

Land Resources in BiH

4th International Workshop on Land Markets and Land Consolidation

Budapest, 12-15 November 2012

1.General Overview

1.1. Bosnia and Herzegovina- Basic facts

Official name	Bosnia and Herzegovina (Most commonly abbreviated as BiH)
Capital city	Sarajevo (Population 0.5 million)
Other major cities	Banja Luka, Bihać, Tuzla, Mostar, Zenica, Travnik, Jajce, Bijeljina
Geographic location	South Eastern Europe, borders with Croatia (932 km), Serbia (312 km) and Montenegro (215 km)
Total size	51.209 km ²
Population	3.8 million

1.2. Administrative organization

2 entities: (Federation of BiH and Republika Srpska) and Brčko District



Figure 1: Map of Bosnia and Herzegovina with inter-entity boundary line

3

1.3. Economy of Bosnia and Herzegovina

• Currency	Bosnia and Herzegovina convertible mark
• Fiscal year	Calendar year
• Trade organisations	CEFTA
• GDP	\$18,15 billion (2012 est.)
• GDP growth	2.2% (2011 est.)
• GDP per capita	\$4,618 (2011 est.) (nominal)
• GDP by sector	agriculture: 10.2% , industry: 23.9%, services: 66% (2006 est.)
• Inflation (CPI)	3.1% (2011 est.)
• Labour force	1.196 million (2007)
• Unemployment	27.6% (July 2012)
• Average gross salary	1263 BAM / 800 \$ (Mar 2012)
• Average net salary	828 BAM 530\$ (Mar 2012)
• Main industries	steel, coal, iron ore, lead, zinc, manganese, bauxite, vehicles, textiles, tobacco products, furniture, tanks, aircraft, domestic appliances, oil refining
• Exports	\$6.711 billion f.o.b. (2008)
• Export goods	metals, clothing, wood products
• Main export partners	Croatia 17.22%, Serbia 14.1%, Germany 13.6%, Italy 12.56%, Slovenia 9.15%, Austria 6.18% (2008)
• Imports	\$16.286 billion f.o.b. (2008)
• Import goods	machinery and equipment, chemicals, fuels, food
• Main import partners	Croatia 17.06%, Germany 11.75%, Serbia 10.59%, Italy 9.33%, Slovenia 5.89%, Hungary 4.14%, Austria 3.72% (2008)
• Public debt	44% of GDP (2011 est.)
• Revenues	\$8.607 billion
• Expenses	\$8.962 billion

Main data source: CIA World Fact Book. All values, unless otherwise stated, are in US dollar

4

1.4. Land resources

- Total acreage: 51 000 km² (50.3% agricultural land (25 720 km²), 48.3% timberland)
- Total arable land: 15 850 km² or 62% of total acreage
- Ploughed land amounts 19.9% of the total acreage
- 0.59 hectares of agricultural land per capita

Source: Senija Alibegovic-Grbic, Country Pasture/Forage Resource Profile



Figure 2: BiH Land Use

5

2.Land Quality

2.1. Land quality by classes

Soils are classified in 8 classes, with the following breakdown:

- Best quality soils (Classes I-III), 14%
- Class IV, 17.9%
- Class V, 16.7%
- Class VI, 31.83%
- Classes VII and VIII, 19.4%

LAND CLASS	hectares	percentage
I - III	717,600	14.04
IV	917,500	17.94
V	856,000	16.74
VI	1,627,400	31.83
VII - VIII	994,400	19.45

Source: Institute of Agropedology, Sarajevo Long-Term Program of Development, 1986-2000

2.2. Land quality by terrain features

- 45% of agricultural land is hilly with elevation ranging from 300-700 m, can be used for semi-intensive livestock production
- Mountainous areas cover 35% (Elevation exceeding 700 m) of total agricultural acreage – grazing land suitable for use only in spring and summer, due to the steep slopes, low fertility, high erodability, etc.
- Less than 20% of total arable land is suitable for intensive agricultural use (Lowlands, river valleys).

In general, irrigation is used very sparsely across the country, facilities available are far below the requirements.

Higher lands have been out of soil fertility improvement schemes in the past, thus leaving large complexes of soils unprotected, prone to erosion and degradation due to unsuitable land use practices.

Lower lands have been subjected to a number of quality improvement measures (Flood protection, irrigation/drainage, land consolidation), but are affected due to lack of corresponding schemes in the upper lands.

- Great proportion of soils are still heavily mined (237 000 hectares) both in low and igh-land areas.

7

3. Specifics of land use

- Agriculture still accounts for a major contributor to the GDP (10.1% in 2007, Source: Central Bank of BiH), thus making land a valuable asset.
- Majority of producers are small-scale farmers, with average size of property being below 3 hectares in more than 66% of cases.
- Average size of farm is less than 3.0 hectares with land divided into 8, 10, or more plots.
- **Property fragmentation** is a huge obstacle for intensive farming (See table 2).

Farm size in ha	Number of farms	Percentage of total area
Up to 1	180,673	33.93
1 - 3	178,138	33.45
3 - 5	86,272	16.20
5 - 8	56,115	10.54
8 -10	16,661	3.13
More than 10	14,669	2.75
Total	532,528	100.00
Source: Statistics Bulletin (1983)		

8

Majority of agricultural land is at higher elevation as shown in table 3:

Table 3. Different categories of land use per inhabitant			
Ratio of land use		Height above sea level	
Category	ha/capita*	Metres	Percentage
Ploughed fields and gardens	0.23	0 - 200	14.2
Total arable	0.36	200 - 500	29.0
Total agricultural land	0.59	500 - 1,000	32.1
		1,000 - 1,500	20.8
		1,500 - 2,000	3.8
		Over 2,000	0.1

*Source: World Bank, Reconstruction and Return Task Force - RRTF.

- Cereals cover the largest portion of arable land, followed by grazing ranges and vegetables.
- Technology in use on agricultural holdings is outdated with no sufficient investment into improvement.
- Agricultural statistics unreliable with no continuous time series.
- Agriculture, hunting and forestry contribute around 7% to the Gross Domestic Product in FB&H and 17% in RS (Source: MoFTER)
- Agricultural households play a considerable social buffer role providing food security for family members in both rural and urban areas.
- Agriculture plays an important role in the hidden economy, which comprises about 40% of GDP (Bojnec, 2005).

- Agricultural share in GDP, as shown in Figure 1, is decreasing, having fallen from 13 per cent in 1999 to 8.65 per cent in 2006.

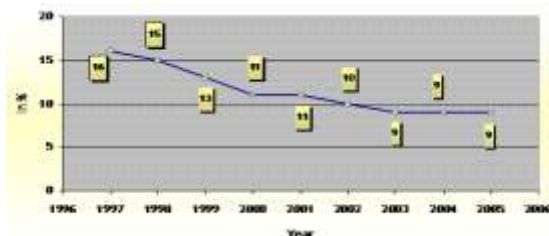


Figure 1: Agricultural share in GDP

- Large number of agricultural producers are not covered by official statistics.
- BiH is a net importer of food - Agriculture does not satisfy the country's need for food.
- Trade deficit is higher in agriculture than in the total trade.
- Agricultural issues at state level are handled by MoFTER, based on the Law on Agriculture, but operational and management issues are handled by entity Ministries, based on their respective entity laws.

4. Land use as related to soil types, climate and topography

- Mountainous areas are dominant in the south and west of the country.
- Hilly terrain are scattered in the central part and the north.
- Flatlands are in the north-east, these are most valuable and fertile soils.

Relative distribution of different terrain types:

- Plains or lowland areas (up to 300 metres), 11.3%;
- Hilly area (300-500 metres), and Hilly-Mountainous areas (500-700 metres), 26.3%;
- Mountainous areas (Above 700 metres), Mediterranean-Mountainous area (700-500 metres above sea level), 57.2%;
- Mediterranean areas (Below 500 metres above sea level), 5.2%.

Bosnia and Herzegovina is very rich in soil types (Figure 2) whose characteristics are derived from its range of geology, morphology, climate conditions and other factors. There are 3 general classes of soils based on their geology, morphology and climate conditions:

Low land zone, in the northern part of B&H, is the most valuable land. There, the degree of development of primary food production is much higher than in the hilly-mountainous areas. The most common soils are: Stagnic Podzoluvisols, Fluvisols, Umbric Gleysols and Eutric Gleysols.

Hilly zone is more heterogeneous than the lowland zone in terms of soil. Considerable part here has slopes above 13% and the processes of erosion are very prominent and are exacerbated by inappropriate farming, lack of water and soil conservation measures and preference for row-crops (maize and potato) on such terrains. The commonest soil types are: Chromic Luvisols, Eutric Cambisols, Leptosols x Rendzic Leptosols and Vertisols.

Mountain zone, where erosion processes are also present, although these lands are mostly covered by forests and grasslands. Among crops grown dominant ones are rye, barley, oats and potato. The commonest soil types here are: Dystric Cambisols and Dystric Regosols, followed by Leptosols - Rendzic Leptosols and Regosols.

Mediterranean zone, with warmer climatic conditions . It can accommodate a wide variety of crops and support intensive farming so that besides traditional arable crops, early vegetables are grown for local markets.

Fruit-growing and vine-growing are also very common here. The most frequently found soil types are: Lithic Leptosols, Regosols, Leptosols - Rendzic Leptosols, Chromic Cambisols, Fluvisols in the river valleys, Umbric and Eutric Gleysols in the karst fields. In swamps, Histosols are often present and they bear environmental significance as some rare birds habitats.

In summary, the **main characteristics of soils** in Bosnia and Herzegovina are:

- Acid soils have a share of more than 1/3 of the land;
- Humus content is low;
- Level of the most important nutrients is low;
- Soils are generally shallow;
- Excess water is found on about 14% of the territory;
- Inadequate concern for improvement of fertility;
- Individual land holdings are small and fragmented;
- Erosion is a problem particularly on sloping land.

13

Figure 4: Soil map of BiH

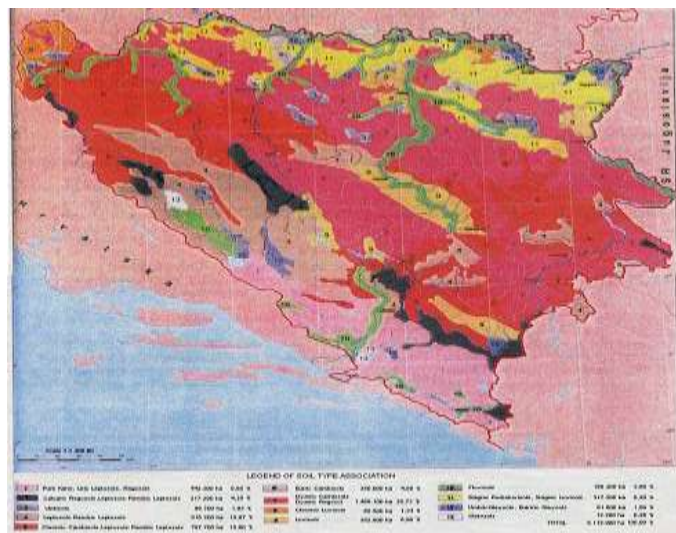
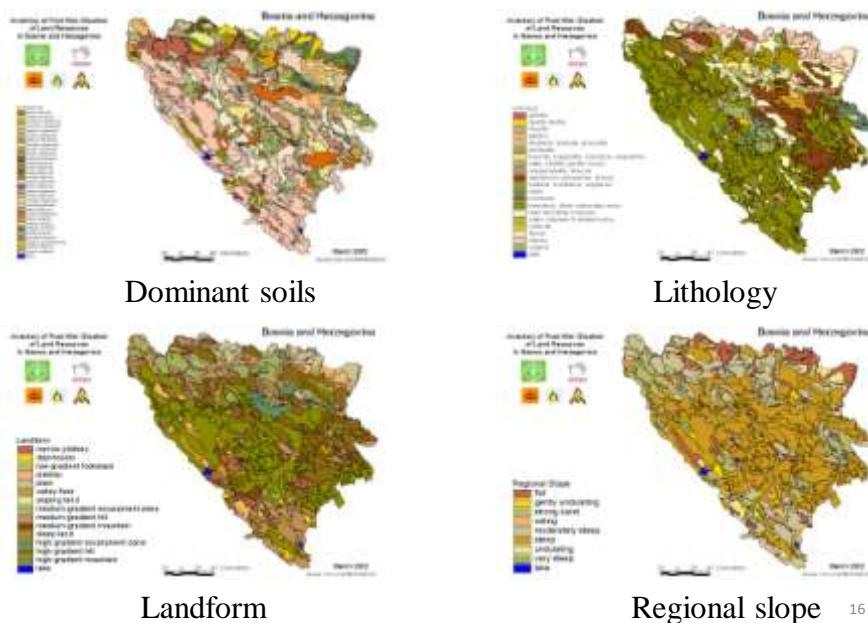




Figure 5: Soil classification (FAO) with spatial distribution

15

Figure 6: Topographical presentation of different terrain features in BiH



Dominant soils

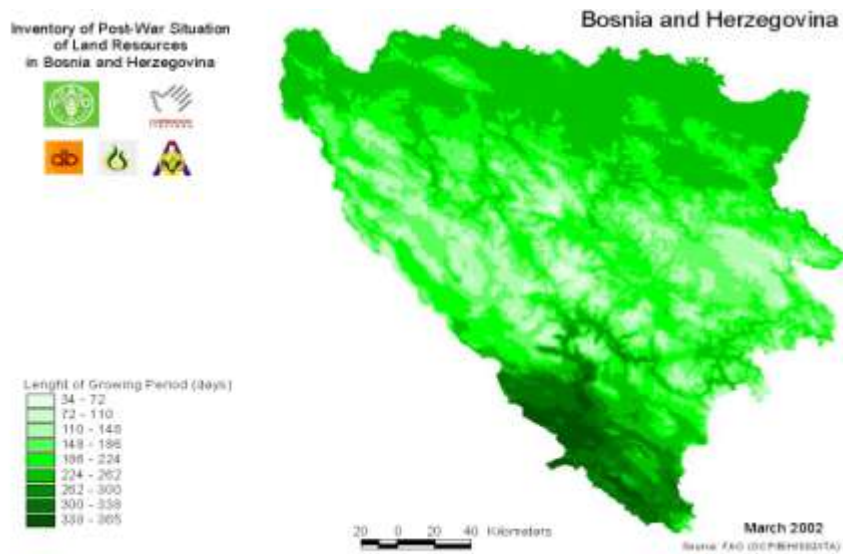
Lithology

Landform

Regional slope

16

Figure 7: Length of growing period in BiH



17

5. Specifics of land use in post-war period

- Huge number of displaced people are still out of their home areas-Great deals of unused/abandoned land complexes. Complicated property rights situation thus made even more complex.
- Former agri-combines hold larger complexes of state owned land that is not used in the most effective ways (Lack of investment, knowledge, modern technology, etc.) or is not used at all.
- Increased deforestation, making excessive erosion even more challenging to tackle.
- Significant losses of predominantly agricultural land due to the increased use for non-agricultural purposes (Roads, shopping malls, recreation areas, housing units, etc.). Most often the most productive soils are affected by this change of their primary use.

Specific address to the workshop program in context of land use situation in BiH

1. Land market functioning as part of rural development- Situation in BiH

Opening statements:

a)

A well-functioning land market can help in adjusting adequately to changing conditions that determine the competitiveness of the European model of agriculture. Farms can buy / exchange / swap land to improve their structure and to scale up to reach the appropriate size for global competition.

- Bosnian agriculture is far from the EU level, both in terms of development and its character.
- Policy making and implementation is on entity level, with very weak role of state that is reduced to mere coordination.
- Lack of comprehensive reports and analysis hinders policy making in all segments, thus making it hard to discuss it on how far the country is from the European model of agriculture, both in terms of its development and competitiveness.
- Issues pertaining anything to do with land are not resolved at state level, the state cannot intervene, since there is no state bill of rights tackling the issues related to land. Entities have their own laws.
- There is little provision in the respective laws that make it possible for the land to be marketed.
- Private land can be sold or purchased. Great room in the entity laws was made for the implementation of pre-emptive rights. As for state/entity owned land, there are strict restrictions for soils of best quality to be marketed.
- The current state of Bosnian agriculture makes very little provision for discussion on global competition.
- The country cannot be seen as a competitor even on the regional scale, and is a huge net importer of food.
- **Change of situation towards making the country produce enough food to be self-sustained is seen as a top priority in the first place.**
- **Achieving this goal calls for a number of reforms and adoption of standards, the land marketability being just one factor. Land marketability at the moment is seen neither as the top priority nor the solution to the complex situation in the country.**
- Current TCP could be a good tool in probing the situation in terms of land bankability, marketability, or exchangeability. For a more comprehensive picture, more areas within the country should be probed.

b)

Proper land use and structures are considered by the network as being crucial for contributing to sound rural development. The LANDNET and FARLAND networks are trying to create awareness about this by discussing this in different contexts.

- In BiH, at the moment, there could be no practical measures on the RD at state level, since the country has no a strategic document to tackle this field, nor does it have corresponding action plans. Certain provision has been made in the state level Agriculture Bill, only in terms of necessity for the RD strategy to be done within certain timeframe.
- Weak statistics and reporting system make it very hard for the assessment of land use, its structures, state of the infrastructure, etc. It is hard to estimate the total of land being in use for agriculture yearly.
- Situation is made more complex due to the evident wrong practices in land use, lack of investment into rural infrastructure, lack of feedback on the effects of subsidy policy.
- Subsidies are not based on the informed policy making, certain efforts are being made towards this goal.
- Rural land structure is heavily fragmented and is under a constant threat of further fragmentation
- Majority of holdings are non-market producers, using frequently outdated cultivation techniques, lacking knowledge on the very basics.
- Rural areas are not up to the market demands, neither in terms of productivity, nor are they viable enough to meet requirements of standards of market-centered agriculture.
- Although bad land use practices pose a great environmental risk, biodiversity is still well preserved thanks to the low level of agricultural technology being in use.

2. Land consolidation and broader rural/ regional development

Opening statements

a)

Broadening land consolidation towards integrated rural and regional development is becoming more and more important. One of the topics that makes this very clear is climate change. The effects of climate change put many European regions under pressure of more extreme weather conditions and increase of natural hazards.

- Weak and fragmented rural holdings and outdated infrastructure make it difficult to cope with rising demands for quick and effective response in case of natural hazards.
- Lack of coordination on different levels in the country is one of the core problems in cases of regional integrative approach towards handling the issues of global climate changes.
- Extended dry or wet seasons diminish capacity of predominantly small holdings to cope; Lack of timely response of state/entity institutions in cases of damages makes the situation even less bearable for both the small producers and their communities.

b)

The integrated approach is crucial as ecological, social and economic aspects are all involved when implementing climate adaptation strategies.

- Since the country has a complicated administrative setup, it is very difficult to come up with any integrative approach to crucial issues.
- Huge level of autonomy across the administrative /constitutional setup with weak and coordinating role of state, lead towards overall disintegrative tendencies, creation of state level strategic documents on land tenure being one of them
- Fragmented capacities within the country reduce its resilience and response capacity in cases of some major natural disasters.

c)

F:ACTS! is a European partnership that focuses on increasing resilience of risk prone areas to respond to extreme weather conditions due to climate change. **F:ACTS!** is part of the Interregional Cooperation Programme INTERREG IVC, financed by the European Union's Regional Development Fund. INTERREG IVC, helps Regions of Europe to work together to share experience and good practice in the areas of innovation, the knowledge economy, the environment and risk prevention. Fourteen partners from eight European regions are involved. Themes that the project addresses are also very relevant in relation to Land consolidation and rural development: multifunctional land use, stakeholder involvement, governance and economic viability.

- Integration at both regional and national level is the logical step towards better coping with ever demanding task of responding to the climate changes.
- What is lacking in BiH is coordination on national level, which is at times harder to achieve than integration and coordination on regional level
- Too many open issues within the country are in the core of the problem (not so many of them with the neighbouring countries)
- Key stakeholder involvement is one crucial step in closing the issues
- Increase in knowledge would greatly accelerate resolving the issues

23

3. Defining future role of the LANDNET

Opening statement:

a)

A part of the current program will focus on the overall question of how to sustain the LANDNET within all involved countries in order to reach the broader objective to come to a more dynamic land market and a more viable land use structure. Discussion will be centered around questions like “how to reform the current LANDNET into a stable, well institutionalised network on rural land structure issues”, and “how to organize more commitment /legitimacy in the countries involved”?

- Dynamic land market as the facility whose development is driven by principles of free trade happens in BiH from case to case, such cases are major public works, e.g. building roads, dams, etc.
- Market as such sometimes gets created literally ad hoc and is depended on both the needs of stake holders concerned and supporting infrastructure, such as resolving property rights, cash flow, etc.

24

Thank you for your patience

BiH team:

Fahro Belko (MoFTER BiH)

Boris Marković (MoAFWM RS)

Eldin Alikadić (MoAWMF F BiH)