Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia
Željko Obradović, Bosnia and Herzegovina, Željko Bačić, Croatia

Key words: land consolidation, land tenure, ownership, state-owned agricultural land

SUMMARY

Bosnia and Herzegovina and Croatia are post-war and post-socialist countries having partly common history and problems regarding land tenure and land consolidation, but, due to the different recent development, they are tackling detected problems in different manner. Internal problems regarding land ownership, privatization and corruption, together with negative consequences of globalization and economic crisis resulted in the downfall of land usage for food production having visible impact on prosperity of the nations. The expansion of farming area represents therefore one of the priorities for both countries. Without well kept and well managed land registers, and without the development of efficient land tenure mechanisms, the mentioned problems can hardly be solved, hence, both countries are paying great attention to solving these problems.

Bosnia and Herzegovina fighting with the reducing size of uncultivated land, initiated the land consolidation activities on pilot locations in Orašje, Ravno and Trebinje after twenty years. Croatia has focused its activities on dealing with the issues related to the registration of state-owned agricultural land and on developing the efficient system for land tenure. For this purpose, different kinds of projects related to land registration, land consolidation, and finally the State agricultural land IT system establishment project have been executed.

In this paper, an overview of the executed activities, the achieved results and detected problems is given indicating also further activities.
SAŽETAK

Bosna i Hercegovina i Hrvatska su države izišle iz rata i socijalizma koje imaju dijelom zajedničku povijest i problem u odnosu na zakup zemljišta i komasacije, koje međutim zbog različitog recentnog razvoja na različite načine rješavaju detektirane problem. Interni problem koji se odnose na vlasništvo nad zemljištem, privatizaciju i korupciju, zajedno s negativnim posljedicama globalizacije i ekonomske krize, rezultirali su u smanjenju zemljišta koje se koristi za proizvodnju hrane, što ima vidljive posljedice na prosperitet nacija. Povećanje obrađenih površina predstavljaju stoga jedan od prioriteta obiju država. Bez sređene situacije u zemljišnim registrima i razvoja efikasnih mehanizama zakupa zemljišta teško je moguće riješiti navedene problem te zato obje zemlje posvećuju veliku pažnju tim problemima.

Bosna i Hercegovina, suočena s smanjenjem obrađenih površina započela je nakon 20 godina s aktivnostima komasacije zemljišta na pilot lokacijama Orašje, Ravno i Trebinje. Hrvatska je usmjerila svoje aktivnosti na sređivanje registracije državnog zemljišta i razvoja efikasnog sustava zakupa zemljišta. U tu svrhu različite vrste projekata, kao što su projekti sređivanja registracije zemljišta, projekti okrupnjavanja zemljišta i konačno uspostava IT sustava državnog poljoprivrednog zemljišta, su pokrenuti i provedeni.

U ovom radu prikazan je pregled provedenih aktivnosti, ostvarenih rezultata i detektiranih problema, kao i buduće aktivnosti naznačene.
Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia

Željko Obradović, Bosnia and Herzegovina, Željko Bačić, Croatia

1. INTRODUCTION

Almost twenty years after the war on their territory, Bosnia and Herzegovina and Croatia are facing numerous problems in the section of agricultural production that is directly connected to the structure of agricultural land, the status of registration in land registers, cadastre and land registry, and inability of efficient disposal of private, and especially state owned agricultural land. Agricultural land in both countries, see table 1, is characterized by high percentage of state-owned land being the case in most of transition countries in Europe, but also by extreme reduction in size of farms and plots occurring mostly in the states established in the area of former Yugoslavia. Due to the war events, depopulation, pollution of land with mines, transition and globalization affecting particularly agricultural production of economically weaker countries, the agricultural production in both countries has not reached pre-war level yet. Therefore, in both countries, there is a great need to regulate ownership over agricultural land and enable the development of land market in order to make farms grater and to increase thus the productivity and make investments in irrigation and equipment cost effective.

Great areas of state-owned agriculture land, more than 30% in both states, see table 1, are providing the preconditions for the states to be an active factor in agriculture policy, not only as its creators, but also a subject in land consolidation, especially the consolidation of farms. The change of economic system has created the situation in which the agriculture land cultivated in the former system by state-owned agricultural companies can be turned into an object of different forms of tenure, which initiated the procedure of passing the regulations about the disposal of agricultural land. Therefore, both entities in Bosnia and Herzegovina and Croatia adopted Laws on agriculture land. However, due to the outdated data in cadastre and land registry, to the lack of records about state-owned agricultural land, to the insufficient professional capacities in local and regional self-governments and state agencies, the agricultural land acts in both countries are implemented weakly and land tenure is carried out with considerable problems and is often the source of conflicts, and very often the object of corruptive actions.

The ministries responsible for agriculture have therefore invested lot of effort in establishing the institutions in past fifteen years that pass the regulations on agricultural land, especially in the establishment of Agriculture land agencies directly responsible for land disposal affairs, hence also the tenure of agriculture land. Croatia has also, as a part of its adaptation to EU, established Paying Agency for Agriculture, Fisheries and Rural Development, and Integrated Administrative Control System – IACS. One of the tasks of these agencies is also the creation of preconditions for efficient functioning of agricultural land market, which has not been accomplished yet. The agricultural land transactions are carried out individually and sporadically, while the tenders for sale of state owned agriculture land were rarely applied to. It does not mean that there is no interest to buy state owned
agriculture land, but the land offered by state is not the land that the private sector would like to buy, especially because it is not willing to pay the requested price. This is partly an absurd situation, because the price of construction land has reached up to 500 Euro/m² in the past ten years, while the average price of agriculture land is around 2.600 Euro/ha (10.000m²), see table 2. The mentioned price disparity of construction and agricultural land has created other situations for malversation in land transactions providing the possibility to purchase agricultural land, to convert it into building land and then sell it in order to gain extra profit.

Table 1: Land structure in Bosnia and Herzegovina and Croatia (Ćorić et all. 2011; USAID, 2006)

<table>
<thead>
<tr>
<th>Structure of land, ownership and average size</th>
<th>B&amp;H ha</th>
<th>%</th>
<th>Croatia ha</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area</td>
<td>5.112.879</td>
<td>100</td>
<td>5.653.700</td>
<td>100</td>
</tr>
<tr>
<td>Forests and barren land</td>
<td>2.709.769</td>
<td>53,00</td>
<td>2.688.687</td>
<td>45,76</td>
</tr>
<tr>
<td>Agriculture land</td>
<td>2.557.415</td>
<td>47,00</td>
<td>3.187.494</td>
<td>54,24</td>
</tr>
<tr>
<td>Private ownership</td>
<td>3.443.524</td>
<td>67,35</td>
<td>2.043.767*</td>
<td>64,12</td>
</tr>
<tr>
<td>State ownership</td>
<td>1.669.355</td>
<td>32,65</td>
<td>1.143.727*</td>
<td>35,88</td>
</tr>
<tr>
<td>a.s. of farm</td>
<td>2,0**</td>
<td></td>
<td>2,6</td>
<td></td>
</tr>
<tr>
<td>a.s. of plot</td>
<td>0,26**</td>
<td></td>
<td>0,61</td>
<td></td>
</tr>
</tbody>
</table>

* Only agricultural land
** Data are outdated, recent data are missing!

The geodetic authorities in both countries have an active role in regulating the state of agricultural land registration. These institutions work on a number of projects related to reform and improvement of land registers, their adjustment with the situation in the field and securing digital spatial data necessary for other registers and databases. These activities were earlier and are now supported by land administration reform project financed by the World Bank loans. The institutions in both countries have already completed one major project and are presently working on the following projects, Real Estate Registration Project in Bosnia and Herzegovina, i.e. Integrated Land Administration System Project in Croatia (Obradović et all, 2014). There are a lot of similarities in work on these projects, but also many differences due to the fact that the registration systems are different. Croatia has classic middle-European dual registration system (cadastre and land registry), the Federation of Bosnia and Herzegovina is in transition to dual registration system, while the Republic of Srpska in Bosnia and Herzegovina has integrated single registration system. As it was previously the case in Croatia, the preparatory activities, pilot projects and studies in Bosnia and Herzegovina have been funded in the past several years through bilateral technical aid projects. Today, the major bilateral project in Bosnia and Herzegovina is the Swedish project “Capacity Building for Improvement of Land Administration and Procedures in Bosnia and Herzegovina –
CILAP (CILAP Project) executed by Lantmäteriet and supported by the Kingdom of Norway (Statens kartverk).

<table>
<thead>
<tr>
<th>Country</th>
<th>(EUR/ha)</th>
<th>Country</th>
<th>(EUR/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>14.400</td>
<td>Croatia</td>
<td>2.600</td>
</tr>
<tr>
<td>Italy</td>
<td>14.300</td>
<td>Czech Republic</td>
<td>2.500</td>
</tr>
<tr>
<td>Germany</td>
<td>9.400</td>
<td>Hungary</td>
<td>1.900</td>
</tr>
<tr>
<td>Spain</td>
<td>6.000</td>
<td>Poland</td>
<td>1.300</td>
</tr>
<tr>
<td>Greece</td>
<td>5.100</td>
<td>Latvia</td>
<td>530</td>
</tr>
<tr>
<td>France</td>
<td>3.900</td>
<td>Romania</td>
<td>490</td>
</tr>
</tbody>
</table>

*Source: EUROSTAT, Ministry of Agriculture of Republic of Croatia*

The geodetic authorities of both countries have been included in the completed projects and are included in the projects in process either as competent authority of project execution or institutions participating in project realization.

2. LAND CONSOLIDATION PILOT PROJECTS IN ORAŠJE AND RAVNO

Land consolidation in Bosnia and Herzegovina started relatively late compared to other republics of the former state. Unlike Croatia, where the first land consolidations were carried out already at the time of Austro-Hungarian Empire, land consolidation in Bosnia and Herzegovina was conducted in two periods from 1981-1985 and 1985-1990. In this for land consolidation short period, less than 100.000 ha were included into land consolidation. For example, since 1902 when the first land consolidation started in Croatia, some 650.000 ha of agriculture land have been consolidated until the present day. The post-war political instability, territorial and ethnic division, neglecting authorities and permanent lack of budget funds contributed to the deterioration of agriculture, the disappearance of institutions and experienced staff, and vanishing of land consolidation activities in Bosnia and Herzegovina. Only in 2012, the realization of the project Preparation of Land Consolidation Strategies and the Implementation of Voluntary Land Consolidation Pilot Projects started with the help of World Food and Agriculture Organization – FAO. The objective of this project is to contribute to sustainable rural and agricultural development in Bosnia and Herzegovina through longer-term arrangements by implementing a strategy for land consolidation. The outcome of this project should be the preparation of the strategy for land consolidation and an increased capacity to design and implement modern land consolidation projects. The project should deliver three outputs (Eberlin, 2013):
- proposal for a national strategy for land consolidation,
- conduct of land consolidation pilot activities in selected pilot communities and
- implementation of institutional capacity development program for implementing land consolidation.

A project team was gathered including the experts at the state, entity and pilot project level, consisting of (Eberlin, 2013):
- national project coordinator,
- entity focal points
- international experts on land consolidation and GIS
- FAO experts on land tenure and rural development, land administration, legal issues of land tenure and rural development and gender,
- national experts on land consolidation, legal expert on land issues and gender and rural development, and
- local team consisting of local team leader/land consolidation planer, local community development expert/land use planner and local cadastre and land registration expert.

Within the frame of this project, two land consolidation pilot projects were launched in the Federation of Bosnia and Herzegovina. The pilot project Ravno, in the cadastral municipality Trnčine covering 104,5 ha, 799 parcels and 122 land possessors, see Figure 1.

Figure 1: Pilot project Ravno, land consolidation area. Mahir and Pijunović, 2013.
The second location is in the municipality of Orašje covering the parts of cadastral municipality of Vidovice and Kopanice. The area to be consolidated is about 3,000 ha. Both pilot projects will be executed in accordance to the applicable Law on Land Consolidation and Law on Survey and Real-Estate Cadastre. The whole process will be voluntary for land owners and possessors. In order to complete the land consolidation, the Municipality of Ravno:
- organized the referendum of the land consolidation participants related to their decision on the necessity to conduct the land consolidation,
- passed the decision on land consolidation acceptance,
- established the land consolidation commission,
- established the list of land consolidation participants with the data about the plot entries related to land consolidation volume,
- is working on solving the issue of usurped land in land consolidation area, and
- updated cadastral map and the register of land consolidation area.

The engaged surveying company established geodetic network and conducted surveying works in accordance with the project. Land consolidation commission defined the value of each parcel included in land consolidation, issued the real situation that each participant in land consolidation is entering into the process with. Based on new structure of parcels, the distribution of parcels was done in accordance with the wishes of the participants, and calculation was made. The parcels were publically presented and the opportunity for complaints opened. There was only one complaint lodged in the entire area, and it was successfully resolved. The final technical report was delivered in December 2013, and project successfully finished in 2014.

The same procedure has been applied on the pilot location Orašje, but the works are not being completed so quickly due to the size of land consolidation area and the fact that some areas are mine polluted. It is estimated that Orašje land consolidation will be finished by end of the year 2016.

3. REGISTRATION AND USAGE OF STATE-OWNED AGRICULTURAL LAND IN CROATIA

In twenty four years of Croatian independence, the ministry responsible for agriculture has adopted a number of strategic and program documents related to rural development and agricultural production. But it is hard not to get the impression that major questions have not yet been solved unambiguously, and the agricultural development in Croatia is not strategically clearly defined. The above mentioned is related to the fact that the basic regulation specifying the status and disposal of agriculture land, the Agricultural Land Act, was repeatedly passed four times in the observed period, in 1991, 2001, 2008 and 2013. The documents were changed and amended eight times in the periods between the adoptions of the new versions of the Law (Kontrec, 2014). In the context of land tenure, the government bodies are focused on problems related to state owned agriculture land, while the problems related to land tenure of private agriculture land have not been addressed (Mičević, 2014). The disposal of state-owned agricultural land is burdened with numerous problems.
caused according to the study “Analiza upravljanja poljoprivrednim zemljištem u Republici Hrvatskoj te preporuke za daljnju decentralizaciju” (Analysis of Agricultural Land Administration in the Republic of Croatia with Recommendations for Further Decentralization), in (USAID, 2006) by the following issues:

- relatively high portion of state ownership (approximately 1/3) in total agricultural land, as the consequence of socio-politic organization of former state, the problem present in all countries in transition in Europe,
- lack of organization and harmonization of cadastral and land registry data with the situation in the field resulting in underdeveloped land market,
- unsolved ownership relations – land for restitution of seized property, non-executed contracts on land exchange of former agriculture companies and similar,
- small size of agricultural land plots,
- unregulated plots and undeveloped infrastructure (roads, hydro-technical, hydro- melioration and agro-melioration structures),
- complexity of existing legal regulations,
- frequent changes and amendments of legal regulations,
- long-lasting waiting for necessary permissions, and
- insufficient professional qualification of staff in some local self-governments.

The mentioned study recommended among other things also the simplification and further decentralization of land tenure procedures that has not been made through the changes of regulations in 2008 and 2013. However, it has to be mentioned that in period from 2012-2014, a considerable effort has been made to regulate the status of land tenure on state-owned agricultural land. Namely, the figures from Agriculture Land Agency (Mičević, 2014) indicate that only 398 local self-governments out of 547 of them have delivered Agriculture Land Disposals Programs (73%) in the period of ten years from 2001-2011 out of which 384 were accepted. Also, the figures from 2014 show that out of 552,504 ha of the state owned agricultural land registered at that time, only the land disposal contracts for 263,307 ha were concluded covering only 48%, meaning that 52% of state-owned agriculture land was out of use, or used illegally.

The difference in volume of state-owned agricultural land regarding the fact that the Ministry of Agriculture dealt with the mentioned 552,504 ha, while the Croatian Bureau of Statistics processed 703,461 ha, showed that the records have been unreliable for number of years revealing that all projections and plans in the past twenty years have been doubtful since they are based on unreliable figures. Agricultural Land Agency made therefore the inventory of state-owned agricultural land in 2014 using the data from all available sources: cadastre maintained by State Geodetic Administration, land registry books maintained by municipal courts, Paying Agency for Agriculture, Fisheries and Rural Development Register, Croatian Forests and Croatian Water Register, the registers of Ministry of Environmental and Natural Protection, and other. Within the frame of this project, IT system for the disposal of state owned agricultural land has been established providing the possibility to determine that volume of state-owned agricultural land amounts to 738,126 ha being 33,6% more than indicated by the previous estimation given by the

Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia (8037)
Željko Obradović (Bosnia and Herzegovina) and Željko Bačić (Croatia)

FIG Working Week 2016
Recovery from Disaster
Christchurch, New Zealand, May 2–6, 2016
Ministry. The establishment of this IT system presents a new quality in the administration of state-owned agriculture land. This should be followed by:

- networking of this system with other institutions registers,
- procedures of registering the land ownership of the Republic of Croatia ownership on land,
- harmonization of the register entries with the situation in the field,
- concentration and land consolidation of land,
- establishment of billing system, and

Preparing the next steps, the Ministry of Agriculture and Agriculture Land Agency supported by Swedish Agency for International Development (SIDA) conducted in the years 2006-2011 the pilot project on concentration of agricultural land on five locations in Croatia. The selected locations were characterized by completely different natural and economic conditions. The goal of the project was to elaborate the methodology for concentration procedures, the absence of which also represents serious obstacle to efficient agricultural production in Croatia because of the small size of plots. The goals of this project were the following (Budanko-Penavić, 2008):

- contribution to sustainable development of agricultural and rural areas,
- support in the development of national policy of agricultural land concentration, and
- development of institutional, legal and technical frame for the concentration of agriculture land.

![Figure 2: Pilot location Vidovec, Agricultural land concentration project](image-url)
In the work on this project, the obstacles related to the concentration of agricultural land were detected, as well as to the scope of such project based on voluntary approach and absence of any comprehensive technical measures, which defined the limits of such procedure at the end. For example, on the pilot location Vidovec in Varaždin County, the pilot project included 3,540 plots covering the area of 395 ha with the average size of a being 0.67 ha, and the average size of a plot being 0.26 ha, see Figure 2. There were 1,100 proprietors included in the project with 351 participating in it. At the end, 173 procedures were launched, 27 parcel divisions done and 64 contracts concluded resulting in amalgamation of 66 plots.

Based on the collected information in this project, and the need to create the frame for land concentration in Croatia, the Ministry of Agriculture prepared the new Law on Land Consolidation of Agricultural Land which has been adopted in May of this year (2015). Adoption of Multiannual Land Consolidation Program is foreseen in 2016.

4. REGULATION OF REGISTERS OF UNREGULATED STATE-OWNED AGRICULTURAL LAND IN CROATIA

Becoming independent, Croatia has soon adopted new regulation on ownership (Law on Ownership and Other Real Rights in 1996). With this law, the social ownership established in the time of socialism has been abandoned. This change had considerable impact on disposal and usage of agricultural land because considerable areas of agricultural land had the status of social ownership. This land was used, in fact possessed by state-owned agricultural companies, cooperatives, fish pond companies and municipalities. The acquirement of this land was fair, by direct purchase from private owners, by obtaining the land taken away from private owners on different basis, the land sold because of tax debt or by exchanging the land for so called farmer’s pension. Agricultural companies regulated most of this land by constructing the basic canal network, detailed drainage and road network and afterwards merged such land in bigger or smaller blocks of land.

Per se, the above mentioned would not represent any problem when solving the ownership issues on land had not been neglected in accordance with the practice of that time. Since in the former registration system the registration of land in land registries was generally neglected, the cadastral records related to such land were relevant. But, regarding the state owned agricultural land, a great part of this socially owned land was also not registered in cadastre. Hence, the formed land blocks with road and canal network were kept in cadastre and land registry in hundreds of small plots with the description of previous land use as they were taken from previous owners, see Figure 3.
Being aware of this problem that escalated after the end of the Homeland War in 1996 and after the agricultural production was renewed in many areas, Croatia adopted “Program državne izmjere i katastra nekretnina za razdoblje 2001-2005” (State Survey and Real Estate Cadastre Programme for the period from 2001-2005) (Official Gazette 64/2001) and systematically approached the resolution of this problem. Based on available experience, the State Geodetic Administration as the authority responsible for the Programme developed together with the Ministry of Justice, State Attorney’s Office, regional (counties) and local (towns and municipalities) the procedure for the regulation of unregulated state-owned agricultural land that was implemented on the territory of eight continental counties where such situations were frequent.

The procedure consisted of four phases:

- organization of involved institutions, preparation and definition of the area of intervention,
- collection of all available documentation,
- geodetic field survey and drafting the geodetic elaborate, and
- solving the title registration for the Republic of Croatia.

Since this activity was one of the priorities of State Geodetic Administration, and regional and local self governments were very interested in those activities, the first phase including the arrangement and preparation, starting with the letter of intention and finishing with signing the financing agreement, took usually less than a year. It depended in fact mainly on the funds available to participants. The second and third phase, i.e. the geodetic works executed by geodetic companies, that depended on the size of the area lasted several months to one year. Only the fourth phase, i.e. solving the ownership registration for the Republic of Croatia, was not possible to be defined in time, since it depended on multiple factors: municipal courts and state attorney office capacities,
condition and completeness of available documentation on acquiring of land by state-owned agriculture company, and the practice of judicial bodies in some specific situations. Apart from demanding less time, the proposed methodology was also significantly cheaper.

The plots with no documents related to the manner in which they were acquired by agricultural companies caused most of the problems in ownership registration. (yellow plots on Figure 3). Assuming that the registration of such plots would not be possible in the same manner as for other plots with proper documentation, and due to the fact that such plots actually did not exist in the field for two or more decades, the land was reserved for such plots during the surveying works on the edges of the defined areas until the final decision was made in the municipal court. Unfortunately, the lawyers did not have equal opinion on how to solve the problems, and the solutions varied from those made on the basis of accepting the prepared documents to those requiring that such problematic plots had to be physically reconstructed in the field at their original location. The above mentioned resulted many times in delaying the completion of the whole procedure and in increased costs.

In spite of the mentioned problems, the described activity was intensely conducted in years 2001–2011, and the effects of this activity were more than positive. By means of the described procedure conducted in 10 years, about 50,000 ha of unregulated state-owned agricultural land on about 100 locations were registered. The number of plots registered in cadastre was about 250,000 plots, and at the end of the whole activity that resulted in fact in harmonization of the situation in the field with the data entered in cadastral and land registry records, less than 5,000 plots were registered, see example on Figure 4. Further 50,000 ha of agricultural land were regulated by means of cadastral surveys, especially through the project of Cadastre and Land Registry Regulation in the valley of the river Neretva that included 16,344 ha.

![Figure 4: Cadastre situation example before and after the completion of regulation project](image-url)

---

Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia (8037)
Željko Obradović (Bosnia and Herzegovina) and Željko Bačić (Croatia)

FIG Working Week 2016
Recovery from Disaster
Christchurch, New Zealand, May 2–6, 2016
5. CONCLUSION

The activities of the institutions in Bosnia and Herzegovina, and Croatia related to the condition and usage of agricultural land in those two countries show clearly that the problems and their causes have been detected, as well as that a larger number of projects have been completed or are in process aiming to find the solutions and develop models to remove specific obstacles or problems. It is also to perceive that all taken measures have not resulted yet in the achievement of substantial changes regarding the disposal of agricultural land and consequently increased the areas that are cultivated. The reasons for this are not only in the agricultural system, but they are of more general character because of the overall weakness of the states, the inefficiency of politics to adopt understandable and executable legal regulations and to define national strategies, the inefficient judicial and governmental administration, its pauperization on to many institutions and regional and local self governments are additionally slowing down the implementation of reforms and bringing the agricultural land to its purpose.

It has to be mentioned that the circumstances in which those two countries conducted all mentioned activities have been additionally burdened with many problems resulting from prior wartime. However, all conducted activities are properly focused on regulating the present situation and on contributing to the establishment of the framework for modern and efficient agricultural production, but the time needed to do it remains still unknown. Therefore measures that follow, like multiannual programmes, full harmonization of cadastre and land registry and establishment of efficient IT systems should provide framework for successful end of started reforms.

REFERENCES


EUROSTAT: http://epp.eurostat.ec.europa.eu


BIOGRAPHICAL NOTES

<table>
<thead>
<tr>
<th>Name, Surname</th>
<th>Željko, Obradović</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationality</td>
<td>Croat</td>
</tr>
<tr>
<td>Date of birth</td>
<td>10th April 1964</td>
</tr>
<tr>
<td>Status</td>
<td>Married</td>
</tr>
<tr>
<td>Education:</td>
<td>1984-1990</td>
</tr>
<tr>
<td></td>
<td>Dipl. Ing. University of Sarajevo, Faculty of Geodesy</td>
</tr>
<tr>
<td>Employers:</td>
<td></td>
</tr>
<tr>
<td>07/1991 – 01/2005</td>
<td>Local and Regional Cadastre Offices, Director</td>
</tr>
<tr>
<td>01/2005 –</td>
<td>Federal Administration for Geodetic and Real Property Affairs, Director</td>
</tr>
<tr>
<td>Memberships:</td>
<td></td>
</tr>
<tr>
<td>Since 1995</td>
<td>Geodetic Association of Herceg-Bosna, member</td>
</tr>
<tr>
<td>Since 2006</td>
<td>Eurogeographics, member</td>
</tr>
<tr>
<td>Since 2009</td>
<td>Cambridge Conference, member</td>
</tr>
<tr>
<td>Since 2009-2011</td>
<td>Eurogeographics Management Board member</td>
</tr>
<tr>
<td>Interests:</td>
<td>cadastre, digital mapping, physical planning, ecology, cartography</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name, Surname</th>
<th>Željko, Bačić</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationality</td>
<td>Croat</td>
</tr>
<tr>
<td>Date of birth</td>
<td>11th January 1961</td>
</tr>
</tbody>
</table>

Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia (8037)
Željko Obradović (Bosnia and Herzegovina) and Željko Bačić (Croatia)

FIG Working Week 2016
Recovery from Disaster
Christchurch, New Zealand, May 2–6, 2016
Status: Married

Education:
1979-1986 Dipl. Ing. University of Zagreb, Faculty of Geodesy
1993-1997 PhD. Technical University Graz, Department for Applied Geodesy and Photogrammetry

Employers:
12/1987 - 07/1997 University of Zagreb, Faculty of Geodesy – teaching assistant
07/1997 – University of Zagreb, Faculty of Geodesy – assistant professor
08/1999 – 07/2000 State Geodetic Administration of Croatia, Deputy Director General
07/2000 – 02/2012 State Geodetic Administration of Croatia, Director General
02/2012 – University of Zagreb, Faculty of Geodesy – full professor
10/2015 – University of Zagreb, Faculty of Geodesy, Vice Dean for science and international relations

Memberships:
Since 1987 Croatian Geodetic Association, member
Since 1999 Croatian Chamber of Chartered Engineers of Geodesy, member
2002-2009 Eurogeographics Management Board, member
2004-2007 Eurogeographics Management Board, president
Since 2005 Geodetic Association of Herceg-Bosna, honorary member
2005-2011 Cambridge Conference Advisory Board, member
Since 2009 Croatian Cartographica Association, honorary member

Interests: SDI, cartography, satellite positioning, GNSS permanent networks, capacity building in surveying, …

CONTACTS
Title, given name and family name: Željko Obradović
Institution: Federal Administration for Geodetic and Property Affairs
Address: Marka Marulića 2
City: 71000 Sarajevo
COUNTRY: Bosnia and Herzegovina
Tel. + 387 33 215 304
Fax. + 387 33 586 056
Email: zeljko.obradovic@fgu.com.ba

Title, given name and family name: Željko Bačić
Institution: University of Zagreb, Faculty of Geodesy
Address: Kačićeva 26

Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia (8037)
Željko Obradović (Bosnia and Herzegovina) and Željko Bačić (Croatia)

FIG Working Week 2016
Recovery from Disaster
Christchurch, New Zealand, May 2–6, 2016
Land Tenure and Land Consolidation Issues in Bosnia and Herzegovina and Croatia (8037)
Željko Obradović (Bosnia and Herzegovina) and Željko Bačić (Croatia)

FIG Working Week 2016
Recovery from Disaster
Christchurch, New Zealand, May 2–6, 2016