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A snapshot of Western Balkan's agriculture from the perspective of EU accession

The Western Balkan countries can be characterised by their shared goal, which is rapid accession to the EU. Agriculture is an important element to achieving this goal. The role of agriculture differs widely among the analysed countries but is more important than the average of the EU. This study gives a comprehensive overview of the most important agricultural indicators. These indicators give a precise picture of the sector's relevance, production structure, efficiency and international relations. After demonstrating changes in input use, production structure, prices and agricultural policies, the next section identifies some of its reasons. The analysis concentrates on the newest available data. Serbia is the leading producer and the only net exporter of agricultural goods in the region. Nevertheless, the current situation is endangered by several issues, such as unbalanced sectoral production, fragmented production structure, relatively low yields, unfavourable export composition, poor food hygiene and quality control, which indicate that painful and hard actions are needed.

Keywords: Western Balkans, state of agriculture, trade balance, production structure

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Introduction

The aim of this study is to give an overview of the most important agricultural indicators in the Western Balkan countries, i.e. Albania, Bosnia and Herzegovina (BiH), Croatia, the Former Yugoslav Republic of Macedonia (FYROM), Montenegro and Serbia. What is the actual state of agriculture in these countries? How does their performance (agricultural productivity, competitiveness) compare to the averages of the European Union (EU) and why? Could these countries reach positive trade balances? What are the major challenges and policy lessons?

The Western Balkans has a long history of research, the majority of which is basically social and political analysis. The chances of EU accession are measured on these bases. It reflects the higher, but not central role of agriculture in these countries. The World Bank studies focus on specific issues such as the state and problems of land and land rental markets (Swinnen *et al*., 2006), or the difficulties of the health and pension systems (Bredenkamp *et al*., 2008). The European Bank for Reconstruction and Development (EBRD) and the Food and Agriculture Organisation (FAO) carried out country specific analyses (e.g. EBRD, 2007; FAO, 2005). In addition to these, the FAO recently published two studies in its regional studies series on the agriculture of the region. The first was about the New Member States (NMS) of the EU (Csáki and Jámbor, 2009), while the second was on the Western Balkans (Mizik, 2010). The present topic is closer to the latter, but the methodology is different. Instead of using milestones, it uses the most recent data and tries to dig deeper in some areas such as agricultural value added per worker, export structure and terms of trade.

Arcotrass (2006) gave a detailed overview of agriculture and the food industry of the Western Balkans. One of the remarkable findings of the study was the lack of consistent and comparable data. The results of the EU Framework 7 project Agripolicy gave a detailed picture of the actual state of agriculture and agricultural policy of the Western Balkan countries (Volk, 2010) but it, too, showed that it was not always possible to gather reliable and precise data even for national actors. Erjavec (2010) analysed the integration of the Western Balkan countries, especially with its agricultural aspects, while Bojnec and Fertő (2009, 2010) assessed the competitiveness of the agricultural and food industrial products of the region.

Methodology

The data used in this study came from three main sources. Data on production, prices and yields are from the FAO database (http://faostat.fao.org). The basis of the trade connections is the World Trade Organisation (WTO) database (www.wto.org). Analyses on the relevance and role of agriculture are based on the World Development Indicators of the World Bank and national statistics. The national and international literature was used to confirm the results.

The study has two sections. The first gives an overview of the most important indicators in order to have a clear picture of the sector's relevance, production structure, international relations and efficiency. Selected indicators, namely agricultural value added, agricultural employment and the level of production, are commonly used to assess how important a role agriculture plays. Production is separated into crops and livestock. It gives a great opportunity to see the big differences among the countries. Two indicators are used to demonstrate international issues. The share of agricultural exports and imports within the total exports and imports gives a clear picture of how important the sector is in the field of international trade. The share of raw materials in agricultural trade helps to provide suggestions on what these countries should pay attention to. Productivity is measured by value added per worker and yields of the most important agricultural products (maize, pork and cow milk). Finally, trade balance is presented as an overall assessment of agricultural trade.

The second section identifies some of the reasons for the changes by analysing input use, production structure, prices and agricultural policies. Input use covers changes in agricultural labour force, agricultural area and arable land

and technology. Technology contains two essential inputs: machinery (measured by relative number of tractors) and fertiliser use. Production structure gives a clear picture of production units and their main characteristics. Prices are linked to products analysed in the first section. The agricultural policy part concentrates on financial support as a key element of competitiveness.

The performance of agriculture in the Western Balkans

The main characteristics of agriculture

Three indicators were used in order to measure the importance of agriculture: agricultural value added as a share of GDP (%), share of agricultural employment (%) and the size of agricultural production (international dollar[1]) (Figure 1). Albania is an exception with by far the highest agricultural sector measured by both agricultural value added as a share of GDP and share of agricultural employment. The agricultural value added as a share of GDP was over half of the GDP in the 1990s and even in 2009 it was higher than the value added of industry (19.7%) according to the World Bank database (http://data.worldbank.org). With a 58% share, the sector has a huge role in employment, but it was also much higher in earlier years. Croatia (agricultural value added as a share of GDP) and Montenegro (share of agricultural employment) can be found on the other side. In the last 20 years no obvious and continuous decreasing trend can be identified (Mizik, 2011a). Even the lowest values are far above the averages of the EU, which, according to Eurostat, were 1.6% (value added) and 4.8% (employment) in 2009. Moreover, these values include the newest Member States, Bulgaria and Romania, where there are significant agricultural sectors.

Regarding the output of agriculture, Serbia is the largest producer of the region. Its production was higher than that of the five other Western Balkan countries in 2009. Contrary to the EU where agricultural production is stagnating, the region shows a slightly increasing trend according to the FAO database.

However, the sectoral structure of production shows remarkable differences, with livestock being close to crops in value for Albania and Montenegro but much lower in the other countries (Figure 2). The clearest example of the crop dominance is the FYROM where it accounts for 76% of total production. This is interesting, because Montenegro and the FYROM are geographically similar (i.e. mountainous) countries, which does not favour crop production. The value of this ratio is 2/3 in the three largest countries (Serbia, Croatia and BiH). The sectoral production of the EU, according to the FAO database, is balanced over the years despite the huge differences among the countries (e.g. crops

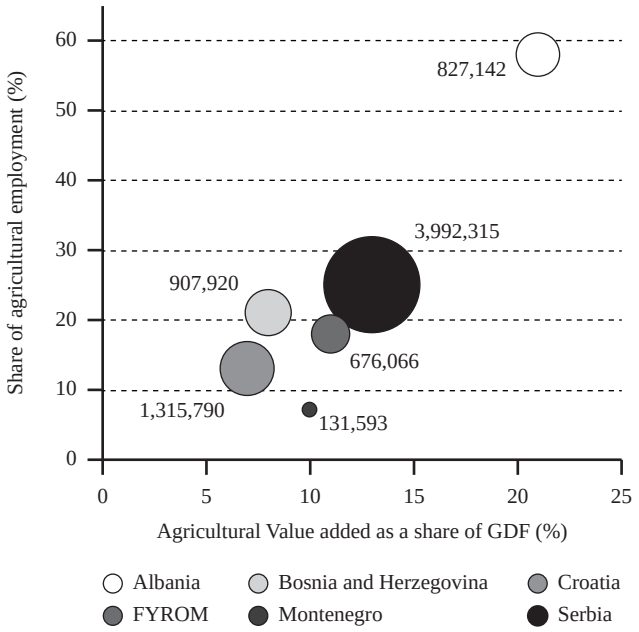

Figure 1: The basic indicators of agriculture in six Western Balkan countries in 2009. The size of the circles reflect the size of agricultural production (international dollar).
Data sources: World Bank and FAO, Volk (2010) for Serbia

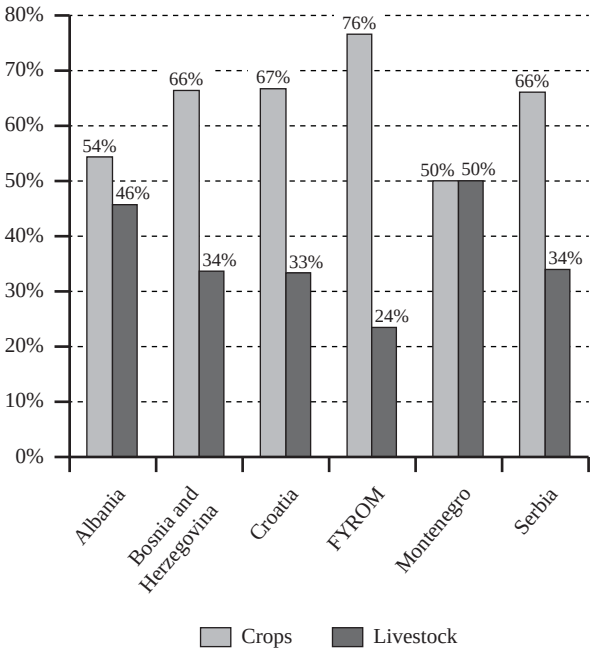

Figure 2: The sectoral structure of production value in six Western Balkan countries in 2009.
Data source: FAO

are dominant in France or Italy, while UK or Denmark can be characterised by the dominance of livestock production). In accordance with the sectoral production, the lack of irrigation can cause huge losses in production under unfavourable natural conditions. (It can be clearly seen on the time series that droughts caused huge production losses in 2000, 2003 and 2007 (Mizik, 2011a)). From this aspect the FYROM, where 2.7% of utilised agricultural area (UAA) is irrigated has the best position, while in case of Croatia and Serbia

[1] International dollar is a theoretical currency used by FAO, World Bank, International Monetary Fund or United Nations. It combines exchange rate, purchasing power parity and international average prices of commodities. It shows the purchasing power that the USD had in the United States at the given year. Therefore it is better for comparisons, but cannot be directly converted to other currencies simply using exchange rates.

these shares are only 0.25% and 0.51% respectively, according to the World Bank. But even the Macedonian value is fairly low. According to the Eurostat database, irrigation is more common in the EU (around 10%) (http://epp.eurostat.ec.europa.eu/), especially in the Mediterranean countries (e.g. 40% in Greece).

The relevance and importance of agriculture can be measured by its share of total exports and imports. The WTO International Trade Statistics database contains Standard International Trade Classification (SITC) Rev. 3 sections 0, 1, 4 and divisions 21, 22, 23, 24, 25, 26 and 29 of agricultural food and raw materials. The highest share of agricultural exports in total exports can be found in Serbia where it generated almost 25% of the foreign revenues in 2009 (Figure 3). However, it has historical roots as the initial Serbian-Montenegrin value was almost 30%. The Albanian value is the closest to the EU average (EU-27: 10.8%, EU-12: 9.6% calculated from the WTO database), while the other countries' values are between 14 and 17%.

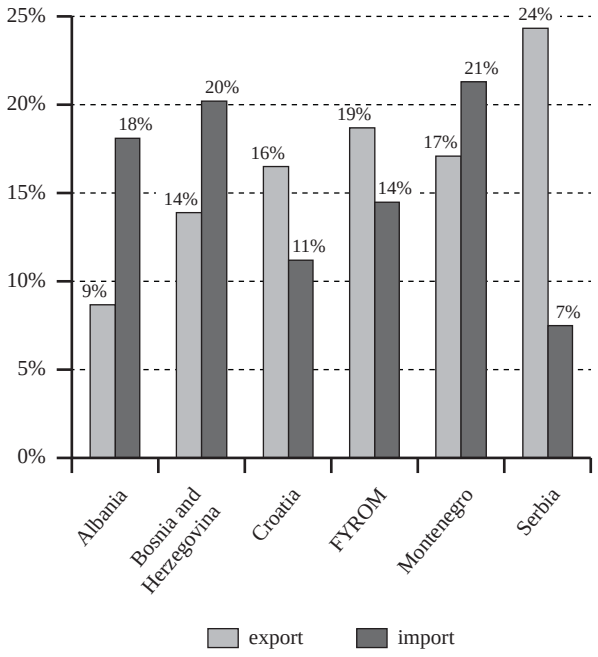

Figure 3: The share of agricultural exports and imports within the total exports and imports of six Western Balkan countries in 2009 (2007 for Montenegro).
Data source: WTO

Regarding the relative importance of agricultural imports, lower values can be seen in Croatia, the FYROM and Serbia, while there are higher ones in Albania, Bosnia and Herzegovina and Montenegro (Figure 3). This is not surprising because when agricultural exports are significant in a given country, it is less likely that agricultural imports would also be high. Serbia is a good example of this with the highest share of exports and the lowest share of imports (7.5%). The previous downward trend ended in 2009 when agricultural imports increased more than the total imports. The significant growth of national production resulted in a huge drop in import dependency in Albania, although the value of the index is still around 18%. It enhances the above mentioned efficiency problems. This value is itself very high, but taking into consideration the fact that agriculture contributes about of 20% GDP makes it even higher. In this case the Croatian value is the closest to EU-27 average (11.1%), while the slightly lower Serbian one is in accordance with the average of the NMS (8.3% calculated from the WTO database).

Analysis of the structure of agricultural exports and imports shows whether they are dominated by raw materials or processed products. In the case of exports, the latter is more desired, because the value added is much higher and competitiveness is not linked almost entirely to the price. The structure of agricultural exports has shifted in a favourable direction in recent years as the share of raw materials has showed a decreasing trend (WTO database). The Serbian and Macedonian values are even at a lower level than the average of the EU (EU-27: 13.9%, EU-12: 15.2% calculated from the WTO database). But one should note that these values are still at a high level in the other countries, for example they surpass 30% in Albania and BiH (Figure 4). The latter is even worse in the light of the less favourable endowments of the country. BiH should make more efforts to produce higher value added agricultural goods. According to the national endowments, it should focus on organic production instead of input intensive goods (Bojnec, 2005).

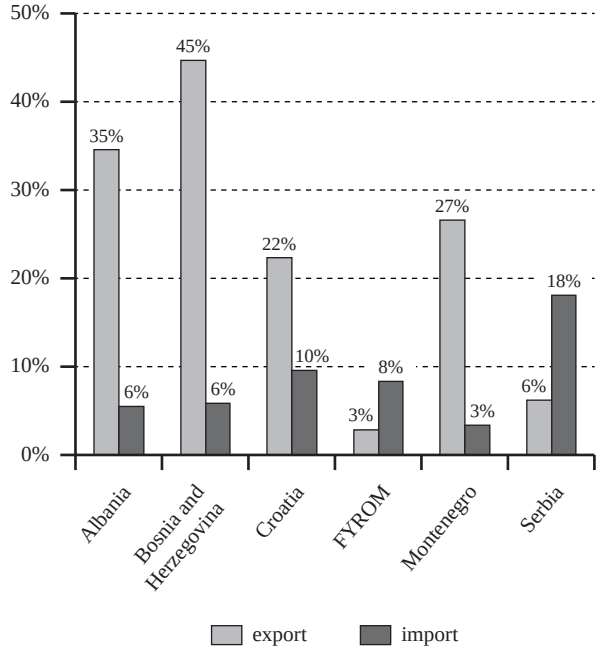

Figure 4: The share of raw materials in agricultural trade in six Western Balkan countries in 2009.
Data source: WTO

Regarding agricultural imports, the opposite judgement applies: the higher the share of raw materials, the better the import structure is. The shares of raw materials within agricultural imports are, except in Serbia, between 3% and 8%, but they are generally at a lower level than for exports. In the EU these shares are almost the same as they were for the agricultural exports with no significant difference among the Member States (13.6% for the EU-27 and 13.4% for the EU-12 calculated from the WTO database). The unfavourable export and import composition, when the share of raw materials in the exports is higher than in the imports, was

shown by several studies (e.g. Bojnec and Fertő, 2010; Volk, 2010) and also by this analysis. From this aspect BiH is in the worst position, while Serbia and especially the FYROM can be found on the other side. A serious contingency is embedded in this phenomenon, because under the given circumstances the competitiveness of the exports is determined by the price. Taking into consideration the relatively high transportation costs of mass products, it can easily result in a significant decline in quantities and therefore in export revenues.

But it is a fact that agriculture plays an above average role in human nutrition in these countries. It can be confirmed by the high, although continuously decreasing share of food products and beverages in the households' expenditures. It has the highest share in Albania (57.8%), and the lowest in BiH (35.2%). However, even the latter is much higher than the 19.4% average of the EU which includes the highest EU value of almost 50% for Romania (Eurostat database).

Productivity issues

One of the tools for measuring productivity in agriculture is value added per worker, and this can be compared directly without further calculations. As it could be anticipated by the previous datasets, Albania has the worst situation followed by Montenegro (USD 2,349 and 2,656 respectively, Table 1), indicating enormous efficiency problems. BiH showed the most notable growth[2] but even that was not enough to catch up with the best performing country, Croatia. According to the World Bank database, the Croatian USD 15,137 value counts really high as the EU average is USD 17,931, and much higher than the Hungarian or Romanian values (USD 10,948 and 8,993 respectively). Naturally, the development of value added per worker shows a close connection with the performance of the crop sector, which was heavily affected by the droughts causing lower efficiency. It is strengthened by two factors: the dominance of crops in the majority of the countries and the low share of irrigated land.

Table 1: Value added per worker [constant USD 2,000] in six Western Balkan countries in 2009.

Albania	BiH	Croatia	FYROM	Montenegro	Serbia
2,349*	14,299	15,137	5,811	2,656	3,218*

* author's calculation based on UN database and exchange rates
Data sources: World Bank

The key areas of efficiency of the agricultural performance are agricultural production and yields of the main commodities. In the following part the three main products (maize, pork and cow milk) of the countries are examined. The reason for choosing these commodities is their dominance in the regional production.[3] The most significant maize producer of the region is Serbia (Table 2) which produced 64% of the maize production of the region in 2009. The next highest was Croatia with maize production over 2 million tonnes and BiH with almost 1 million tonnes. The maize production of the region has increased by 88% compared to 2000 (FAO database).

Table 2: Maize production and yields in six Western Balkan countries in 2009.

	Area harvested (ha)	Production (1000 t)	Yield (t/ha)
Albania	47,600	265.1	5.57
BiH	188,688	962.9	5.10
Croatia	296,910	2,182.5	7.35
FYROM	32,466	154.2	4.75
Montenegro	2,664	1.1	2.52
Serbia	1,208,640	6,396.3	5.29

Source: author's calculations based on FAO database

Maize yields show huge differences in the countries. The highest figure was observed in Croatia (7.35 t/ha), while the lowest was in Montenegro (2.52 t/ha). With similar endowments to Montenegro, the FYROM was able to achieve a higher yield (4.75 t/ha). The three other countries can be characterised by yields around the regional average. Compared to 2000, the average yield of maize went up by 60% (Mizik, 2011a), but these values are at a relatively low level, even the Croatian one. They are far below the average of the EU-15, which was 9.26 t/ha in 2009 (Eurostat database). It indicates that the use of proper production techniques (quality seeds, proficiency, high-tech machinery, etc.) can result in higher outputs via increased yields even if the agricultural area is not extended.

The second important output to discuss is pork production. Although the cattle population decreased by 30% (from 4 million to 2.8 million) in the last 18 years (Mizik, 2011a), mainly due to the huge Serbian decline, the pig population seemed to be stable. Although the Serbian stock declined, the increase in the other countries' population compensated for that. In accordance with the headcount data (Table 3), Serbia was the most dominant pork producer in the Western Balkans with a share of 76.3% (Table 4).

Table 3: Headcounts of cattle and pig population in six Western Balkan countries in 2009 (2008 for Montenegro cattle data) (1,000 animals).

	Albania	BiH	Croatia	FYROM	Montenegro	Serbia
Cattle	494	458	447	253	109	1,002
Pig	160	529	1,250	194	11	3,631

Source: author's calculations based on FAO database

Table 4: Pork and cow milk production and yields in six Western Balkan countries in 2009 (2008 for Montenegro cow milk production).

	Pork		Cow milk	
	Production (1,000 t)	Yield (kg/animal)	Production (1,000 t)	Yield (kg/animal/year)
Albania	12.5	67	908	2,572
BiH	9.7	67	757	2,580
Croatia	131.0	76	818	3,850
FYROM	8.3	98	343	2,636
Montenegro	2.4	102	169	2,305
Serbia	528.0	98	1,509	2,647

Source: author's calculations based on FAO database

[2] It should take into consideration that the BiH value does not reflect to the importance of informal employment in the country. The World Bank database used the official data (2.5%) for the calculation, which resulted in this high value. According to Bajramovic (2010), the real agricultural employment was 21.2% in 2009.

[3] At country level there are some differences: wheat production is higher in Albania and FYROM than maize; beef is more significant in Albania, BiH and Montenegro than pork. Cow milk is dominant in every Western Balkan country. Goat and sheep milk are important in Albania and FYROM but they have only slightly more than 10% share in total milk production (FAO database).

Pork production shows a high correlation with the head-count data. The production structure has changed somewhat; the lower Serbian production was replaced by the doubled Croatian one. The high Serbian, Montenegrin and Macedonian yields should be noted. These values are around the average of the EU, where only Italy could realise 125 kg, whilst for instance Belgium and the Netherlands remained under 100 kg/animal (FAO database). The main reasons behind the low values are the low-scale production (Albania) and consumer preferences for young animals (BiH). The high demand for young animals makes animal fattening less attractive and results in low yields in the meat sector (Bajramovic, 2011).

Regarding milk, Serbia produced the largest amount of milk in the region, but Albania was able to continuously increase its production and almost reached one million tonnes output in 2009 (Table 5). In the light of decreasing Serbian and increasing Albanian production, Albania would become the most significant milk producer of the region in the next few years (Mizik, 2011a). Regarding cow milk production, the region showed a growing tendency due to the significant growth of average milk yield. The Croatian yield is by far the highest (3,850 kg/animal/year), but even this value was below the average of the EU, which was 6,707 for the EU-27 and 5,567 for the NMS (EC, 2010). It also indicates enormous efficiency reserves which could be activated by using leading-edge technologies.

Table 5: Changes in agricultural labour force in four Western Balkan countries in 2008 (2006 for Albania).

	Number of agricultural workers (1,000)	Change to the previous year
Albania	542.0	-0.6%
Croatia	221.7	+5.6%
FYROM	119.8	+11.2%
Serbia	708.8	+28.3%

Source: author's calculations based on ILO database

The agricultural trade of the Western Balkans

Trade issues can be analysed by export, import and the trade balance. Serbia is the number one agricultural exporter of the region and exported USD 300 million more than Croatia (Figure 5). The other countries export much less than Croatia or Serbia. Croatia is the largest importer followed by BiH and Serbia. Only Serbia has a trade surplus, all of the other countries are net importers of agricultural goods. But the world financial crisis greatly affected all of them and caused a brake both in their export (-6%) and import (-18%) expansion. In value it resulted in a better trade balance by almost USD 1.2 billion compared to the previous year (Mizik, 2011a). The trade deficit of the region was almost USD 2 billion in 2009, but BiH accounted for 63% of this.

Regarding both exports and imports, the EU is the most important trading partner of the region. Three out of six Western Balkan countries are not yet members of the WTO: BiH, Montenegro and Serbia have observer status. The EU pays special attention to the WTO's Sanitary and Phytosanitary Measures, so need to do these countries. Owing to the high relevance of the EU, the earliest implementation of the EU

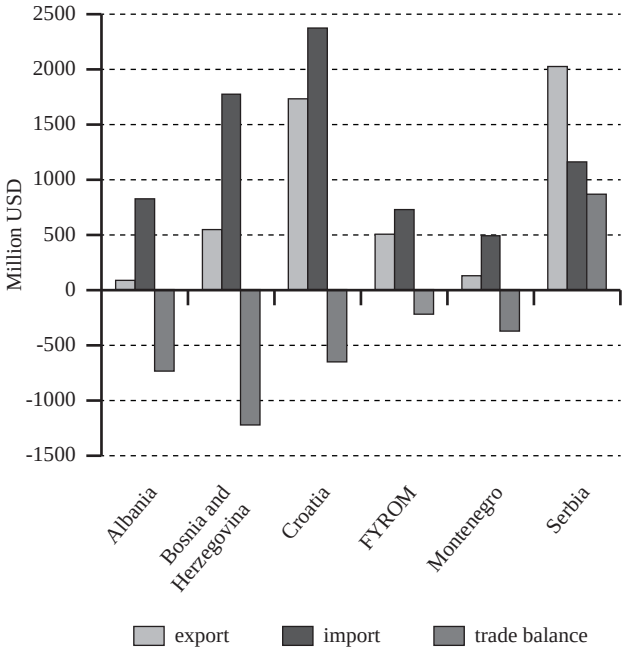

Figure 5: The actual state of agricultural trade in six Western Balkan countries in 2009. The latest available Montenegrin data, which is USD 127 million from 2007.
Data source: WTO

rules on food hygiene and official quality control is essential for these candidate and possible candidate countries (Mizik, 2010). It is a question of market access and export competitiveness. A special pricing system, which encourages farmers to produce high-quality products, could be an element of it (EBRD, 2007). However, remarkable steps have been made: there are independent food safety agencies in some countries (Croatia, BiH, the FYROM) and some have already been acknowledged by the EU (Mizik, 2010). For example the Croatian Food Agency obtained the ISO 9001:2008 certificate in January 2009. Serbia seems to be lagging behind as the food safety law has not yet been adopted and the food safety agency is not established (Rasavac and Cuk, 2009). But it should be kept in mind that the establishment of a food safety agency cannot itself solve the food safety problems if it does not have sufficient resources such as qualified and well-paid staff, financial resources for testing, well-equipped laboratories with satisfactory capacity, etc.

The major determining factors of agricultural performance

Input use

An important input of production is the labour force. Reliable data are available only for four countries (Albania, Croatia, the FYROM and Serbia) in the International Labour Organisation (ILO) database (http://laborsta.ilo.org/). Except for a slight decrease in Albania, all of the countries showed an increase, especially Serbia (Table 5). In case of Serbia it was the reason behind the increased share of agricultural labour force from 2008 to 2009. Agriculture is an important

employer in Serbia due to the reduced employment opportunities in the other two sectors (Bogdanov and Vasiljevic, 2011). In addition, this enormous temporary increase was also caused by the significant change in the tax system. It was regressive and imposed higher tax on low-income labour until 2007 (Arandarenko and Krstic, 2008). Contrary to this, the EU can be characterised by continuous out-migration from the agricultural sector, particularly in the NMS.

The next important resource is the available land used for agricultural production (agricultural area) and within that the share of arable land. In the Western Balkans the most agricultural land can be found in Serbia, while the least was in Montenegro followed by the FYROM (Figure 6). The order basically follows the total size of the countries except BiH and Croatia, where the bigger county has less agricultural area, although it should be mentioned that a significant change was made in the Croatian methodology in 2004, which resulted in a 40% decline in the agricultural area and almost 25% reduction in the arable land (Mizik, 2011b). It added up to the highest share of arable land in Croatia in the region. Not surprisingly, the lowest values can be found in Montenegro and the FYROM, as both countries are basically mountainous areas. The decreasing agricultural area and the increasing arable land together might be indicative of a process of withdrawal of less favourable lands from production.

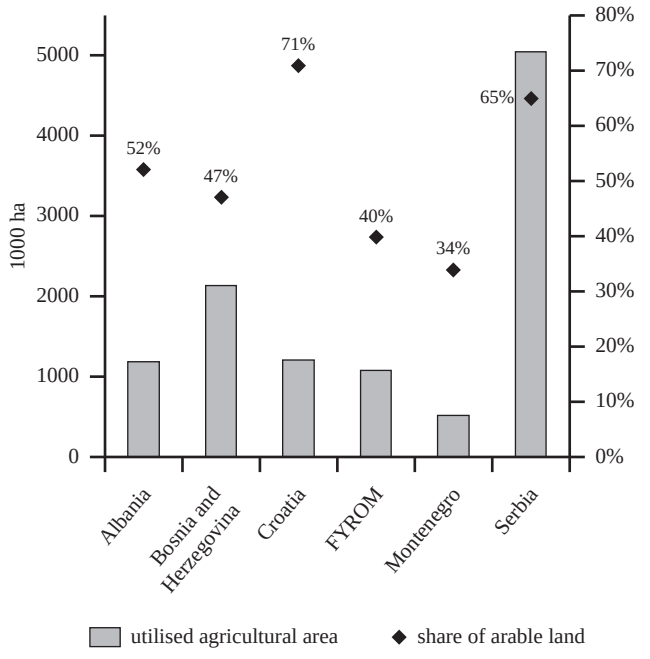

Figure 6: Agricultural area and the share of arable land in six Western Balkan countries in 2009.
Data source: FAO

One of the possible approximations of the development of technology in agriculture is the equipment supply. In this case the number of tractors was used (Table 6). The situation of Western Balkan countries does not paint a nice picture, while accuracy of the extremely high values is questionable. For instance, in Croatia the number of tractors increased from 38 to 2,188 in 2003. The reason was the Agricultural Census carried out in 2003. There are huge differences among the countries. The two extreme values are 2,208 tractor/100 km^2 in Croatia and 18 tractor/100 km^2 in Serbia, but it should be mentioned that the Serbian value refers only to enterprises and cooperatives. The Republic Bureau of Statistics did not collect these data for private holdings from 2001. In 2001 this value for them was 1,207 tractors/100 km^2. On the other hand, the Croatian value is very high even in the context of EU-15 as only Italy has a higher rate (2,667 tractor/100 km^2), while the German or French values are about one quarter of this (646 and 615 tractor/100 km^2 respectively) according to the World Banks' WDI database. From this aspect even the Macedonian figure can be considered as high. Another important element of this issue is how the power of these machines corresponds to the endowments, particularly to the low scale structure of production, which will be overviewed in the next subsection.

Table 6: Number of tractors per 100 km^2 arable land in six Western Balkan countries in 2008 (2005 for Montenegro).

	Number of tractors per 100 km^2 arable land (No)	Change to the previous year
Albania	122	-3.9%
BiH	283*	-0.4%
Croatia	2,208*	-0.9%
FYROM	1,240*	-0.3%
Montenegro	1,829	N/A
Serbia	18	-5.3%

Source: author's calculations based on World Bank database. * Estimated value

Besides the machinery, the unsatisfactory level of fertiliser use could be the reason for lower maize yields than in the EU. It is examined on the basis of arable land (Table 7). The Croatian values are the highest and the only one which increased compared to the previous year. The other countries use between 12 and 115 kg/ha. The Serbian value is typical of the EU NMS and just a little lower than the 143 kg/ha average of the EU (World Bank's WDI database). It indicates that higher yields can be reached by using more fertiliser in most of the Western Balkan countries. Croatia is a special case, as this country is well equipped and uses high rates of fertiliser. It seems that there other constraints on catching up with the higher yields of the EU, such as limited soil productivity.

Table 7: Fertiliser use per 1 ha of arable land in five Western Balkan countries in 2008.

	Fertiliser use (kg/ha)	Change to the previous year
Albania	38	-32.1%
BiH	12	-42.9%
Croatia	388	23.6%
FYROM	56	-15.2%
Serbia	115	-21.8%

Source: author's calculations based on World Bank database

The structure of agricultural production

Analysis of the structure of agricultural production (number of producers and average farm sizes) gives a good basis for revealing efficiency and competitiveness problems. The fragmented farm structure is obviously disadvantageous in crop production which is the dominant sector of the Western Balkans' agriculture. In most of the cases data for agricultural output by farm categories (agricultural enterprises/

Table 8: Number of agricultural holdings and distribution of UAA in six Western Balkan countries in 2005 (2003 for Montenegro) (1000).

Categories	Albania	BiH	Croatia	FYROM	Montenegro	Serbia
Agricultural holdings	394.9	515.0	449.9	192.4	43.2	778.9
>5 ha	394.6	400.0	385.7	184.4	28.6	604.4
5 - 10 ha	0.2	90.0	42.6	6.3	12.3	131.4
< 10 ha	0.1	25.0	21.6	1.7	2.3	43.1
UAA (ha)	427.3	2,444.0	1,077.4	264.4	136.6	2,869.0
>5 ha	425.1	N/A	306.9	188.6	52.8	1,201.6
5 - 10 ha	1.3	N/A	214.2	42.7	27.9	957.7
<10 ha	0.9	N/A	556.3	33.1	55.9	709.7
Average size	1.1	4.7	2.4	1.4	3.2	3.7

Note: Data for the FYROM and Serbia refer only to private family farms (without agricultural enterprises and cooperatives)
Sources: Arcotrass (2006), MonStat (2003) for Montenegro, SSO (2007) for FYROM

private farms) are not available in the national statistics of Western Balkans. The majority of UAA is generally in private hands and the private sector dominates the agricultural production. Table 8 shows the number of agricultural holdings and the distribution of UAA by size groups. Comparing UAA to the earlier analysed agricultural area, there are large differences which cannot be explained only by the exclusion of agricultural enterprises. It has multiple reasons. Besides the different data sources, Table 8 does not include government owned or used (directly or by governmental companies) area. In addition, it is an interesting characteristic of the Western Balkans that some agricultural land is not cultivated. It is especially typical in Serbia, where around 20% of the available agricultural land is not in use (Njegovan and Bošković, 2006). There are various reasons for this, from land mines to intensive out-migration (FAO, 2005).

The number of agricultural units refers to the size of agricultural area (Table 8). Generally countries with higher UAA have more agricultural holdings. Besides their number, their distribution is also very important. It seems to be a general phenomenon of the Western Balkans' agriculture that the majority of the producers are small (Mizik, 2010). One of its most important reasons is the former Yugoslavian agricultural policy which had limited farm sizes. The 10 hectares maximum was in use until the mid-1980s (Njegovan and Bošković, 2006). At least two thirds of the production units belong to the under 5 hectares size category in each country. Moving toward bigger size categories, the number of holdings is continuously decreasing. The distribution of UAA shows a better picture as farms in the lowest size category use a lower percentage of the total UAA. One should note that the agricultural production is dominated by small farms in the FYROM and Albania. According to the average size, Albanian farms are the smallest with 1.1 ha/holding. In the other countries the majority of UAA can be found in the other two size categories (5-10 and above 10 ha). Croatia is special from this aspect as the highest share of UAA is in the largest size category (above 10 ha). But the average farm sizes are at a very low level and far behind the EU's 15 ha/farm which also counts as a low value at international level.

Generally, the private farms can be characterised by low sizes starting from 1.1 (Albania) to 4.7 (BiH) ha/farm. It is low in itself, but in most of the cases they are formed from small parcels, which makes the production more costly and less efficient. The major problem is the geographical distribution of these parcels: they are very often located far from each other. Moreover, this type of land distribution is one of the most important barriers of a well functioning lease market. Small-scale production seems to be the bottleneck of the Western Balkan's agriculture. It is closely related to competitiveness. Consolidation of farm parcels should be a key issue of the agricultural policies. For example in Albania its governmental tool is the promotion of leasehold (World Bank, 2006). But practical experiences show that this is a long process and without strong political will it cannot be carried out. One of its evidences is the slow increase in the farm sizes over the years. For instance it was 1.2 ha/farm in Albania and 1.7 ha/farm in the FYROM in 2008 (Volk, 2010).

A well functioning land market requires reliable, precise and up-to-date land registers, which do not exist in the majority of the Western Balkan countries. The Croatian shift from the old cadastral records to the Eurostat-compatible one served this purpose. It has utmost importance from the aspect of EU accession, as the implementation of CAP requires not only sufficient institutional background but also available and reliable data sources (for example for the FADN system).

Prices

The development of prices is linked to the analyses above; therefore it follows the same order. Generally it seems that two maize price centres exist (Table 9). The prices are around USD 150/tonne in the big producer countries (Croatia, Serbia)[4]; while in the other countries they are above USD 300/tonne. It is very similar to the EU's pricing: the bigger producer countries are closer to the lower price centre, while the smaller producer countries are facing with higher prices.

Table 9: Producer prices (USD/tonne) in five Western Balkan countries in 2008*.

	Albania	BiH	Croatia	FYROM	Serbia
Maize	393	309	141	358	177
Pork	5,007	2,479	2,732	2,801	2,777
Cow milk	442	484	499	572	425

* There are no Montenegrin producer price data in the FAO database
Source: author's calculations based on FAO database

Regarding pork, prices varied between USD 2,500 and 2,800/tonne, while in Albania it surpassed USD 5,000/tonne. (In general, Albania can be characterised by high agricultural prices due mainly to low scale production. In this special case it is strengthened by the majority of Muslims in the Albanian population who prefer beef or lamb to pork). Compared to the averages of the EU, it is extremely high as the most sig-

[4] It should be added that both Croatia and Serbia had bumper crops in 2007.

nificant European producers (e.g. Germany, France or the Netherlands) are below USD 2,000/tonne (FAO database).

The highest milk price can be found in the FYROM. It was USD 572/tonne in 2008 which is higher than in the majority of the EU Member States. The other countries faced with average prices below USD 500/tonne, which is line with the EU's prices. Regarding milk prices, there is no place for further price convergence.

The impacts of agricultural policy

The competitiveness of agriculture is determined by the size and the type of budgetary supports. From this aspect (again) the Croatian agriculture has the best position; the average support is nearly EUR 400/UAA. It is very close to the average of the EU, but higher than for example the Czech value (Eurostat database). Beside the Croatian one, the other values are between EUR 25 and 53/UAA, but at least all of them showed some increase compared to the previous year. Especially the Macedonian one is remarkable (161.1%), although it is mostly due to the low base value in 2007. It is obvious that higher level of support would lead to significant growth in agricultural output. Taking a closer look at the structure of the supports in the Western Balkans, much of the money can be classified as first pillar payment and linked directly to production (Lampietti *et al*., 2009). In general, the Croatian support structure is most similar to that of the EU, while the Serbian is the most different (Erjavec, 2010).

Table 10: Budgetary supports to agriculture per UAA [EUR/ha] in six Western Balkan countries in 2008 (2007 for Croatia).

	Support (€/ha)	Change to the previous year
Albania	39.9	3.3%
Bosnia-Herzegovina	40.4	24.8%
Croatia	358.9	18.9%
FYROM	41.7	161.1%
Montenegro	24.8	31.2%
Serbia	52.6	50.6%

Source: author's calculations based on FAO database and Volk (2010)

Regarding land, Western Balkan countries introduced similar regulations. It led to the dominance of private ownership, similarly to the EU. Its legal background was established in early 1990s (in 1992 in Serbia and Montenegro and in 1991 in the other countries). The share of individual ownership varies from 80% in the FYROM to 95% in Albania (Arcotrass, 2006). A common characteristic of the transition countries can be found here too, the significant role of corporate holdings (former government-owned companies and co-operatives) in the production. The so-called dual production structure can be identified in every country except Albania. The way of privatisation was also similar in these countries; the former owners received back their properties. The exception was again Albania, which followed the principle of 'the land belongs to who cultivated it'. It was a very popular method in the former Soviet countries, especially in Armenia and Georgia (Lerman *et al*., 2002).

In the international trade the already WTO members have advantages over the observer ones (BiH, Montenegro and Serbia). The latter will face serious challenges and it restricts their active participation in international trade. One of the most serious effects of WTO membership is the lowered external protection (basically tariffs) which results in higher competition on the internal markets due to the cheaper import products. Nevertheless, the Western Balkan countries have numerous preferential agreements with their most important trade partner, the EU (EC, 2000). It allows custom free exports with almost no quantity restrictions for a wide range of agricultural products. Beef is an exception and some other commodities have lower tariffs or quotas, such as wine, sugar or some fishery products. Import ban is quite rarely used by the EU, e.g. in case of swine flu.

Conclusions

Analysis of the Western Balkan countries' agriculture provided some important lessons. The indicators used to demonstrate the relevance of the sector (value added, share of agricultural employment) showed that it is much higher than in the EU, which was used as a benchmark. In particular, the year 2008 remarkably strengthened the position of agriculture functioning as a last resort for people. It needs to be kept in mind that the majority of the Western Balkan countries export more raw materials than processed food, and import more processed food than raw materials. This unfavourable structure contains another problematic point: in the case of mass products, the most important element of competitiveness is the price, which can be offset by high transport costs. Finally, it can cause significant export decline and therefore loss in export revenues. Due to the importance of the sector, Serbia has to carry out the most efforts. The lowest share of agricultural goods in the exports can be found in Albania, where it is less than 9%. However, it indicates serious efficiency problems as the value added of the sector to the GDP is the highest (21%) among the Western Balkan countries. The importance of the sector is more highlighted by the fact that the share of households' spending on foods and beverages are at relatively a high level.

Regarding the main commodities (maize, pork and cow milk), yields in the majority of the countries are far below the averages of the EU. The structure of production is heavily biased towards crops; it has a two third share in the largest producer countries of the region (Serbia, Croatia and BiH). But crop production is very sensitive to dry weather. Reducing its impact would have been possible with irrigation, but that is at a low level in the region.

Concerning productivity, measured in value added per worker, it is at a satisfactory level in Croatia and BiH but negative natural disasters influence it highly due to the dominance of crop production. In addition to this, yields are still far behind the averages of the EU even in the best performing countries (Croatia – maize and milk, Montenegro – pork). The only exception is pork. The use of leading-edge technologies would remarkably increase the agricultural output of the Western Balkans.

The agricultural trade shows that only Serbia has trade surplus, which surpassed USD 800 million in 2009. Despite of this, the region had almost USD 2 billion trade deficits. Since the most significant trading partner of the Western

Balkans is the EU, it is a very important task for the WTO observer countries (Bosnia and Herzegovina, Montenegro and Serbia) to become members and to implement the EU's regulations on food hygiene and quality control into their national systems. From this aspect, Serbia has the most things to do.

The analysis of input use showed uneven results. The number of agricultural employees increased significantly in the last available year, particularly in Serbia, which was caused by the significant change in the tax system. The region had less utilised agricultural area but higher share of arable lands. The agricultural output did not refer to that thanks to the growing yields. But productivity would be increased by using more (and better) machinery and fertiliser. Except Croatia, these indices are less than the averages of the EU, although not far from the averages of the NMS. It indicates huge efficiency reserves in the region.

The detailed picture of the production structure pointed out one of the largest problems of the Western Balkans' agriculture, the extremely fragmented farm structure. It is impossible to produce cost efficiently and competitively on 1.1 (Albania) to 4.7 (Bosnia and Herzegovina) ha units, which are mostly broken to small parcels with different geographical locations. Increasing it requires strong political commitment. Besides that, a reliable and accurate land register, which is available at the moment only in Croatia, is an important element of EU accession. But it should be kept in mind that analysing these countries requires special attention. The methodological changes (e.g. labour classification in Albania or new land register in Croatia) can cause huge differences from one year to the next.

Regarding prices, the Western Balkan countries do not lag behind the EU as some of the prices are even higher than these benchmark values (e.g. milk in the FYROM). Except milk, Albania had the highest prices, which explains why households there spent the largest share of their incomes on food products and beverages.

In the field of budgetary support, the region cannot compete with the EU, except again Croatia. However, their values are matching those of the NMS before their accession to the EU. But the structure of supports, especially the coupled payments, needs to be reformed. Land regulations are uniformed; the private ownership is dominant with no restraint on land sale or rental. As a matter of agricultural trade, due to the preferential agreements, the majority of the Western Balkans' agricultural products can access freely to the EU markets.

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