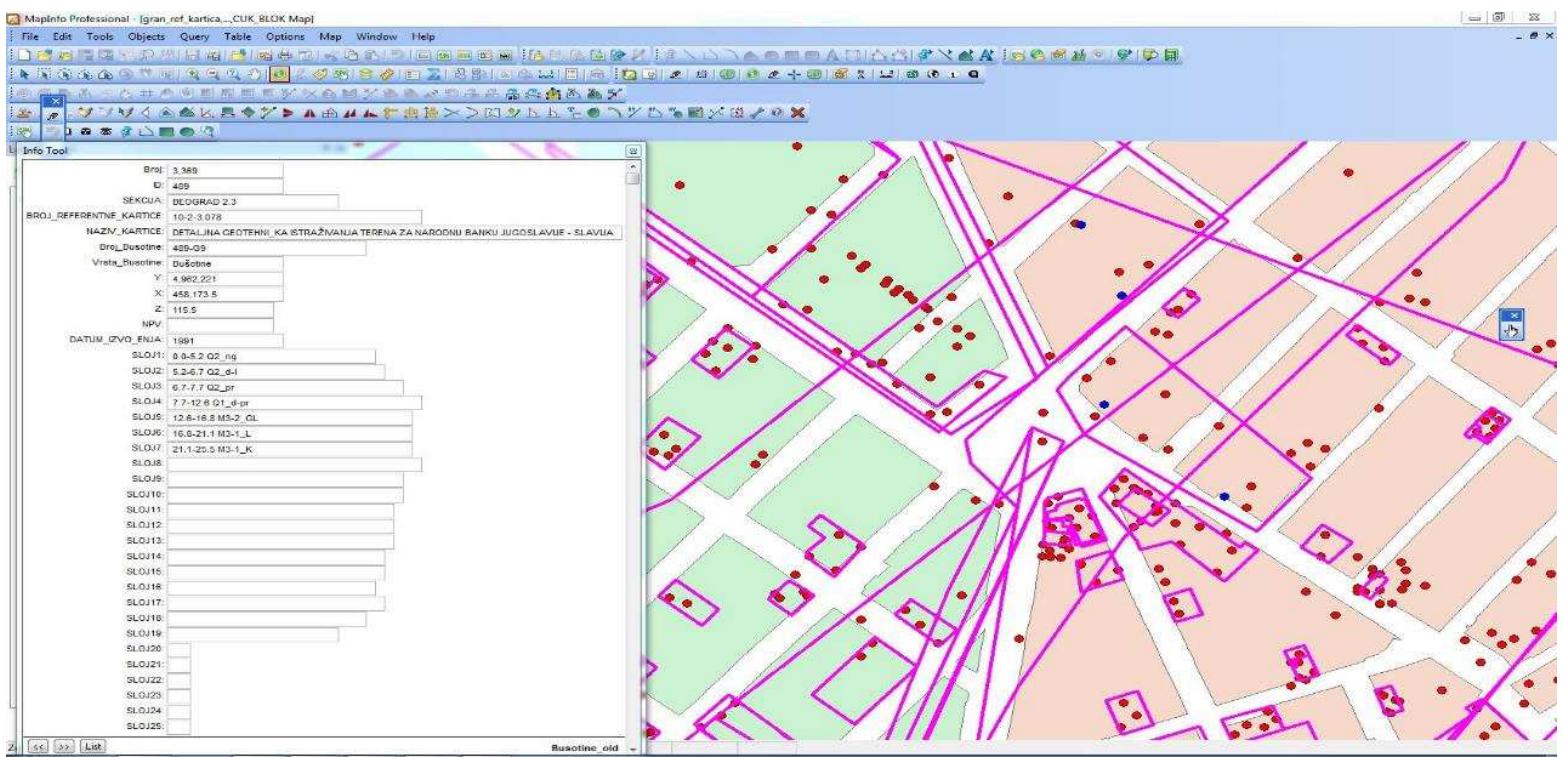


8. Survey data



Elaborates of geotechnical survey for buildings



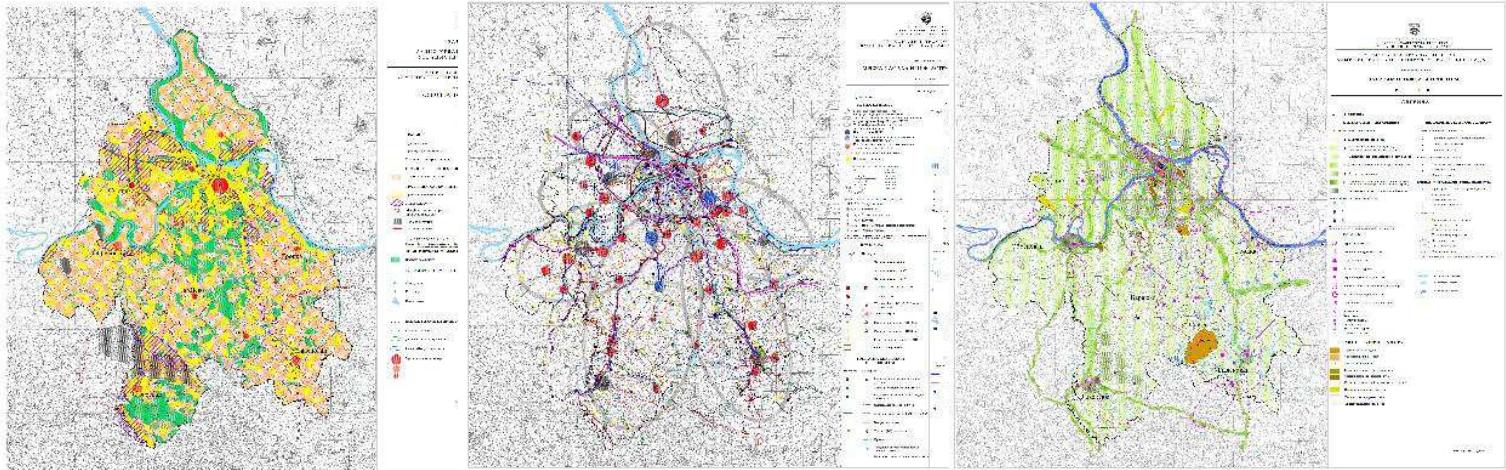


Data Statistics	No .
Basic Geologic data	90
Hydro - geologic data	212
Seismic data	50
Geotechnical data	1932
Mineral resources data	136
Survey data	22680

5. Planning

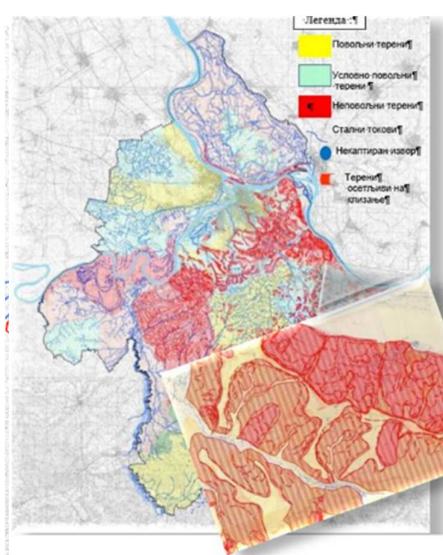
1. Spatial planning:

- Geologic resources,
- Environmental protection (landslides, floods, earthquakes)
- Risk management .



Geologic maps

Potential landslides

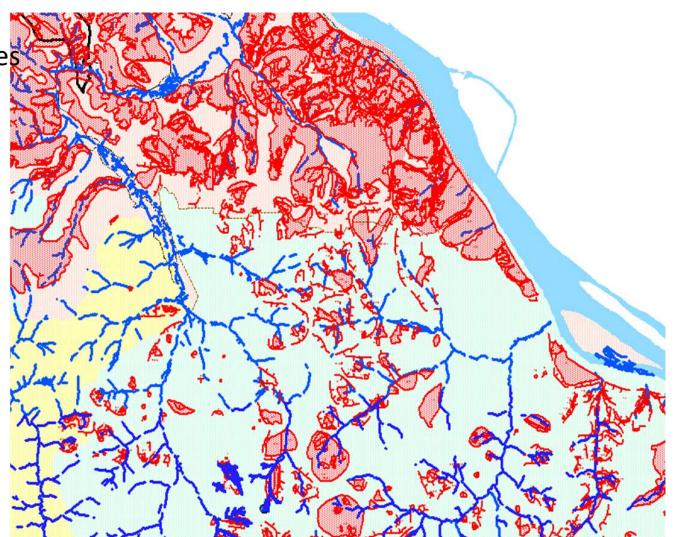


Mineral resources

Hydro-geologic
zoning

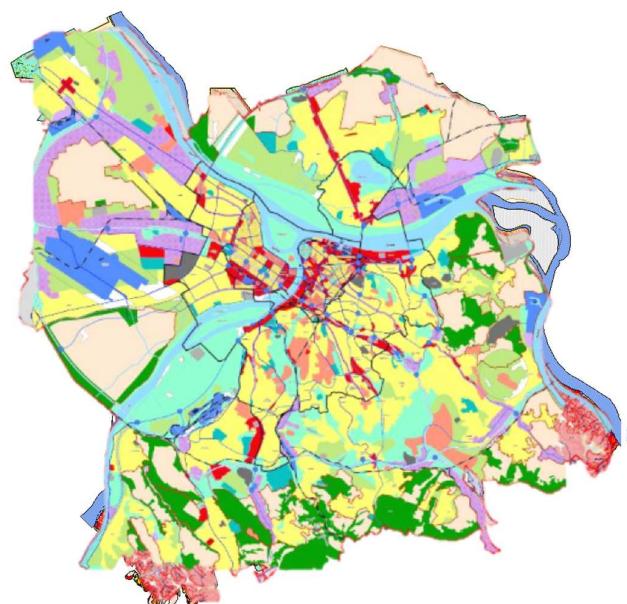
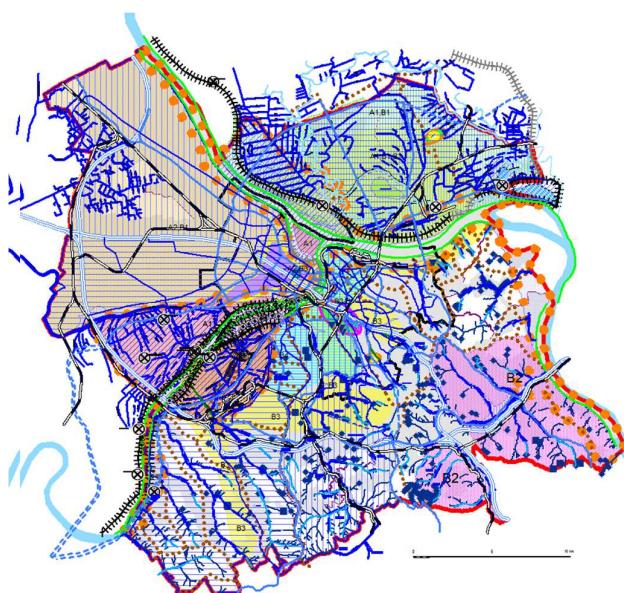
Landscapes

Mapping
Natural
hazards

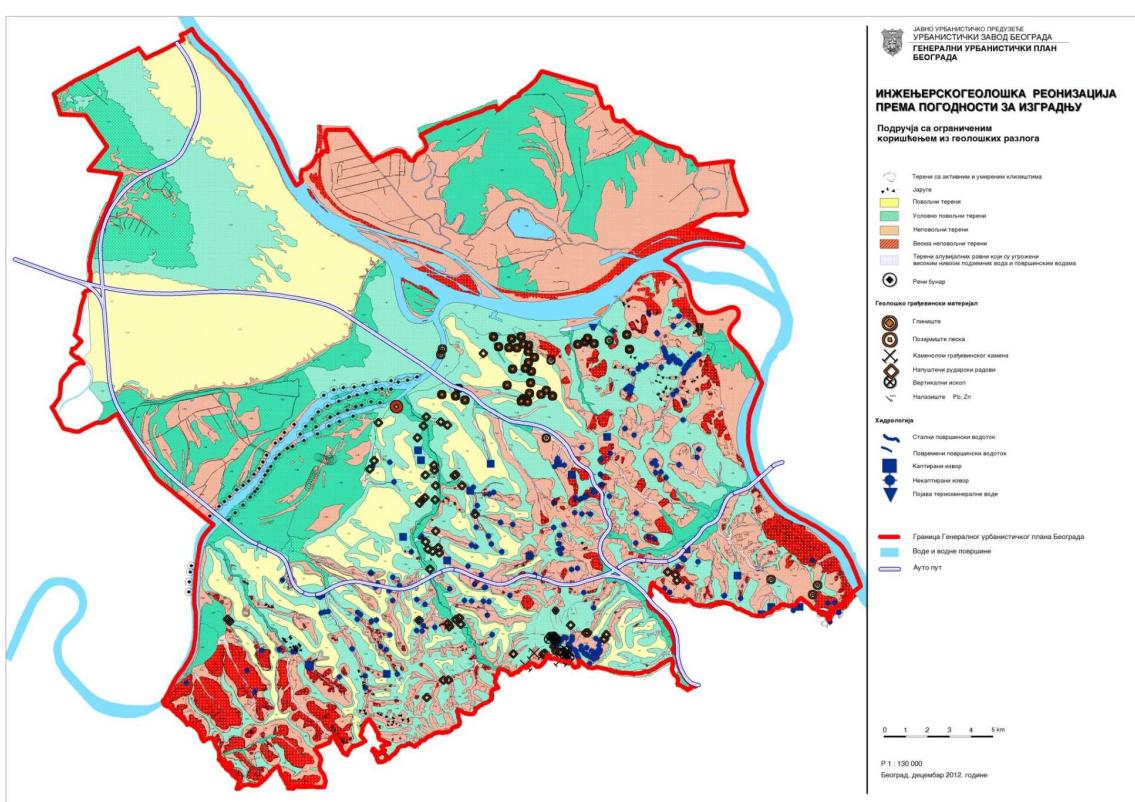


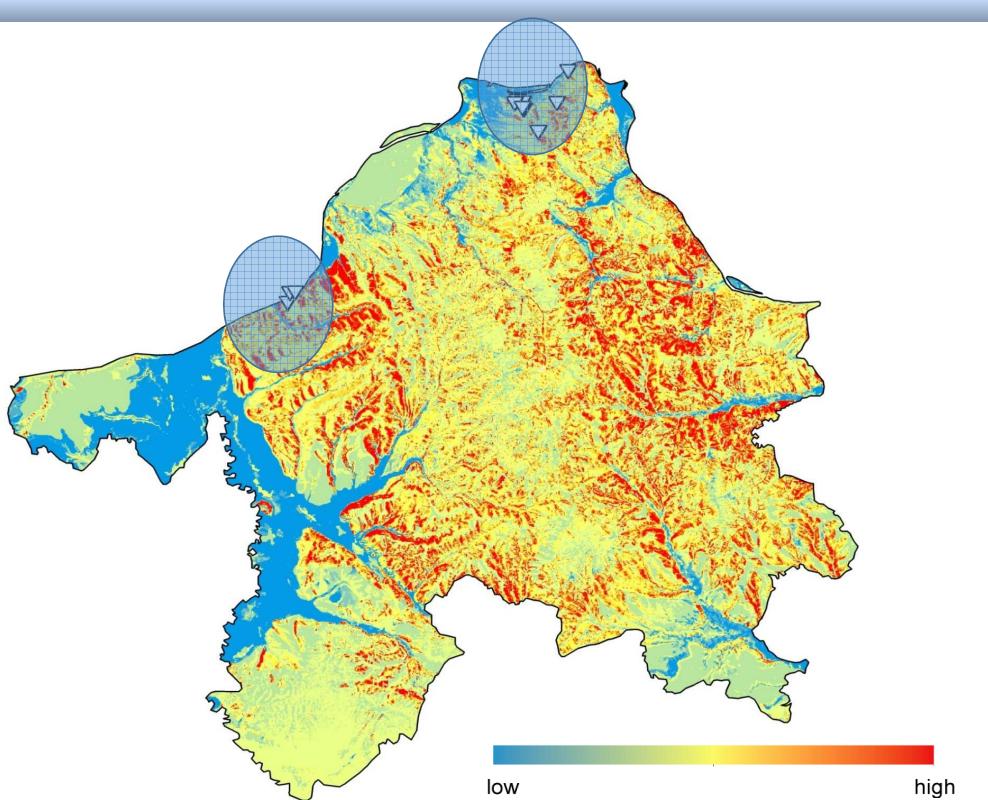
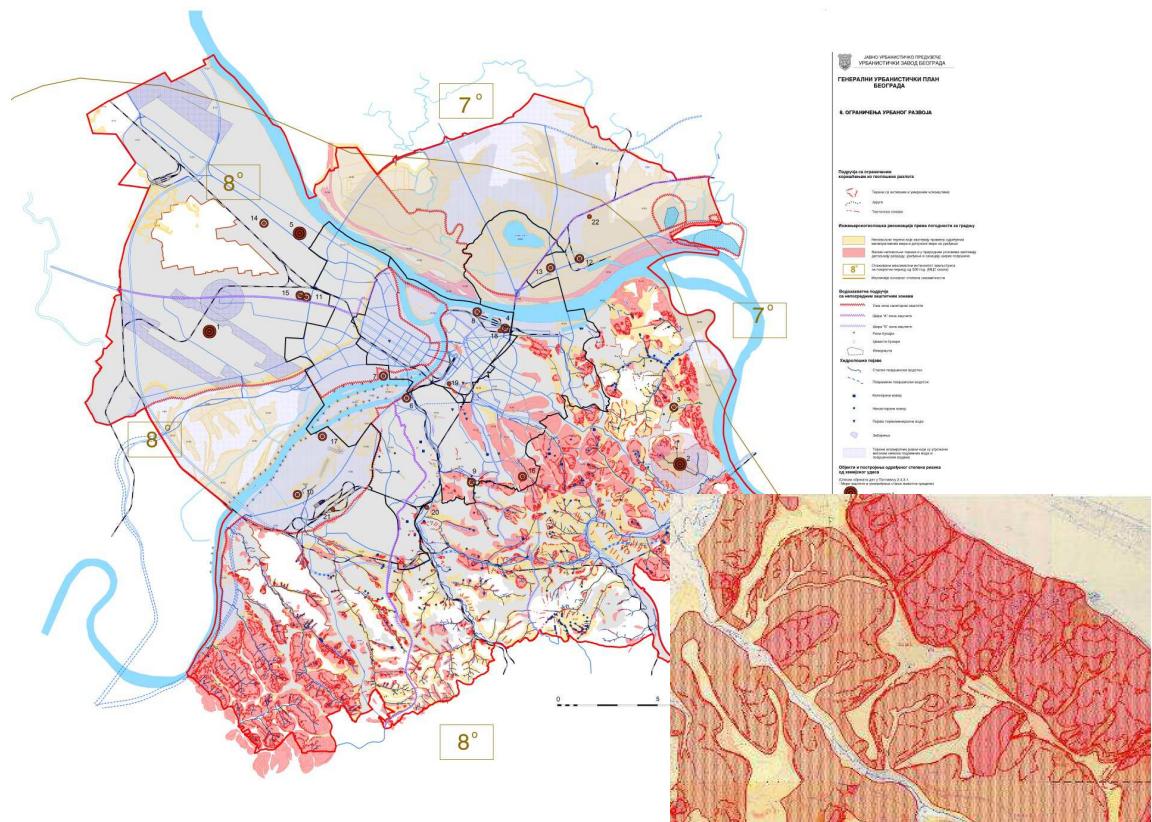
2. Master planning

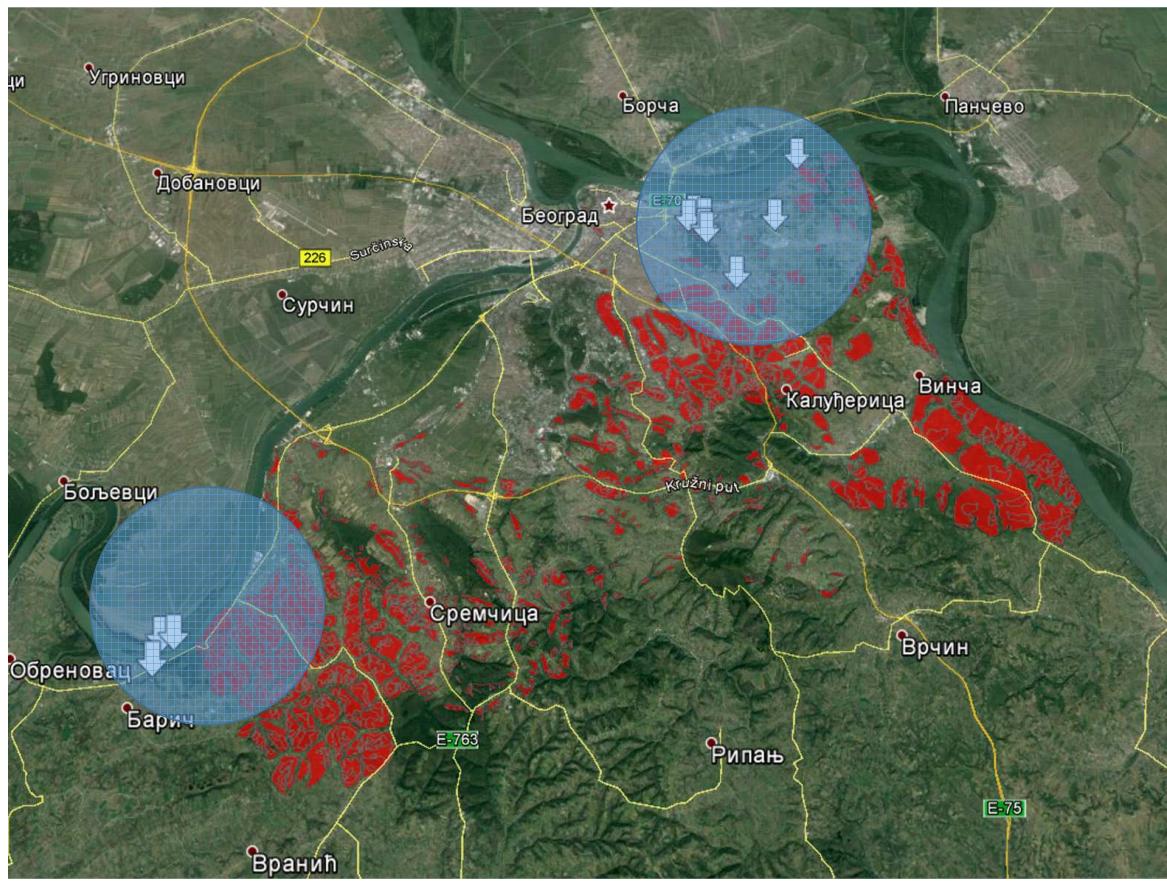
Waterways



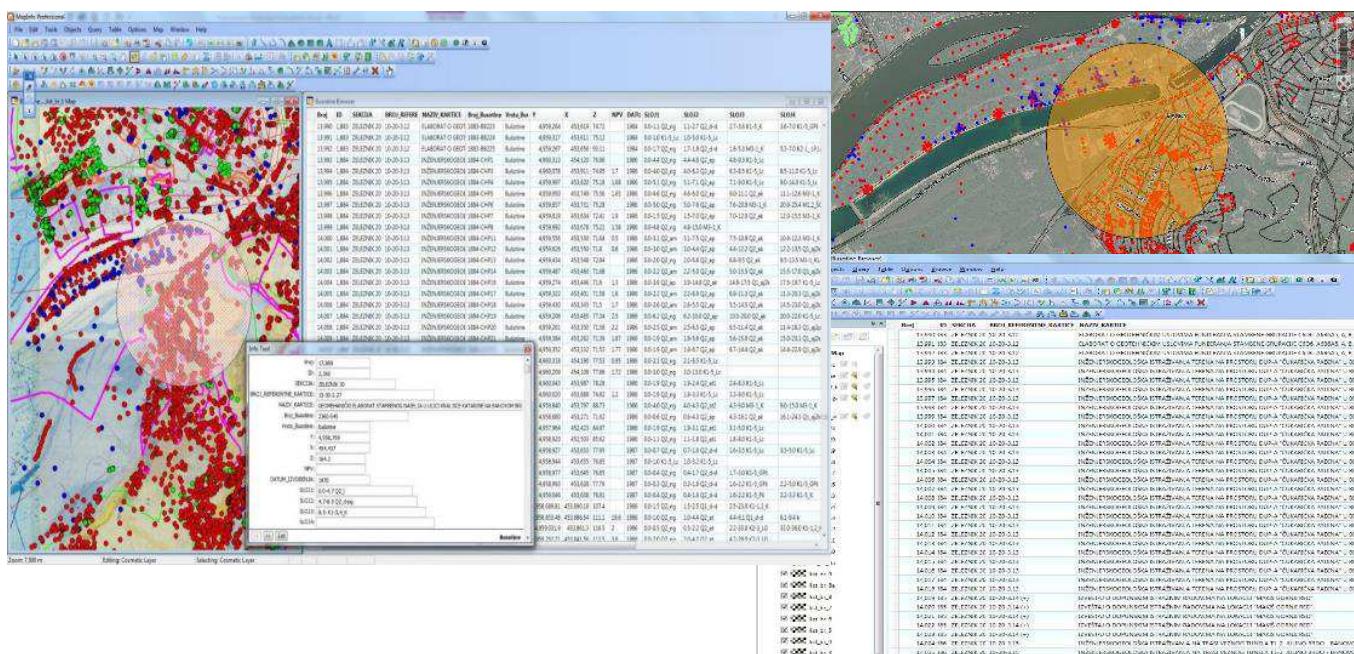
Geologic maps



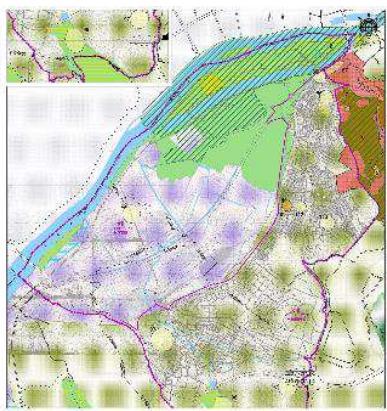




3. Detail planning

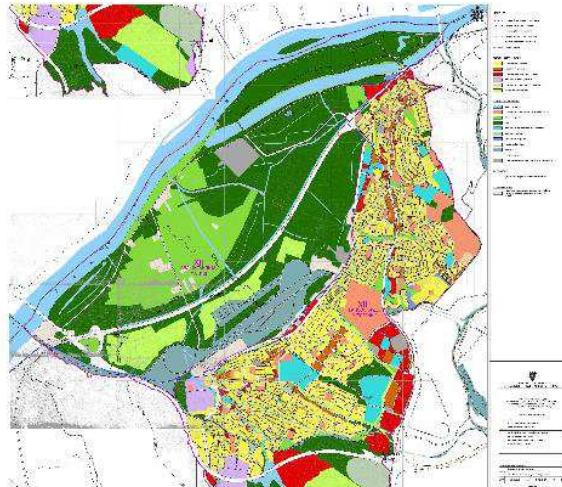


Natural heritage and values

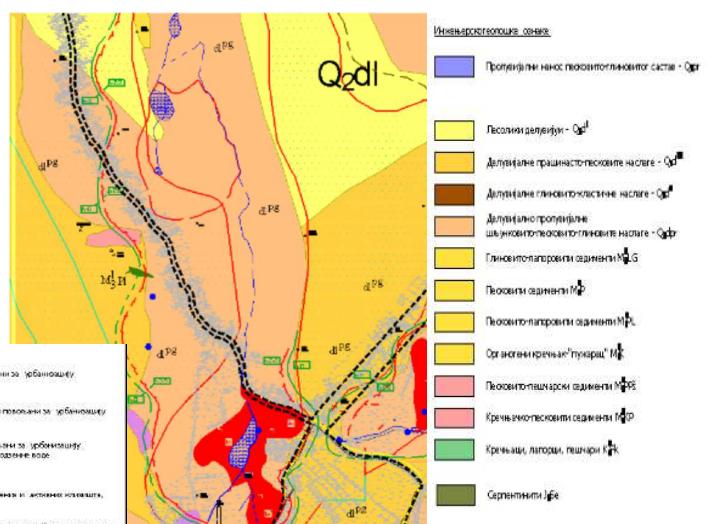
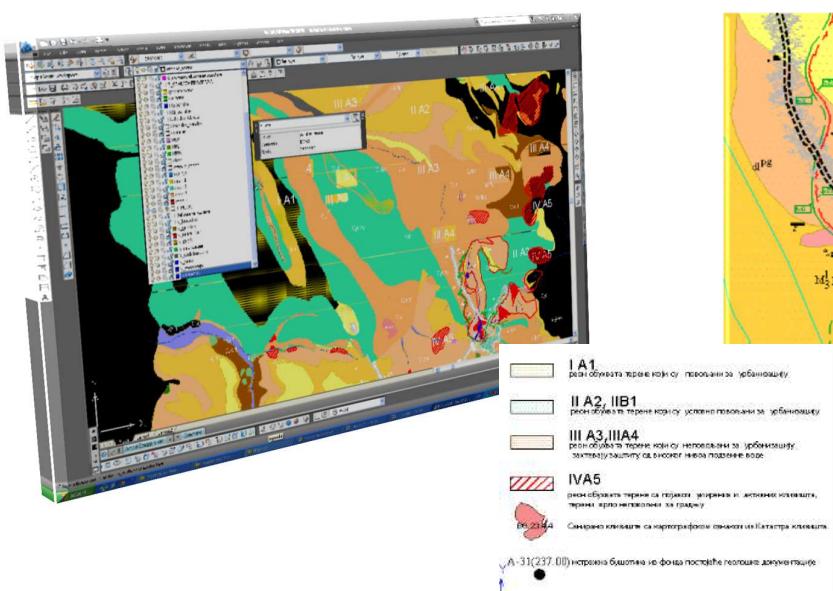


Geologic zoning

Geologic maps



Land use



“Events caused by geological conditions or processes, are serious threats to human life, property or the natural environment”

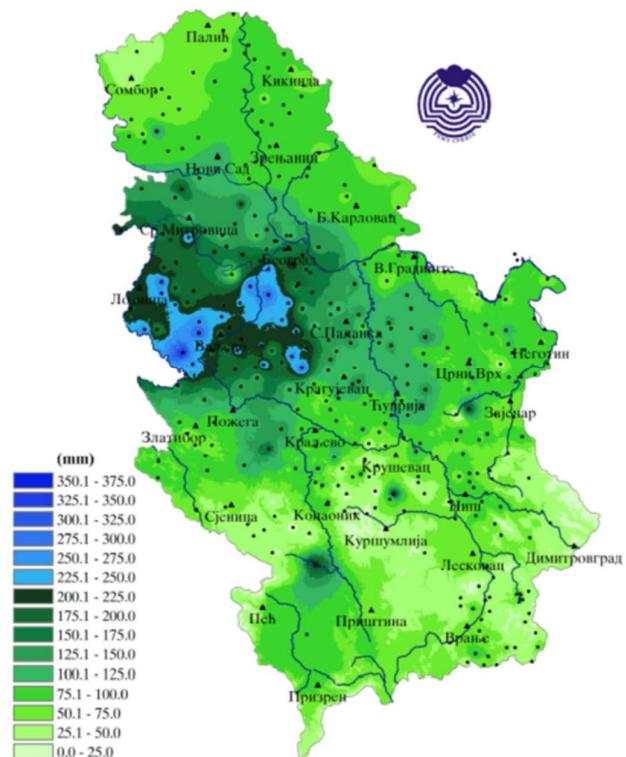
United Nations, 2004. Living with Risk. Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR)

Disasters CYCLONE „TAMARA“

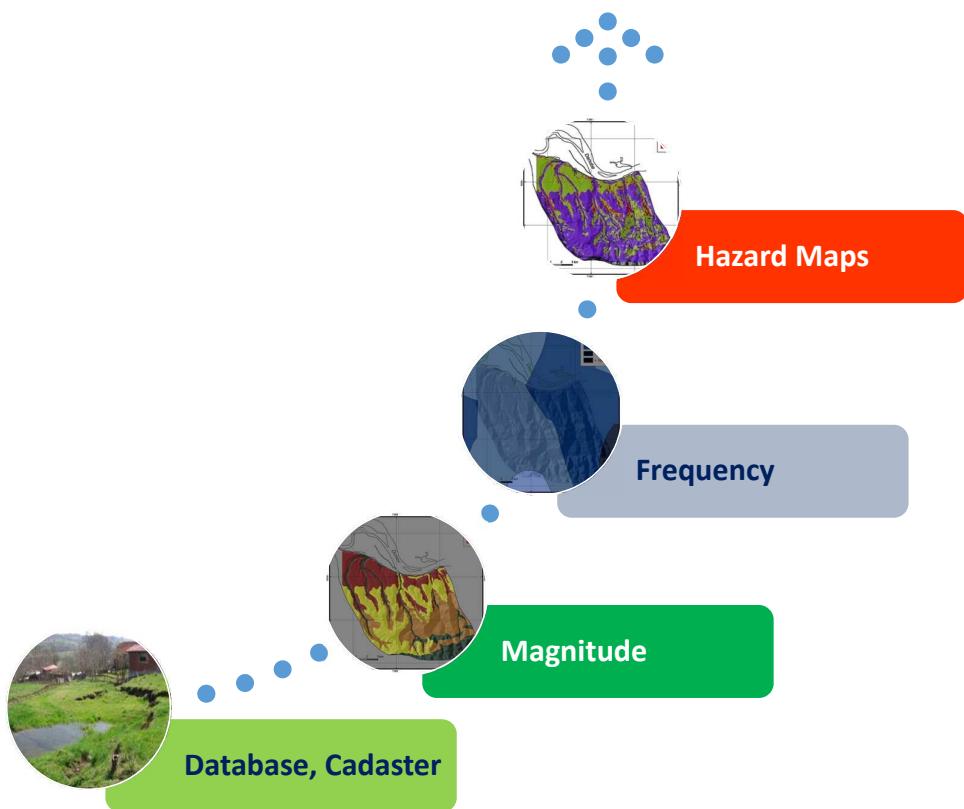
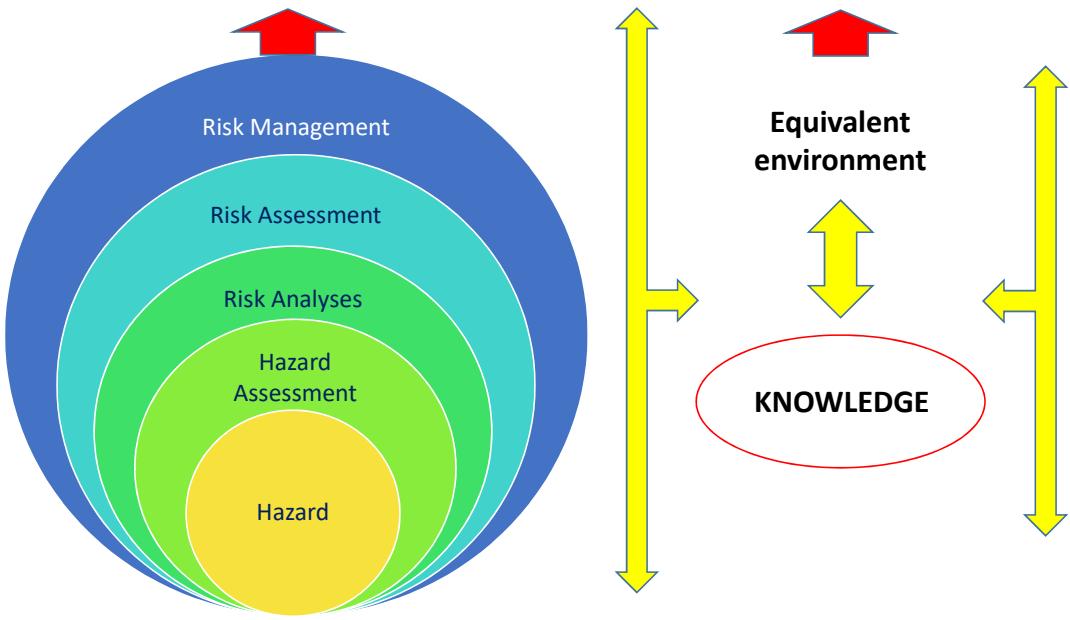
May, 13-16, 2014

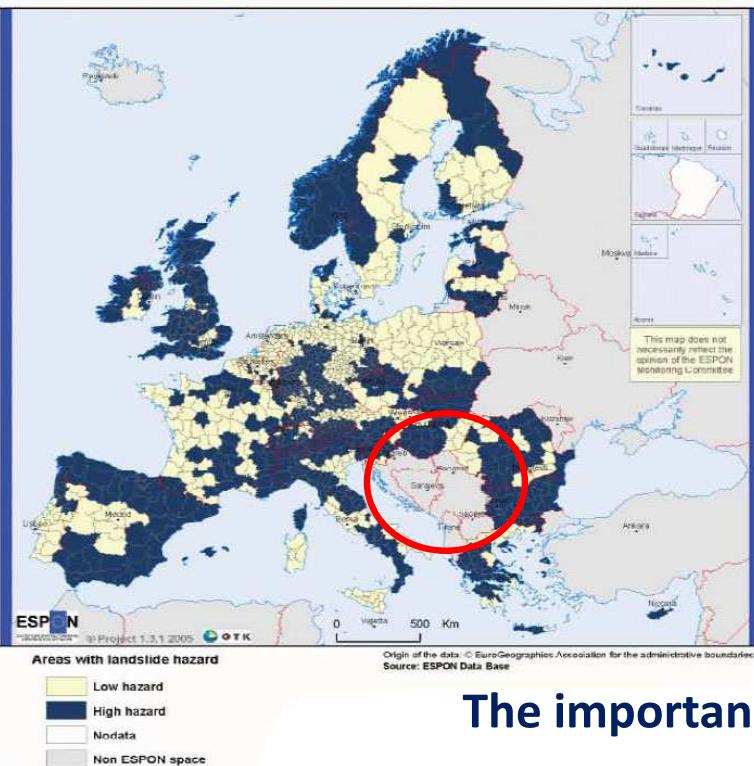
Average monthly rainfall

3 day rainfall



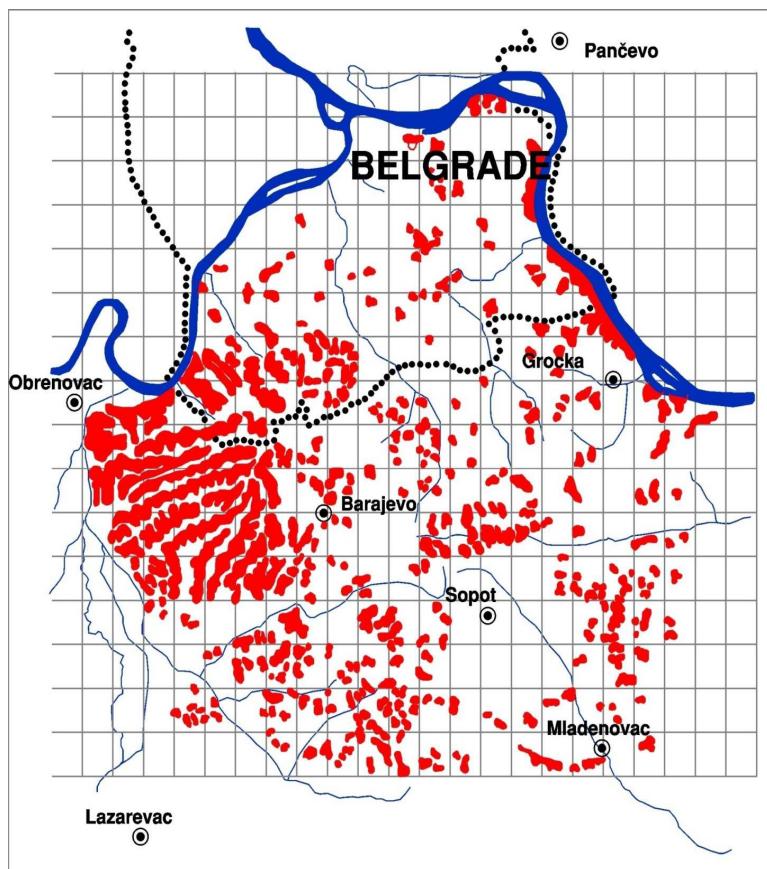
RISK REDUCTION

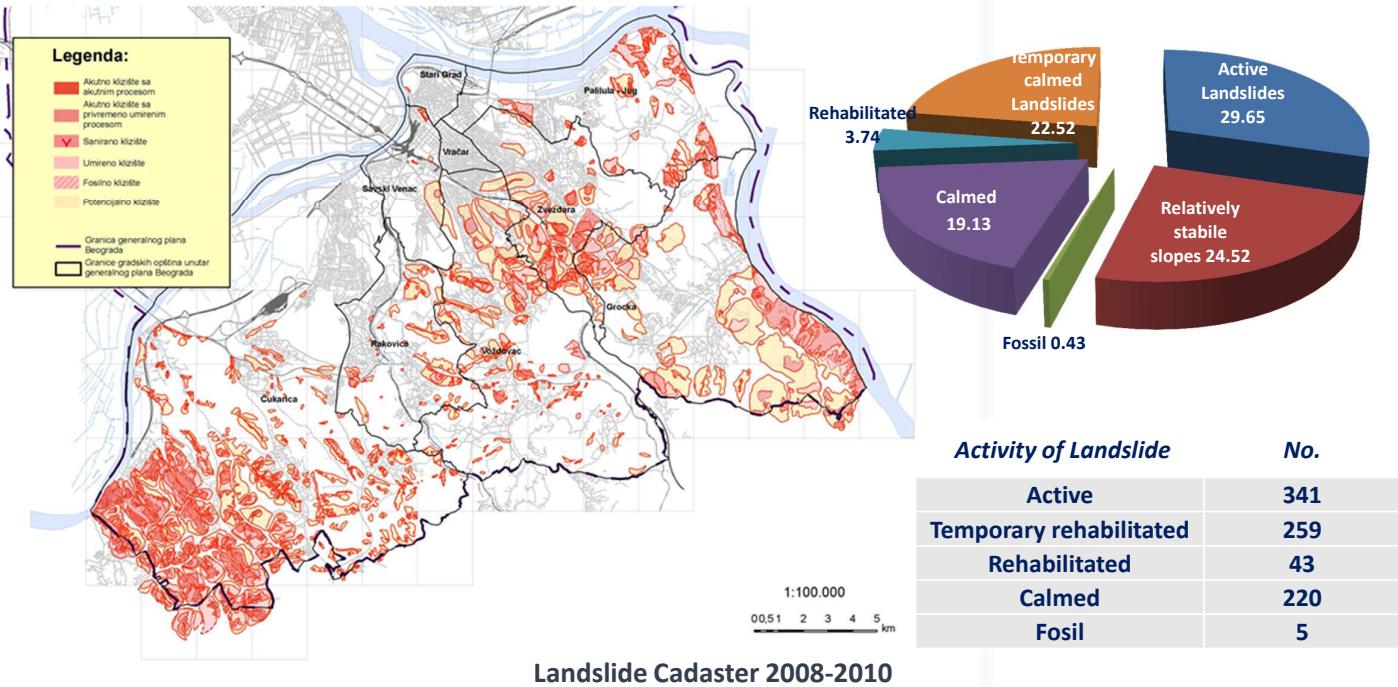




ESPON
*European
Observation
Network*

The importance of environment?

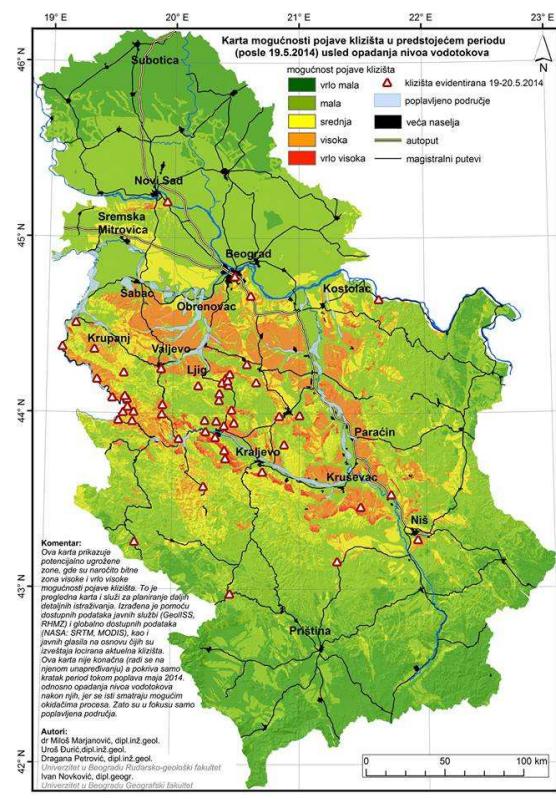




Potential landslides after the floods

Autors:

Dr Miloš Marjanović (RGF)
Uroš Đurić (GF)
Dragana Petrović (RGF)
Ivan Novković (GEF)



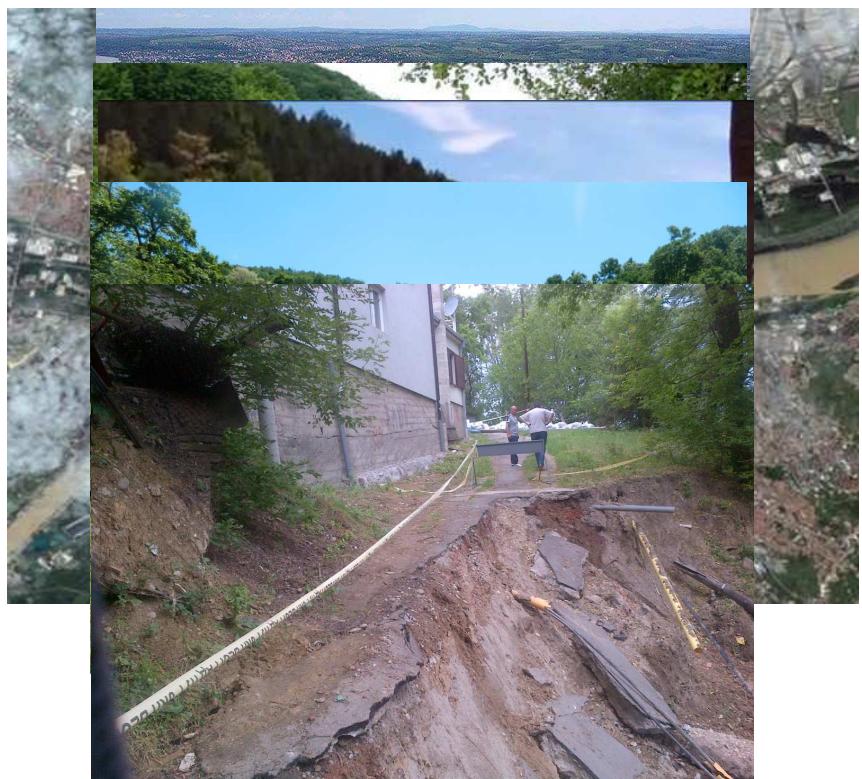
Motifs & Objectives

- Current intensification of landslide hazard (floods in Balkan 2014)
- EU's Soil Thematic Strategy (COM(2006)231) & Soil Framework Directive (COM(2006)232)
- **Legislation:** COM(2006)231, COM(2006)232
- **Terminology and identification**
- **Methodology and research principles:**

Fell et al. 2008, Guidelines for landslide susceptibility, hazard and risk zoning for land use planning; Gerath et al. 2010, Guidelines for legislated landslide assessment for proposed residential developments in BC. Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)

Mitigating risks

- Direct and indirect material damages,
- human casualties.



Why is GEOL DATA important?

- Urban Planning solutions,
- Natural resources and threats, **risk management** and **city resiliency** to **natural disasters**,
- Geo-diversity as non-renewable natural heritage.

GEOL DATA Next steps

- New hardware,
- Free software,
- Multi-level accessibility,
- Mobil-phone GIS application.



Open Source vs. Open (geo)Data in Public Administration

Codrina Maria Ilie, geo-spatial.org

Romanian community: An elegant place
for sharing geoKnowledge & geoData



my day time job (?!)

side work on the open (geo)data
initiative

GEodata Openness Initiative for Development and
Economic Advancement in ROmania

PhD candidate in urban
groundwater geodata structures

TERRASIGNA™



geo!IDEA.ro



Technical University of
Civil Engineering Bucharest
Groundwater Engineering
Research Center

How I am?



break down

Open Source vs. **Open (geo)Data** in

Public Administration

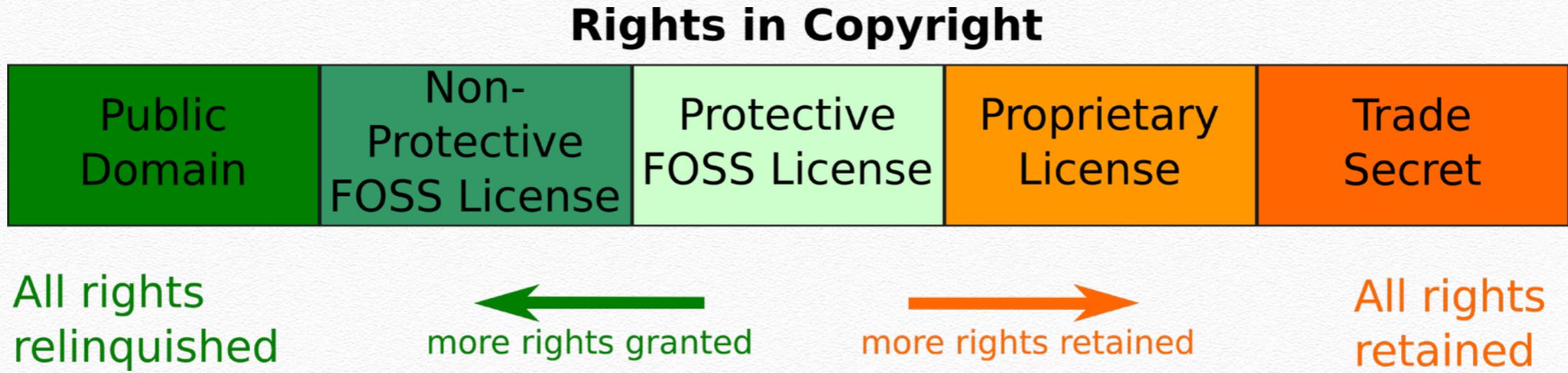


Open Source Software



“Open-source software (OSS) is computer software with its **source code** made available with a **license** in which the **copyright holder** provides the **rights to study, change, and distribute** the software to **anyone** and for **any purpose**.”

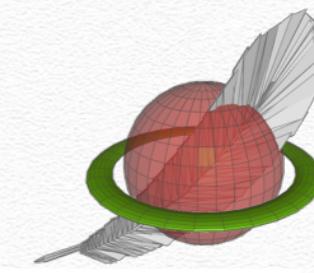
St. Laurent, Andrew M. (2008). Understanding Open Source and Free Software Licensing. O'Reilly Media. p. 4. ISBN 9780596553951



Software licenses in context of copyright according to Mark Webbink. From left to right less rights for a licensee/user of a software and more rights retained by the owner. First three license categories from left are considered being part of the "free software" ecosystem, also including public domain like licenses (such as CC0). ()



The **Open Source Definition** is a document published by the **Open Source Initiative**, to determine whether a software license can be labeled with the open-source certification mark.

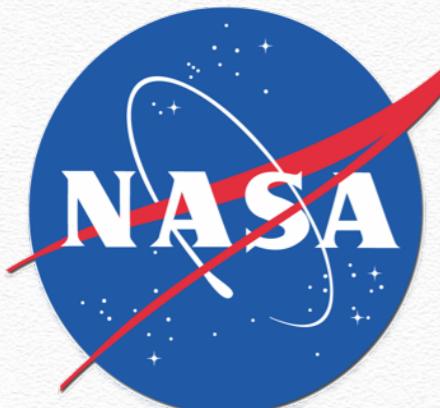


geo-spatial.org

An elegant place for sharing geoKnowledge & geoData



Open Source Software



high profile users





12 -13 June, Belgrade, Serbia.



<http://live.osgeo.org>

- ❖ self-contained bootable DVD, USB thumb drive or Virtual Machine based on Lubuntu
- ❖ 100% free software
- ❖ pre-configured applications for a range of geospatial use cases: storage, publishing, viewing, analysis and manipulation of data.
- ❖ datasets and documentation

Open Source Software
for Geospatial



Open Source Network

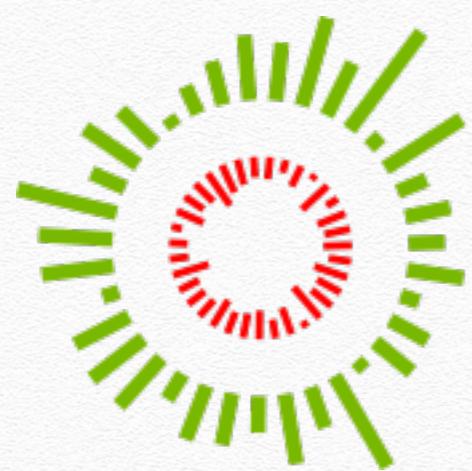
<http://pathfinder.terrasigna.com/oss/>





Open data is data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.

<http://opendefinition.org/>



OPEN KNOWLEDGE

definition

- ❖ **Availability and Access:** the data must be available as a whole and at no more than a reasonable reproduction cost, preferably by downloading over the internet. The data must also be available in a convenient and modifiable form.
- ❖ **Reuse and Redistribution:** the data must be provided under terms that permit reuse and redistribution including the intermixing with other datasets. The data must be machine-readable.
- ❖ **Universal Participation:** everyone must be able to use, reuse and redistribute - there should be no discrimination against fields of endeavour or against persons or groups. For example, 'non-commercial' restrictions that would prevent 'commercial' use, or restrictions of use for certain purposes (e.g. only in education), are not allowed.

types of open data

- ❖ Open Gov Data
- ❖ Community-driven data
- ❖ Research data
- ❖ Freemium data



Neelie Kroes,
exCommissioner for Digital Agenda
(2010-2014)

“The open government data represents the ***new oil.***”

Transparency

Economic Development

new business model

Date	Study	Scope	Benefit of open data (% GDP)
2011	EU Commission	Europe (public sector data only)	1.5
2013	Shakespeare	UK (public sector data only)	0.4
2013	McKinsey	Global	4.1
2014	Lateral Economics	G20 countries	1.1

resource: <https://medium.com/@ODIHQ/the-economic-impact-of-open-data-what-do-we-already-know-1a119c1958a0#.f8soivd0p>

“Commercial exploitation of Europe’s public sector information” (Directorate-General for the Information Society, 2000) : the economic value of PSI in Europe at 68 billion EURO

Review of recent studies on PSI re-use and related market developments (Graham Vicker, 2011): the direct impact of Open Data on the EU27 economy to 32 billion EURO

2011 Digital Agenda - a boost of 40 billion EURO to the EU's economy every year



BRIEFING ROOM

ISSUES

THE ADMINISTRATION

PARTICIPATE

[Home](#) • Transparency and Open Government

Transparency and Open Government

Memorandum for the Heads of Executive Departments and Agencies

SUBJECT: Transparency and Open Government

My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.

Government should be transparent. Transparency promotes accountability and provides information for citizens about what their Government is doing. Information maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use. Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public. Executive departments and agencies should also solicit public feedback to identify information of greatest use to the public.

2009 →



DATA TOPICS IMPACT APPLICATIONS DEVELOPERS CONTACT

The home of the U.S. Government's open data

Here you will find data, tools, and resources to conduct research, develop web and mobile applications, design data visualizations, and more.

GET STARTED
SEARCH OVER 193,141 DATASETS

Federal Student Loan Program Data



BROWSE TOPICS



Public Sector Information Directive

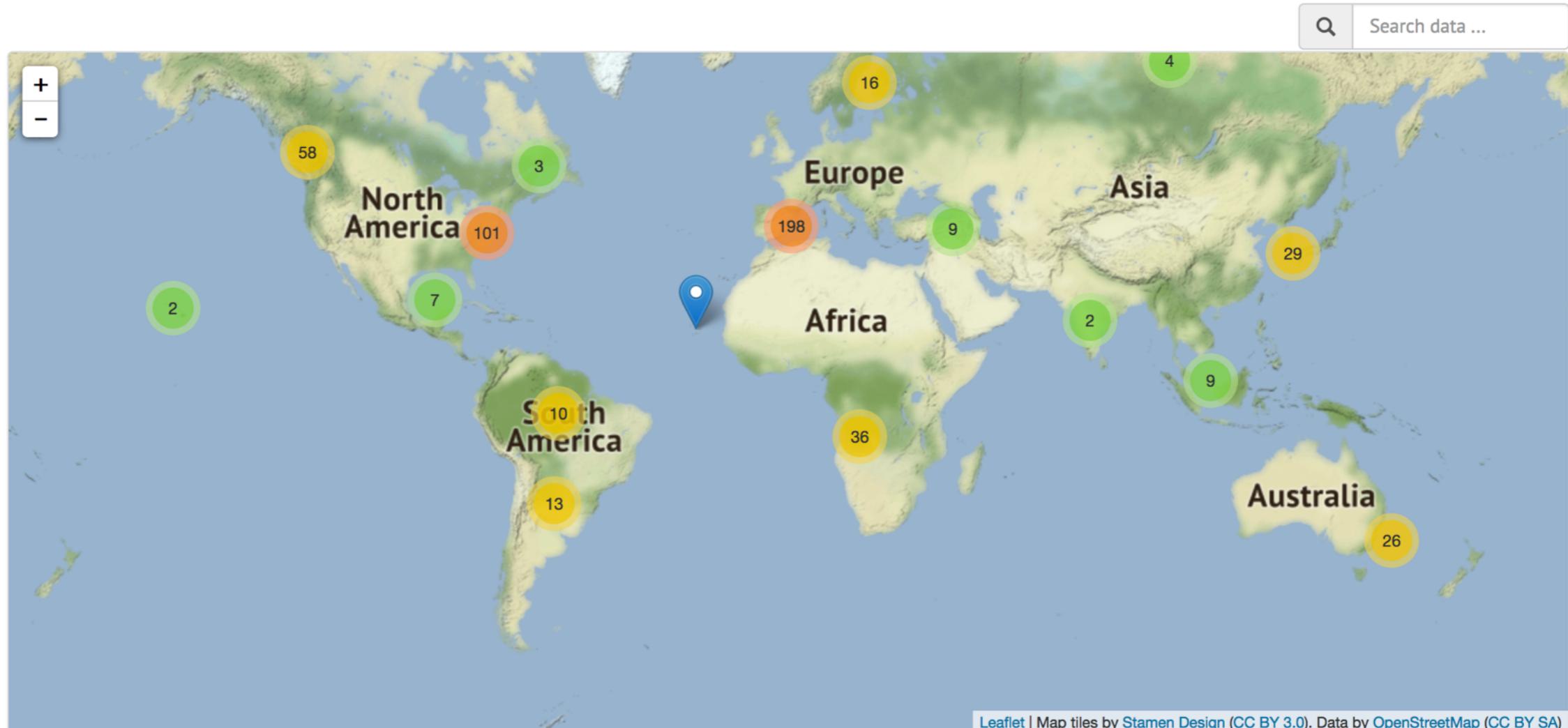
2003 - 2009 - 2013



Data Portals

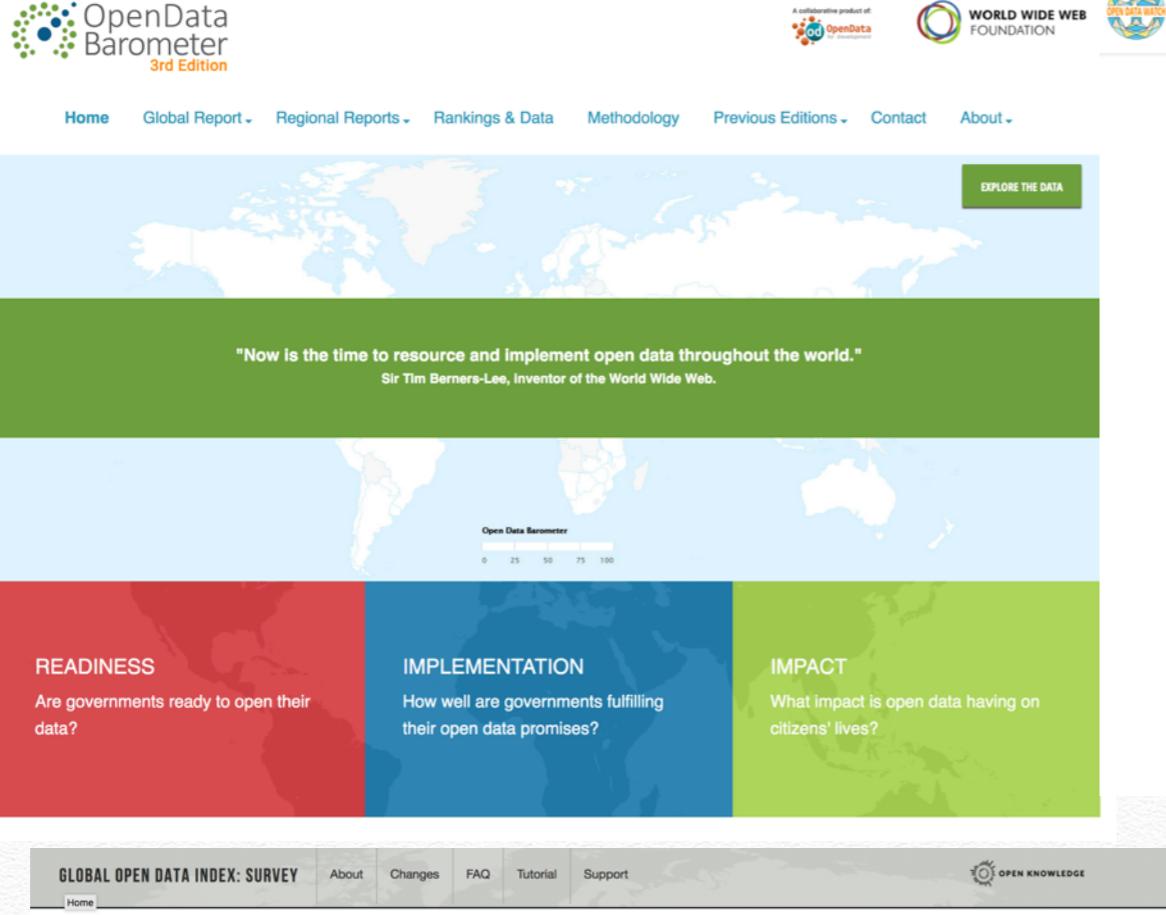
 A Comprehensive List of [Open Data](#) Portals from Around the World

524 Data Portals listed »



This service is run by [Open Knowledge International](#) | [Source Code](#) | [Download Data \(CSV\)](#) | [Download Data \(JSON\)](#) | [Data License \(Public Domain\)](#)

[OPEN DATA](#) [OPEN SERVICE](#)



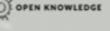
The Open Data Barometer 3rd Edition homepage features a world map with a green overlay. A quote from Sir Tim Berners-Lee is displayed: "Now is the time to resource and implement open data throughout the world." Below the map, three colored sections represent the pillars of open data: READINESS (red), IMPLEMENTATION (blue), and IMPACT (green). Each section has a brief description.

Monitoring and Reporting

Are public data available to the public? By what standards should the quality and openness of data be evaluated? And by whom? And how? It is important to have clear criteria, to measure progress over time, and to make results openly available for planning, monitoring, and evaluation.

Open Data Watch focuses on the data and statistics needed by developing countries to plan, monitor and evaluate the results of economic, social, demographic and environmental programs. While no single measure can encompass all the dimensions of a national statistical system, well-defined and carefully measured indicators can focus attention on important gaps and encourage informed discussion of options and priorities.

GLOBAL OPEN DATA INDEX: SURVEY

About | Changes | FAQ | Tutorial | Support | 

NUMBER OF PLACES **149** NUMBER OF DATASETS **1963** NUMBER OF OPEN DATASETS **174** PERCENTAGE OPEN **8%**

Welcome Global Open Data Index survey. You have reached the old version of our survey, which is now closed. For 2016 submission, please visit the new survey site at <http://global.survey.okfn.org/>. If you have any questions or would like to receive updates please join the discussion at: <https://discuss.okfn.org/c/open-data-index>.

	National Statistics	Government Budget	Legislation	Election Results	Procurement tenders	National Map	Transport Timetables	Pollutant Emissions	Weather forecast	Company Register	Location datasets	Water Quality	Land Ownership	Government Spending	Health performance	Total Score
1 Taiwan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1110
2 United Kingdom	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	1090
3 Colombia	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	980
4 Finland	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	975
5 Uruguay	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	960
6 Australia	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	+ Add	955
7 Denmark	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	+ Add	925
8 Norway	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	915
9 France	2015	2015	2015	2015	2015	2015	2014	2015	2015	2015	2015	2015	2015	2015	+ Add	895

The OD500 Global Network

The OD500 Global Network is an international network of organizations that seek to study the use and impact of open data. Coordinated by the Governance Lab (GovLab) the OD500 Global Network enables participating organizations to analyze open data in their country in a manner that is both globally comparative and domestically specific. The OD500 Global Network starts from the assumption that only by mapping the use of open data within and across countries, can new approaches for understanding the economic and social impact of open government data be generated.



Australia



México



United States



Italy



Korea



Canada

OD500 in Your Country

TO FIND OUT HOW TO CONDUCT A STUDY IN YOUR COUNTRY, <http://earth.unibuc.ro/osego> • contact@geo-spatial.org • <http://tech.groups.yahoo.com/group/geo-spatial/>



geo-spatial.org

An elegant place for sharing geoKnowledge & geoData



12 -13 June, Belgrade, Serbia.

OpenStreetMap (OSM) is a
collaborative project to create a
free editable map of the world.



2004 - Steve Coast, UK

2006 December, Yahoo! allowed OSM to use its aerial photography as a backdrop for map production.

2010 OpenStreetMap - Project Haiti - <https://vimeo.com/9182869>

community
driven-data

12 -13 June, Belgrade, Serbia.

The screenshot shows the HOT website with a red header bar containing the HOT logo and the text "Humanitarian OpenStreetMap Team". Below the header is a navigation menu with links: Get Involved, Projects, News, About, Partnerships, Donate, and Contact. A large map of the world highlights regions in Southern Africa, Southeast Asia, and Central America where the Malaria Elimination Campaign is active. A callout box on the left side of the map provides details about the campaign, mentioning HOT and DigitalGlobe's collaboration to map populated places over 500,000 square kilometers to support the Clinton Health Access Initiative's malaria program. The map also shows labels for countries like Mexico, Venezuela, Bolivia, Mauritania, Mali, Niger, Nigeria, Tchad, Cameroun, South Sudan, Kenya, République démocratique du Congo, Tanzania, Angola, Zambia, and Mozambique. Social media icons for Facebook, Twitter, and YouTube are located in the top right corner of the header.

HOT and DigitalGlobe Team Up to Help Eliminate Malaria

Malaria Elimination Campaign

HOT and DigitalGlobe have teamed up to identify and map populated places in an area of interest covering over 500,000 square kilometers in Southern Africa, Southeast Asia and Central America to support the Clinton Health Access Initiative's malaria program.

[Learn more](#)

The Humanitarian OpenStreetMap Team (HOT) applies the principles of open source and open data sharing for humanitarian response and economic development.

Get Involved



community
driven-data

geo-spatial.org

An elegant place for sharing geoKnowledge & geoData

http://earth.unibuc.ro/osgeo • contact@geo-spatial.org • http://tech.groups.yahoo.com/group/geo-spatial/

MIND THE GAP



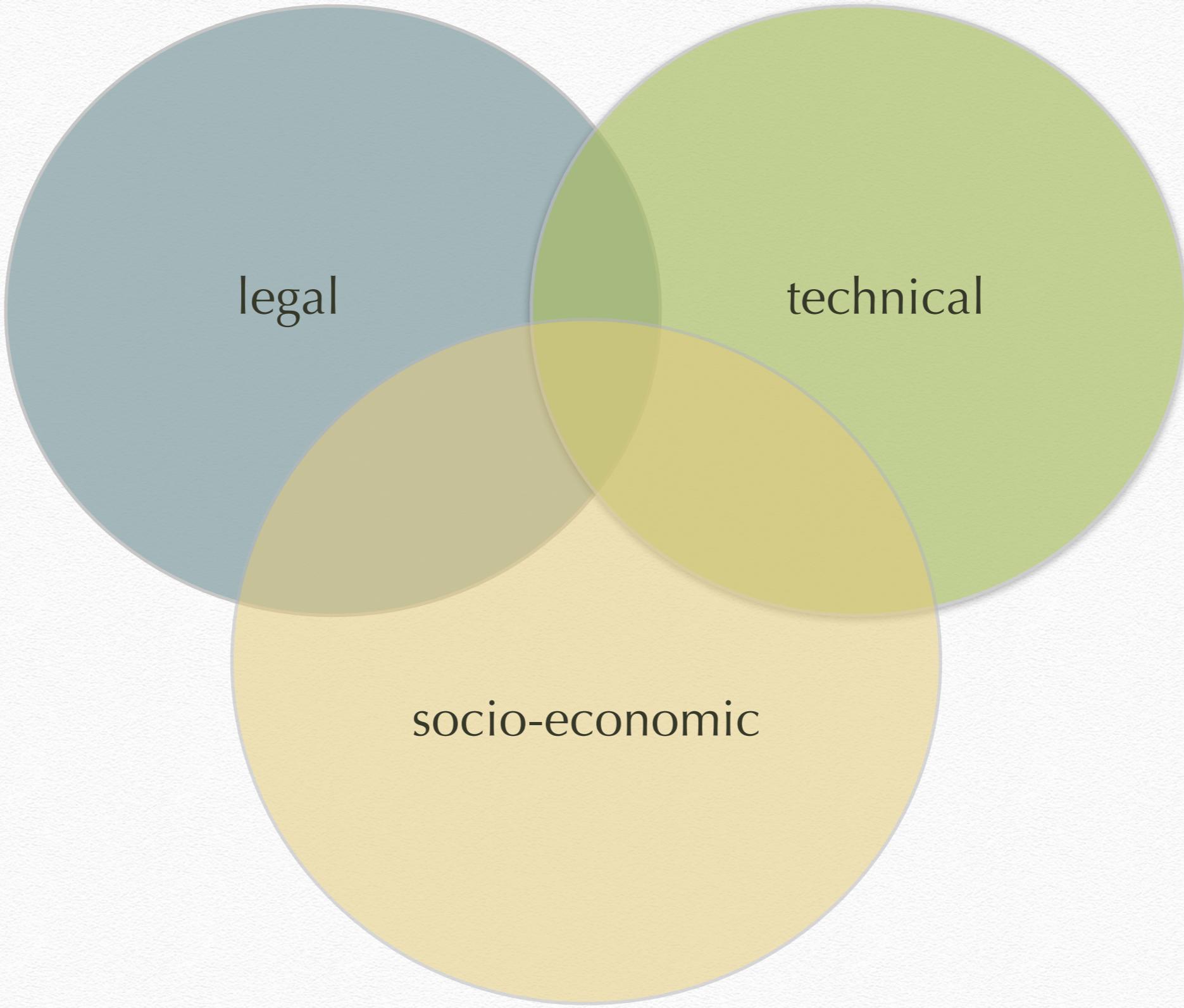
<http://earth.unibuc.ro/osgeo> • contact@geo-spatial.org • <http://tech.groups.yahoo.com/group/geo-spatial/>

geo-spatial.org

An elegant place for sharing geoKnowledge & geoData



challenges



Share PSI 2.0 - The network for innovation in European public sector information

Open data priorities and engagement –
identifying data sets for publication

Workshop: Free our Maps!

❖ Open geodata : Quality and relevance. Where to draw the line?

- ❖ On what grounds should relevance be build, economic, social, research grounds ?
- ❖ Imagining a geodata relevance classification.
- ❖ Quality matters, but enough to discourage potential public data owners?
- ❖ Quality in community driven data. How to build trust in the quality and sustainability of community driven data projects? Are quality markers a solution?
- ❖ **Legislation matters!**
- ❖ **Technical issues:**
 - ❖ platforms, formats, tools development
 - ❖ API or bulk files? Socrata or CKAN?



Land Information Systems in the Danube Region
Quality of Data & Access to the Public

Open Government Implementation – OGD Cockpit Blockchain?

Thomas Prorok, KDZ

June 12-13, 2017, Belgrade

A format
of

tinavienna
■ smart city agency
■ energy center

SMART
CITY
WIEN

H
international

In cooperation
with

KDZ
CENTRE FOR
ADMINISTRATION
RESEARCH

Challenges of Todays Public Sector

ZENTRUM FÜR
VERWALTUNGS
FORSCHUNG
KDZ

Open Government Data Initiatives

- Easy to identify first datasets, infrastructure incl. data portals is ready
- Increasingly harder to handle „sensitive“ datasets
- Data portals don't focus on internal processes

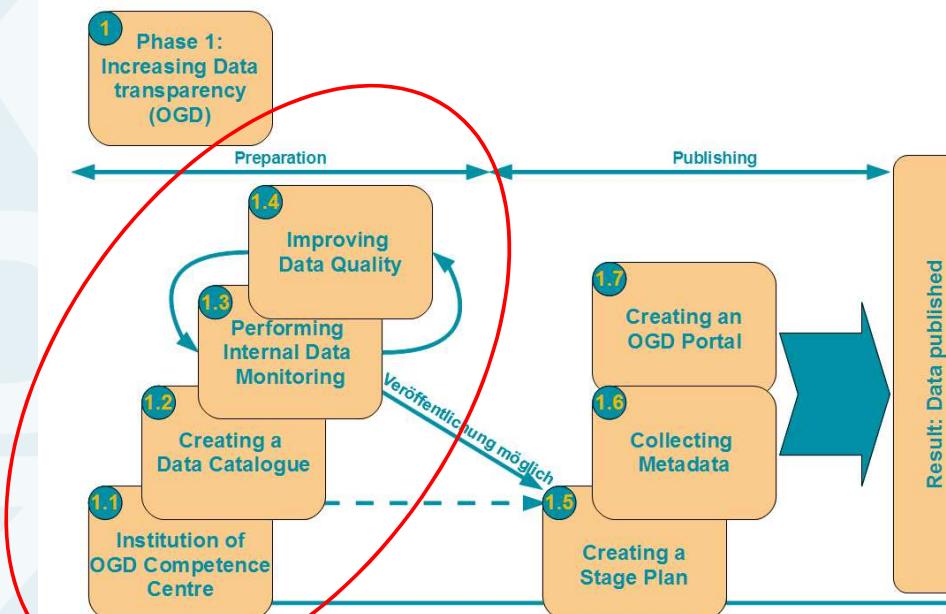
Public Sector Information 2013/37/EU

- Effective since July 2015
- Data and information requests have to be managed

Big Data / Smart City

- Increasing amounts of new datasets to be considered
- Also datasets of the (smart) city are relevant that the city don't possess themselves

Need for Professional Internal Data Monitoring



<http://www.kdz.eu/de/open-government-vorgehensmodell>

www.kdz.or.at

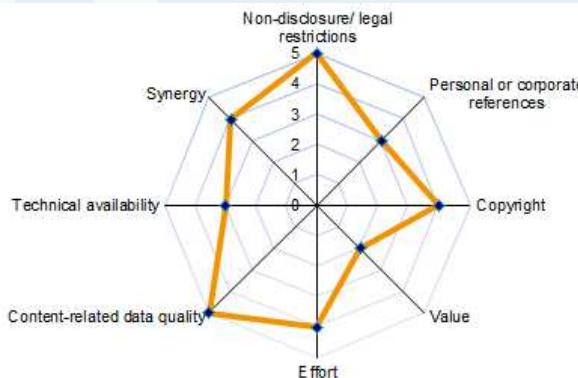
4. Oktober 2012 · Seite 3

Internal Data Monitoring – Components

- Data Catalogue**
 - What data do we have?
 - Organisational, legal, technical aspects
 - incl. Metadata that is relevant whether we publish or not
- Data Monitoring Metrics**
 - Can we publish this data? How do we rate datasets, what criteria do we use?
 - If yes: publishing process including OGD metadata
 - If no: Why not? Can be done something to improve?
- Quality improvement / encourage discussion**
 - What can we improve?
 - What data is asked for? From OGD community / in PSI request
 - How can we argue why we cannot publish the data?

Metrics for Internal Data Monitoring

- 8 criteria incl. description and & metrics**
- Assessment in scores 0 – 5 (0 = K.O.)**



www.kdz.or.at

Criterion	Explanation	Score (0-5 points)
Non-disclosure/legal restrictions	Is the data subject to non-disclosure obligations or other legal restrictions or does it include data critical for infrastructure?	0: non-disclosure obligation 1: restrictions exist, are hardly alterable (e.g. EU restrictions) 2: restrictions exist, alterable (e.g. regional or district council with 2/3 majority) 3: restrictions exist, easily alterable (e.g. regional or district council with simple majority) 4: restrictions exist, very easily alterable (e.g. internal rules and practices, administrative culture) 5: no restrictions
Personal or corporate references	Does the data include personal references or can individuals or companies be identified?	0: personal data 1: data cannot be made anonymous, missing approval hardly obtainable 2: data cannot be made anonymous, missing approval obtainable 3: approval obtained (e.g. subsidy data) 4: data can be made anonymous 5: no identification of individuals or companies possible, or no infringement of interests in secrecy deserving protection (sec. 8 Data Protection Act)
Copyright	Is the administrative agency sole proprietor of data copyright?	0: no copyright: disclosure not possible 1: subject to license fees and approval 2: subject to license fees, approval obtained 3: no license fees, subject to approval 4: no license fees, no approval needed 5: sole possession of copyright ensured
Value	How high is the estimated value of disclosure for all target groups?	0: no value 1: very low value 3: medium value 4: high value 5: very high value
Effort	How high is the effort of disclosure?	0: unjustifiable cost 1: very high cost 2: high cost 3: medium cost 4: low cost 5: very low
Content-related data quality	How high is the estimated data quality? (timeliness, completeness, accurateness, faultiness)	0: data quality unjustifiable 1: data quality very low 2: data quality low 3: data quality medium 4: data quality high 5: data quality very high
Technical availability	Available data formats and data sources, open standards: OGD formats, extended Five-Star System (see chapter "OGD formats" and Table 4)	1: data available electronically 2: data available in machine-readable format 3: data available in OGD formats 4: data available with URI / as RDF 5: data available as Linked Data
Synergy	Are agencies already making the data/services available for other purposes?	1: already voluntarily published 2: soon to be published voluntarily 3: to be published under alterable regional/national laws 4: already published (e.g. INSPIRE, Environmental Information Directive 2003/4/EC...) under an obligation (e.g. statutory, EU or contractual requirements) 5: to be published (e.g. INSPIRE, Environmental Information Directive 2003/4/EG...) under an obligation that is hard to change (e.g. statutory, EU or contractual requirements)

Source: KDZ, 2016, own illustration.

© KDZ August 2017 Seite 6

Internal and External Data Portals



- Internal part:**
 - Excel, or similar tools
 - Content-Management-Systems (CMS, e. g. Drupal)
 - Data Portals?
 - Semantic MediaWiki: <http://www.ogdcockpit.eu> 

- External part**
 - CKAN, (DCAN, GPL,...)

1 Phase 1:
Increasing Data transparency
(OGD)



www.kdz.or.at

4. Oktober 2012 · Seite 6

OGD Cockpit – www.ogdcockpit.eu

OGD Cockpit

Kollaborationstool zur Erstellung von PSI-Initiativen
mehr erfahren...

Aktuelles	Letzte Änderungen	Datei
2015-09-28	OGD Cockpit wird aktualisiert	
2014-10-30	OGD Cockpit auf der E-Government Konferenz vorgestellt	
2014-10-01	Semantic MediaWiki Konzept vorgestellt	
2014-08-04	OGD Cockpit auf Joinup eingebettet	
2014-05-08	Bonn startet den Echtbewerbsverfahren	
RSS	Neuseintrag eingebettet	

- Tool to manage data inside public agencies BEFORE they are published**
- Collaboratively add data about datasets**
- Can be used internally, or publicly available**
- <http://ogdcockpit.bonn.de> – shows information about datasets that will NOT be released**
- Open-Source-Software: Semantic MediaWiki**

4. Oktober 2012 · Seite 7

OGD Cockpit – Online Form

Bearbeite Datensatz: Testdatensatz Innsbruck

OGD	Datenmonitoring	Metadatenkern	weitere Metadaten	Ressourcen	weitere Anmerkungen
Organisation: <input type="text" value="KDZ"/> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Bonn <input type="checkbox"/> Köln <input type="checkbox"/> Linz <input type="checkbox"/> KDZ Verwendung: <input type="text"/> Nutzungskosten: <input type="text"/> Datenverantwortliche Person: <input type="text"/> Veröffentlichungsdatum: <input type="text" value="14.06.2013"/> Zeitlicher Gültigkeitszeitraum: <input type="text"/>	Produkt: <input type="text"/> Versionsinfo: <input type="text" value="2015-09 - Einführung der Versionsinfo"/> E-Mail-Kontakt: <input type="text"/> Veröffentlichungsanlass: <input type="text"/>				

OGD Cockpit - Result

OGD Cockpit ▾ Daten eingeben ▾ Projektpartner ▾ Suchen ▾ ...

Testdatensatz Innsbruck

	OGD	Datenmonitoring	Metadatenkern	weitere Metadaten	Ressourcen	Diskussion (intern)	Diskussion (extern)
Geheimhaltung/rechtliche Hindernisse:					1		
Personen-/Unternehmensbezug:					2		
Nutzungsrecht:					3		
Nutzen:					4		
Aufwand:					5		
Inhaltliche Datenqualität:					4		
Technische Verfügbarkeit:					3		
Synergie:					2		
Summe:					24		
Durschnitt:					3		

Weitere Anmerkungen [\[Bearbeiten\]](#)
weitere Texte

www.kdz.or.at

4. Oktober 2012 · Seite 9

Outlook

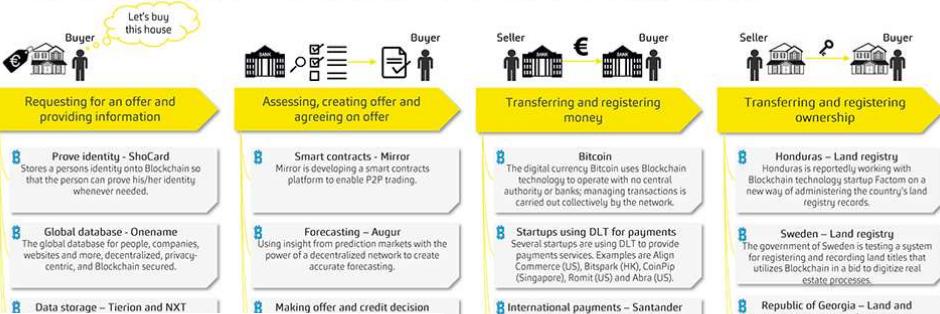
- Harvest data from internal data catalogue**
 - OGD Cockpit can deliver RDF, JSON, CSV to external data portal
- Provide complete data catalogue externally**
- Manage PSI requests?**
 - Done in internal file management systems
 - Documents can be linked (request, answer...)
- Define metadata used for PSI**
 - Internal costs? Fees?
 - Date of application? Data of answer?
 - Reason of rejection?
- Open Government Implementation Model will be updated to V 3.0 in 2016**
 - Your input is welcome!

Blockchain in Land Registration?

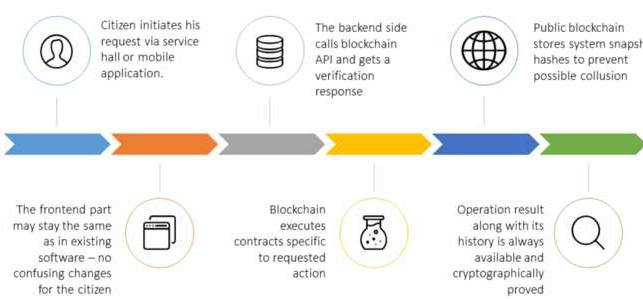


Searching for Mortgage Blockchain Use Cases

Different existing Blockchain initiatives can be linked to the current mortgage value chain



Blockchain Registry: How Does It Work?



Synechron
Digital / Business Consulting / Technology

4. Oktober 2012 · Seite 11

Contact



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@Kdz_Austria



www.facebook.com/Kdz.or.at

Open Government Implementation Model

Implementation of Open Government
Version 2.0

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translated by
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Standing Conference
of Towns and Municipalities
National Association of Local Authorities in Serbia

Standing Conference of Towns and Municipalities of Serbia 2017-06-07

LOI

We, the Standing Conference of Towns and Municipalities of Serbia, herewith confirm the cooperation with the KDZ – Centre for Public Administration for the CapaCity Workshop *Land Information Systems in the Danube Region: Quality of Data & Access to the Public* from June, 12-13, 2017 in Belgrade (Serbia).



Đorđe Stanović
Secretary General

a format
of

tina vienna
■ smart city agency
■ energy center
■ urban future hub

 SMART
CITY
WIEN
 international

in cooperation
with

